



DIVISION OF ENVIRONMENTAL QUALITY

DRAFT OPERATING AIR PERMIT

PERMIT NUMBER: 0762-AOP-R35

IS ISSUED TO:

Albemarle Corporation - South Plant
Highway 79, Approximately 6 Miles South of Magnolia
Magnolia, AR 71753
Columbia County
AFIN: 14-00028

PURSUANT TO THE RULES OF THE ARKANSAS OPERATING AIR PERMIT PROGRAM, 8 CAR PT. 42: THIS PERMIT AUTHORIZES THE ABOVE REFERENCED PERMITTEE TO INSTALL, OPERATE, AND MAINTAIN THE EQUIPMENT AND EMISSION UNITS DESCRIBED IN THE PERMIT APPLICATION AND ON THE FOLLOWING PAGES. THIS PERMIT IS VALID BETWEEN:

April 29, 2022 AND April 28, 2027

THE PERMITTEE IS SUBJECT TO ALL LIMITS AND CONDITIONS CONTAINED HEREIN.

Signed:

Demetria Kimbrough
Deputy Director, Office of Air Quality

Date

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Albemarle Corporation - South Plant
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List of Acronyms and Abbreviations

Ark. Code Ann.	Arkansas Code Annotated
AFIN	Arkansas DEQ Facility Identification Number
C.F.R.	Code of Federal Regulations
CO	Carbon Monoxide
COMS	Continuous Opacity Monitoring System
HAP	Hazardous Air Pollutant
Hp	Horsepower
lb/hr	Pound Per Hour
NESHAP	National Emission Standards (for) Hazardous Air Pollutants
MVAC	Motor Vehicle Air Conditioner
No.	Number
NO _x	Nitrogen Oxide
NSPS	New Source Performance Standards
PM	Particulate Matter
PM ₁₀	Particulate Matter Equal To Or Smaller Than Ten Microns
PM _{2.5}	Particulate Matter Equal To Or Smaller Than 2.5 Microns
SNAP	Significant New Alternatives Program (SNAP)
SO ₂	Sulfur Dioxide
SSM	Startup, Shutdown, and Malfunction Plan
Tpy	Tons Per Year
UTM	Universal Transverse Mercator
VOC	Volatile Organic Compound

Albemarle Corporation - South Plant
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SECTION I: FACILITY INFORMATION

PERMITTEE:	Albemarle Corporation - South Plant
AFIN:	14-00028
PERMIT NUMBER:	0762-AOP-R35
FACILITY ADDRESS:	Highway 79, Approximately 6 Miles South of Magnolia Magnolia, AR 71753
MAILING ADDRESS:	P.O. Box 729 Magnolia, AR 71754
COUNTY:	Columbia County
CONTACT NAME:	Kim Clark
CONTACT POSITION:	Environmental Professional
TELEPHONE NUMBER:	(870) 235-6326
REVIEWING ENGINEER:	Alexander Sudibjo
UTM North South (Y):	Zone 15: 3670978.66 m
UTM East West (X):	Zone 15: 479859.65 m

SECTION II: INTRODUCTION

Summary of Permit Activity

Albemarle Corporation – South Plant (AFIN: 14-00028) owns and operates a chemical manufacturing facility (P.O. Box 729) on Highway 79, approximately seven miles south of Magnolia, Arkansas 71753. With this minor modification, the facility is replacing the existing molten phthalic anhydride (PA) storage tank (SN-16-31) with a new molten PA tank. The new tank will be subject to NSPS Kc. There are no changes to the facility's permitted annual emissions.

Process Description

Bromine-containing brine is extracted from geological formations via wells and is pumped to a treatment area where the bromine is separated through chlorination, steam stripping, and condensation. The sour gas from the brine is treated in a sulfur-removal process and is then either used for boiler fuel or flared.

Once the bromine has been isolated from the brine, it may be routed to one or more chemical processing units, where it is used in the manufacture of several different products: bromine chloride, ethylene dibromide, zinc bromide, hydrogen bromide, alkyl amines, alkyl bromides, flame retardant materials, and other bromine-related by-products.

Rules and Regulations

The following table contains the rules and regulations applicable to this permit.

Rules and Regulations
Arkansas Air Pollution Control Code, 8 CAR pt. 40, effective March 14, 2016
Rules of the Arkansas Plan of Implementation for Air Pollution Control, 8 CAR pt. 41, effective May 6, 2022
Rules of the Arkansas Operating Air Permit Program, 8 CAR pt. 42, effective March 14, 2016
40 C.F.R. § 60 Subpart IIII – <i>Standards of Performance for Stationary Compression Ignition Internal Combustion Engines</i>
40 C.F.R. § 60, Subpart JJJJ – <i>Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.</i>
40 C.F.R. § 63 Subpart ZZZZ – <i>National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines</i>
40 C.F.R. § 61 Subpart M – <i>National Emission Standard for Asbestos</i>
40 C.F.R. § 63 Subpart A – <i>National Emission Standards for Hazardous Air Pollutants for Source Categories, General Provisions</i>

Rules and Regulations
40 C.F.R. § 63 Subpart F – <i>National Emission Standards for Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry</i>
40 C.F.R. § 63 Subpart G – <i>National Emission Standards for Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater</i>
40 C.F.R. § 63 Subpart H – <i>National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks</i>
40 C.F.R. § 82 Subpart A – <i>Protection of Stratospheric Ozone, Production and Consumption Controls</i>
40 C.F.R. § 82 Subpart E – <i>Protection of Stratospheric Ozone, The Labeling of Products Using Ozone-Depleting Substances</i>
40 C.F.R. § 82 Subpart F – <i>Recycling and Emissions Reduction</i>
40 C.F.R. § 61 Subpart A – <i>National Emission Standards for Hazardous Air Pollutants, General Provisions</i>
40 C.F.R. § 61 Subpart FF – <i>National Emission Standards for Benzene Waste Operations</i>
40 C.F.R. § 61 Subpart V – <i>National Emission Standard for Equipment Leaks (Fugitive Emission Sources)</i>
40 C.F.R. § 63 Subpart JJ – <i>National Emission Standards for Wood Furniture Manufacturing Operations</i>
40 C.F.R. § 63 Subpart FFFF – <i>National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing</i>
40 C.F.R. § 63 Subpart EEEE – <i>National Emission Standards for Hazardous Air Pollutants: Organic Liquids Distribution (Non-Gasoline)</i>
40 C.F.R. § 63 Subpart DDDDD – <i>National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters</i>
40 C.F.R. § 63 Subpart SS – <i>National Emission Standards for Closed Vent Systems, Control Devices, Recovery Devices and Routing to a Fuel Gas System or a Process</i>
40 C.F.R. § 60 Subpart Dc – <i>Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units</i>
40 C.F.R. § 60 Subpart Kc— <i>Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After October 4, 2023</i>

Emission Summary

The following table is a summary of emissions from the facility. This table, in itself, is not an enforceable condition of the permit.

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
Total Allowable Emissions		PM	90.9	116.0
		PM ₁₀	59.3	102.6
		PM _{2.5}	See Note ¹	
		SO ₂	12,812.7	3,293.1
		VOC	525.9	499.1
		CO	95.4	188.6
		NO _x	184.4	500.0
HAPs** HAP emissions are included in VOC rates, except HCl, Hydrazine, Cl ₂ , Methylene Chloride		Total HAP	N/A	108.96
		Benzene	7.90	18.42
		Br ₂ +Cl ₂	1.60	0.10
		Cl ₂	N/A	3.64
		Cl ₂ or Halogens	N/A	0.62
		HCl	N/A	9.48
		Hydrazine	N/A	0.451
		Methanol	62.94	21.24
		Methyl Bromide	2.17	9.54
		Methylene Chloride	N/A	5.83
Air Contaminants ***		Acetone	N/A	0.40
		Ammonia	11.54	47.23
		Br ₂	8.99	28.95
		Br ₂ +HBr	4.67	20.48
		BrCl	N/A	0.88
		H ₂ O ₂	0.10	7.54
		H ₂ S	259.72	13.27
		H ₂ SO ₄	0.07	0.32
		HBr	5.58	23.69
		Refrigerant	N/A	9.62
BR-01	#1 Bromine Tower Vent Scrubber C-3042	VOC	1.5	6.6
		Br ₂	0.26	1.14
		Total HAP	N/A	0.26
		Cl ₂	N/A	0.26
BR-04	#2 Bromine Tower Vent Scrubber C-3043	VOC	3.9	16.7
		Br ₂	0.14	0.61
		Total HAP	N/A	0.13
		Cl ₂	N/A	0.13

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
BR-08A/B	Recycle HCl Storage Tank	VOC	1.1	1.4
		Total HAP	N/A	2.16
		Benzene	1.10	1.34
		HCl	N/A	0.82
BR-09	Recycle HBr Storage Tank, Vent Scrubber C-3036	Br ₂	0.02	0.09
		HBr	0.02	0.09
BR-12	Bromine Area Scrubber C-3049	Br ₂	0.30	1.31
		Total HAP	N/A	0.44
		Cl ₂	N/A	0.44
BR-14	Br ₂ Fugitive Emissions	VOC	0.5	2.2
		Br ₂ +HBr	1.39	6.09
		Total HAP	N/A	0.18
		Cl ₂	N/A	0.18
BR-15	Caustic Drum <i>Primary Operating Scenario</i>	Br ₂ +Cl ₂	1.60	0.10
		Total HAP	N/A	0.10
BR-15	Caustic Drum <i>Alternate Operating Scenario</i>	Br ₂	1.60	0.10
		Total HAP	N/A	0.10
		Cl ₂	N/A	0.10
SL-01	Gas Sweetening Process Flare <i>Primary Operating Scenario</i>	PM	0.1	0.1
		PM ₁₀	0.1	0.1
		SO ₂	0.1	0.1
		VOC	0.1	0.1
		CO	0.1	0.1
		NO _x	0.1	0.1
		Benzene	0.01	0.01
		Total HAP	N/A	0.01
SL-01	Emergency Flaring of Brinefield Gas <i>Alternate Operating Scenario #1</i>	PM	3.7	0.1
		PM ₁₀	3.7	0.1
		SO ₂	12,066.0	36.0
		VOC	3.7	0.1
		CO	13.4	0.1
		NO _x	31.4	0.1
		Benzene	0.01	0.01
		Total HAP	N/A	0.01
SL-01	Emergency Flaring of Sweet Gas <i>Alternate Operating Scenario #2</i>	PM	2.2	0.2
		PM ₁₀	2.2	0.2
		SO ₂	5.6	0.3
		VOC	2.2	0.2
		CO	7.8	0.4
		NO _x	18.4	0.9
		Benzene	0.01	0.01

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
		Total HAP	N/A	0.01
SL-02	Sulfinol Storage Tank	VOC	0.2	0.6
SR-01	Tail Gas Incinerator <i>Primary Operating Scenario</i>	PM	0.1	0.4
		PM ₁₀	0.1	0.4
		SO ₂	727.0	3,184.0
		VOC	0.1	0.4
		CO	0.3	1.1
		NO _x	0.6	2.6
		Benzene	0.01	0.01
		Total HAP	N/A	0.01
SR-01	Tail Gas Pilot Flame Deviation (<1200°F) <i>Alternate Operating Scenario</i>	SO ₂	242.6	2.9
		H ₂ S	257.4	3.1
SR-02	Sulfur Area Fugitives	SO ₂	0.2	0.7
		VOC	0.7	2.0
		H ₂ S	0.30	1.31
		Total HAP	N/A	0.55
		Methanol	0.38	0.55
SR-03	Molten Sulfur Pit and Loadout	SO ₂	0.5	1.8
		H ₂ S	0.22	0.96
CB-01	Raw Material Silo	PM	0.1	0.5
		PM ₁₀	0.1	0.5
CB-04	Methanol Storage Tank	VOC	26.0	0.4
		Total HAP	N/A	0.40
		Methanol	26.00	0.40
CB-16	R-21 Vent Scrubber (North) <i>Primary Operating Scenario</i>	VOC	0.3	1.2
		Ammonia	1.00	1.10
		Br ₂	0.10	0.44
		HBr	0.08	0.02
		Total HAP	N/A	1.19
		Hydrazine	N/A	0.01
		Methanol	0.07	0.30
		Methyl Bromide	0.20	0.88
CB-17	CCF Fugitive Emissions	VOC	1.2	5.1
		Br ₂ +HBr	0.37	1.63
		Total HAP	N/A	3.88
		Hydrazine	N/A	0.02
		Methanol	0.88	3.86
CB-18	Raw Material Baghouse	PM	0.1	0.5
		PM ₁₀	0.1	0.5
		Total HAP	N/A	0.26

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
CB-21	Rundown Tanks	Total HAP	N/A	0.01
		Hydrazine	N/A	0.01
CB-22a	Truck Loading #1	Total HAP	N/A	0.01
		Hydrazine	N/A	0.01
CB-22b	Truck Loading #2	Total HAP	N/A	0.01
		Hydrazine	N/A	0.01
CB-23	Reactor Vent	Total HAP	N/A	0.56
		Hydrazine	N/A	0.01
		VOC	5.0	0.6
		Methanol	4.98	0.55
AD-01	Olefins Storage Tank #1: T-1501	VOC	0.2	0.8
AD-02	Olefins Storage Tank #2: T-1503	VOC	0.2	0.8
AD-03	Alkyl Amines Storage Tank: T-1502	VOC	0.3	1.2
AD-05	Acid Vent Scrubber: C-1531 (CD-AD-05, also formerly SB-03)	VOC	0.3	1.4
		Br ₂ +HBr	0.05	0.22
		Total HAP	N/A	0.5
		HCl	N/A	0.5
AD-07	Alkyl Amine Rundown Tank: T-1534A	VOC	0.1	0.3
AD-08	Alkyl Amines Rundown Tank: T-1534B	VOC	0.1	0.3
AD-09	Alkyl Amines Rundown Tank: T-1534C	VOC	0.1	0.3
AD-10	Alkyl Amines Storage Tank: T-1537	VOC	0.3	1.2
AD-11	Alkyl Amines Storage Tank: T-1535	VOC	0.3	1.2
AD-12	Alkyl Amines Storage Tank: T-1536	VOC	0.3	1.2
AD-13	Alkyl Amines Storage Tank: T-1538	VOC	0.3	1.2
AD-14	Alkyl Amines Storage Tank: T-1539	VOC	0.3	1.2
AD-15	Alkyl Amines Storage Tank: T-1540	VOC	0.3	1.2
AD-16	Dowtherm Furnace 3.55 MMBtu/hr Natural Gas-Fired	PM	0.1	0.2
		PM ₁₀	0.1	0.2
		SO ₂	0.1	0.1
		VOC	0.1	0.1
		CO	0.3	1.4

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
		NO _x	0.4	1.6
		Benzene	0.01	0.01
		Total HAP	N/A	0.03
AD-17	Alkyl Amines Blend Tank: D2427-A	VOC	0.3	1.2
AD-18	Sodium Bromide Brine for Recycle: T-1409	VOC	0.3	1.2
AD-20	Olefins Storage Tank: T-1405A	VOC	0.2	0.8
AD-21	Olefins Storage Tank: T-1405B	VOC	3.5	15.1
AD-23	Alkyl Amines Storage Tanks: T-1408A, B	VOC	0.1	0.2
AD-24	Product Storage: Alkyl Amines: T-1542	VOC	0.3	1.2
AD-25	Product Storage: Alkyl Amines: T-1543	VOC	0.3	1.2
AD-26	ADMA Flare <i>Alkyl Amines Scenario Emergency Flaring Events</i>	PM	0.2	0.1
		PM ₁₀	0.2	0.1
		SO ₂	0.1	0.2
		VOC	0.7	0.2
		CO	0.1	0.2
		NO _x	0.4	0.2
		Br ₂	0.02	0.01
		Benzene	0.01	0.01
		Total HAP	N/A	0.01
AD-26	ADMA Flare <i>Alkyl Amines Scenario Non-Emergency Flaring Events</i>	PM	0.8	0.1
		PM ₁₀	0.8	0.1
		SO ₂	0.1	0.1
		VOC	48.5	0.6
		CO	18.9	0.3
		NO _x	3.5	0.1
		Benzene	0.01	0.01
		Total HAP	N/A	0.01
AD-26	ADMA Flare <i>Alternate Operating Scenario NC-24 Production Emergency Flaring</i>	PM	0.8	0.1
		PM ₁₀	0.8	0.1
		SO ₂	0.1	0.1
		VOC	48.5	0.6
		CO	18.9	0.3
		NO _x	3.5	0.1
		Benzene	0.01	0.01
		Total HAP	N/A	0.01

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
AD-27	Recycle Brine Storage Tank: T-1407	VOC	0.3	1.2
AD-28	Stripped Recycle Brine Storage Tank:T-1541	VOC	0.1	0.4
AD-29	Stripped Recycle Brine Tank: T-1544	VOC	0.1	0.4
AD-32	Direct Natural Gas-Fired Heater 4.62 MMBtu/hr	PM	0.1	0.2
		PM ₁₀	0.1	0.2
		SO ₂	0.1	0.1
		VOC	0.1	0.2
		CO	0.4	1.7
		NO _x	0.5	2.1
		Benzene	0.01	0.01
		Total HAP	N/A	0.04
AD-35	Alkyl Amines Area Odor Control Vent Gas Oxidizer (VGO)	PM	0.3	1.0
		PM ₁₀	0.3	1.0
		SO ₂	0.2	0.7
		VOC	1.3	5.4
		CO	0.1	0.3
		NO _x	0.7	3.1
		Br ₂	0.03	0.14
		Benzene	0.01	0.01
AD-36	Fugitive Emissions, Including Product Loading	VOC	4.5	17.6
		Br ₂	0.30	1.31
		HBr	1.41	6.16
		Total HAP	N/A	0.16
		Hydrazine	N/A	0.01
AD-37	ADMA Condensate Collection Tank	VOC	0.1	0.3
AD-39	ADMA Brine Load Out	VOC	0.1	0.4
AD-40	Mixed ADMA Final Product Storage Tank, T-9965	VOC	0.3	1.2
AD-41	Mixed ADMA Final Product Storage Tanks, T-1408A and T-1408B	VOC	0.6	2.3
DE-01	ADMA Brine Storage Tank	VOC	0.5	2.1
TB-11	ADMA Brine Storage Tank	VOC	0.1	0.4
AB-15	Emission Control: Carbon Bed Adsorbers (CB-304 and CB-05)	VOC	1.2	5.3
		Total HAP	N/A	1.1
		Methylene Chloride	N/A	1.1

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
AB-16	Alkyl Bromide Fugitive Emissions	VOC	7.2	31.5
		HBr	0.02	0.08
		Total HAP	N/A	1.75
		HCl	N/A	0.48
		Methylene Chloride	N/A	1.27
AB-18	Alkyl Bromide Waste Water	VOC	1.5	6.3
		Total HAP	N/A	1.49
		Methylene Chloride	N/A	1.49
DB-01	Vent Scrubber	VOC	0.8	3.5
		Br ₂ +HBr	0.44	1.93
		Total HAP	N/A	0.44
		HCl	N/A	0.44
DB-02	Raw Material Storage Tank	VOC	0.1	0.5
DB-04	Product Dryer Filter	Removed upon permit issuance.		
DB-05	Product Vent Filter Silo Baghouse	Out of service.		
DB-06	Product Vent Filter Silo Baghouse	Out of service.		
DB-07	Raw Material Storage Tank	VOC	0.1	0.5
		Total HAP	N/A	0.50
		HCl	N/A	0.50
DB-08	Product Vent Filter	Out of service.		
DB-16	NC-12 Fugitive Emissions	VOC	1.5	6.4
		Br ₂	1.07	4.30
		HBr	1.39	6.08
DB-17	Back-up Water Scrubber	Br ₂ +HBr	0.10	0.44
DB-18	Receiving Baghouse	Removed upon permit issuance.		
DB-19	Product Dryer Scrubber	PM	1.0	4.3
		PM ₁₀	1.0	4.3
		SO ₂	0.2	0.7
		VOC	1.0	4.2
		CO	3.6	15.8
		NO _x	1.6	7.0
		Br ₂ +HBr	1.0	4.38
DB-20	DPE Storage Tank, D-2515 <i>During NC-15 Production Alt. Op Scenario</i>	VOC	0.9	4.0
DB-22	NC-12 Central Vacuum System	Removed upon permit issuance.		
TB-01	ADMA Storage Tank	VOC	0.3	1.2
15-02	Process Scrubber	Br ₂	0.10	0.44
		HBr	0.10	0.44

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
15-12	NC-15 Area Scrubber	PM	3.1	13.6
		PM ₁₀	3.1	13.6
		SO ₂	0.1	0.5
		VOC	2.2	9.7
		CO	0.4	1.5
		NO _x	0.4	1.7
		Br ₂ +HBr	1.32	5.79
		Benzene	0.01	0.01
		Total HAP	N/A	0.04
15-13	Raw Material Weigh Tanks D-9965, D-9966	VOC	0.8	3.5
15-14A	Natural Gas Process Heater 2.15 MMBtu/hr	PM	0.1	0.1
		PM ₁₀	0.1	0.1
		SO ₂	0.1	0.1
		VOC	0.1	0.1
		CO	0.2	0.8
		NO _x	0.3	1.0
		Benzene	0.01	0.01
		Total HAP	N/A	0.02
15-14B	Natural Gas Process Heater 2.15 MMBtu/hr	PM	0.1	0.1
		PM ₁₀	0.1	0.1
		SO ₂	0.1	0.1
		VOC	0.1	0.1
		CO	0.2	0.8
		NO _x	0.3	1.0
		Benzene	0.01	0.01
		Total HAP	N/A	0.02
15-15	Fugitive Emissions	VOC	1.0	4.4
		Br ₂	1.13	4.95
		HBr	0.18	0.75
		Total HAP	N/A	0.09
		HCl	N/A	0.09
15-16	Pollution Control: Dust Scrubber J-99601 CD-15-16	PM	1.2	5.3
		PM ₁₀	1.2	5.3
15-17	Rail Car Vent	VOC	0.7	3.1
15-18	DPE Byproduct/Heavy Organics Storage Tank (serving NC-21)	VOC	1.1	0.4
15-19	NC-15 Central Vacuum System	Removed upon permit issuance.		
15-20	DPE Byproduct/Heavy Organics Truck Loading	VOC	6.9	0.4
15-21	Natural Gas Process Heater	PM	0.1	0.1

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
	2.15 MMBtu/hr	PM ₁₀	0.1	0.1
		SO ₂	0.1	0.1
		VOC	0.1	0.1
		CO	0.2	0.8
		NO _x	0.3	1.0
		Benzene	0.01	0.01
		Total HAP	N/A	0.02
16-01	TBPA Production: Packed Scrubber	PM	0.1	0.5
		PM ₁₀	0.1	0.5
		SO ₂	0.5	2.2
		Total HAP	N/A	0.44
16-02	TBPA Production: Off Gas Scrubber	SO ₂	0.4	1.8
		Br ₂	0.1	0.44
16-05	EBTBP Production: Packed Scrubber	VOC	0.1	0.5
16-06	EBTBP Production: Converter Scrubber	PM	0.4	1.8
		PM ₁₀	0.4	1.8
		VOC	0.1	0.5
16-07	EBTBP Production: In-Process Storage Silo Vent Filter	PM	0.3	1.4
		PM ₁₀	0.3	1.4
16-08	EBTBP Production: Product Transfer and Storage Fabric Filter	PM	0.3	1.4
		PM ₁₀	0.3	1.4
16-10	Product Transfer and Storage Fabric Filter	PM	0.5	2.2
		PM ₁₀	0.5	2.2
		SO ₂	0.1	0.5
16-12	TBPA Weigh Hopper Filter	PM	0.1	0.5
		PM ₁₀	0.1	0.5
16-13	TBPA Production: Vacuum Pump	SO ₂	0.1	0.5
16-14	Ethylene Diamine Storage Tank	VOC	0.1	0.1
16-15	Propionic Acid Storage Tank	VOC	0.1	0.1
16-16	TBPA Neutralization Tank	SO ₂	0.1	0.5
16-17	Ethylene Glycol Tank	VOC	0.1	0.1
		Total HAP	N/A	0.09
16-18	Vent Gas Oxidizer 6.47 MMBtu/hr	PM	0.1	0.3
		PM ₁₀	0.1	0.3
		SO ₂	0.1	0.4
		VOC	0.7	2.9
		CO	0.9	3.8
		NO _x	0.7	2.8

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
		Benzene	0.01	0.01
		Total HAP	N/A	2.28
16-19	Charge Hopper Vent	PM	0.3	1.4
		PM ₁₀	0.3	1.4
		SO ₂	0.1	0.5
16-20	Heat Exchange Heater 4.4 MMBTU/hr	PM	0.1	0.2
		PM ₁₀	0.1	0.2
		SO ₂	0.1	0.1
		VOC	0.1	0.2
		CO	0.4	1.7
		NO _x	0.5	2.0
		Benzene	0.01	0.01
		Total HAP	N/A	0.04
16-21	Product Storage Hopper	PM	0.2	0.9
		PM ₁₀	0.2	0.9
		VOC	0.4	1.8
		Total HAP	N/A	1.23
16-22	By-Product Powder Packaging	PM	0.1	0.1
		PM ₁₀	0.1	0.1
		VOC	0.1	0.1
		Total HAP	N/A	0.04
16-23	NC-17 Operation: Fugitive Emissions	SO ₂	0.9	3.9
		VOC	6.4	27.8
		Br ₂	0.62	2.72
		H ₂ SO ₄	0.05	0.22
		Total HAP	N/A	3.38
16-24	Raw Material Unloading, Brinks (Limited Hours of Operation)	Removed upon permit issuance.		
16-28	TBPA Neutralization Tank	SO ₂	0.1	0.5
16-29	Packaging Vent	PM	0.3	1.4
		PM ₁₀	0.3	1.4
		SO ₂	0.1	0.5
16-30	Indirect Fired Heater 1.2 MMBtu/hr	PM	0.1	0.1
		PM ₁₀	0.1	0.1
		SO ₂	0.1	0.1
		VOC	0.1	0.1
		CO	0.1	0.5
		NO _x	0.2	0.6
		Benzene	0.01	0.01
		Total HAP	N/A	0.01

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
16-31	Molten Phthalic Anhydride Storage Tank	VOC	3.8	0.8
		Total HAP	N/A	0.8
16-33	Molten Sulfur Tank T-9365	Removed upon permit issuance.		
BH-01	#1 Boiler 340 MMBtu/hr	PM	3.4	-
		PM ₁₀	2.6	-
		SO ₂	-	-
		VOC	1.9	-
		CO	13.6	-
		NO _x	47.6	-
BH-02	#2 Boiler 340 MMBtu/hr	PM	3.4	-
		PM ₁₀	2.6	-
		SO ₂	-	-
		VOC	1.9	-
		CO	13.6	-
		NO _x	47.6	-
BH-03	Rental Boiler #1 ≤100 MMBtu/hr	PM	0.8	-
		PM ₁₀	0.8	-
		SO ₂	-	-
		VOC	0.6	-
		CO	3.7	-
		NO _x	3.7	-
BH-04	Rental Boiler #2 ≤100 MMBtu/hr	PM	0.8	-
		PM ₁₀	0.8	-
		SO ₂	-	-
		VOC	0.6	-
		CO	3.7	-
		NO _x	3.7	-
BH-01 BH-02 BH-03 BH-04	Combined Boiler Emissions	PM	-	29.8
		PM ₁₀	-	22.7
		SO ₂	5.6	24.6
		VOC	-	16.4
		CO	-	119.2
		NO _x	-	417.0
		Benzene	N/A	0.01
		Total HAP	N/A	3.82
21-01	Emission Control: Vent Gas Incinerator (FL-3671) (CD-21-01) 5.02 MMBtu/hr	PM	0.1	0.5
		PM ₁₀	0.1	0.5
		SO ₂	0.1	0.1
		VOC	1.8	5.3
		CO	5.0	21.9
		NO _x	0.5	2.2

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
		Total HAP	N/A	6.88
		Benzene	1.71	5.24
		HCl	N/A	1.54
21-02	NC-21 Fugitive Emissions	VOC	4.8	21.0
		Total HAP	N/A	9.10
		Benzene	1.37	6.02
		HCl	N/A	0.83
		Methanol	0.34	1.50
21-03	Wastewater Effluent	VOC	0.1	0.1
		Total HAP	N/A	0.01
		Benzene	0.01	0.01
21-04	HCl Loading Operation (Option #2)	VOC	2.2	1
		Total HAP	N/A	1.29
		Benzene	2.16	0.95
		HCl	N/A	0.34
21-05	DPE Hot Oil Furnace 13.5 MMBtu/hr	PM	0.1	0.5
		PM ₁₀	0.1	0.5
		SO ₂	0.1	0.1
		VOC	0.1	0.4
		CO	1.2	5.0
		NO _x	1.4	6.0
		Benzene	0.01	0.01
TB-04	Product Baghouse	Total HAP	N/A	0.12
Removed upon permit issuance.				
TB-05	Pneumatic Vacuum Convey System	PM	0.5	2.0
		PM ₁₀	0.5	2.0
TB-08	Dust Collector Baghouse	PM	0.3	1.4
		PM ₁₀	0.3	1.4
TB-14	Bromine Scrubber <i>Primary Operating Scenario</i>	Br ₂	0.10	0.44
TB-14	Bromine Scrubber <i>Alternate Operating Scenario Stabrome Production at NC-14</i>	Br ₂	0.10	0.44
		BrCl	N/A	0.44
		Total HAP	N/A	0.44
		Cl ₂	N/A	0.44
TB-25	Refrigerated Vent Condensers <i>NC-24 Production</i>	VOC	47.7	5.8
		Acetone	N/A	0.1
		HBr	0.1	0.1
		Total HAP	N/A	0.3
		HCl	N/A	0.2
TB-25	Refrigerated Vent Condensers <i>NC-23 MeBr Production</i>	VOC	0.5	2.0
		Total HAP	N/A	2.00

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
		Methanol	0.45	2.00
TB-29	NC-22 Fugitive Emissions <i>Primary Operating Scenario</i>	VOC	1.9	7.2
		Br ₂	0.22	0.94
		HBr	0.36	1.54
		Total HAP	N/A	0.68
		HCl	N/A	0.24
		Methylene Chloride	N/A	0.10
TB-29	Fugitive Emissions <i>Alternate Operating Scenario Stabrom Production at NC-14</i>	Br ₂	0.10	0.44
		BrCl	N/A	0.44
		Total HAP	N/A	0.44
		Cl ₂	N/A	0.05
TB-30	Fresh Sulfuric Acid Storage Tank <i>NC-23 MeBr Production</i>	H ₂ SO ₄	0.01	0.05
TB-41	Carbon Bed Solvent Recovery Units	VOC	15.8	18.5
		Br ₂	0.01	0.01
		HBr	0.05	0.08
		Total HAP	N/A	0.21
		HCl	0.01	0.01
		Methylene Chloride	N/A	0.20
TB-42	HBr Solution Storage	VOC	0.1	0.2
		Br ₂	0.01	0.05
		HBr	0.18	0.79
		Total HAP	N/A	0.05
		HCl	N/A	0.05
TB-43	Centrate Hold Up Drum	VOC	Routed to TB-41	
TB-44	Central Vacuum System	PM	0.2	0.5
		PM ₁₀	0.2	0.5
TB-45	Hydrazine Hydrate Tote	Total HAP	N/A	0.01
		Hydrazine	N/A	0.01
TB-47	Re-work Reactor (Carbon Adsorption)	VOC	50.5	0.4
		Total HAP	N/A	0.10
		Methylene Chloride	N/A	0.10
TB-48	Re-work Hopper (Dust Collector, 99.9% efficient)	PM	0.2	0.2
		PM ₁₀	0.2	0.2
TB-49	Bulk Bag Unloader	PM	0.3	0.1
		PM ₁₀	0.3	0.1
23-01	NC-23 Fugitive Emissions <i>Primary Operating Scenario</i>	VOC	1.2	5.0
		Br ₂	0.22	0.97
		HBr	0.11	0.49
		Total HAP	N/A	0.13

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
23-01	NC-23 Fugitives <i>Alternate Operating Scenario</i> <i>NC-23 MeBr Production</i>	VOC	2.4	10.3
		Total HAP	N/A	8.5
		Methanol	0.97	4.25
		Methyl Bromide	0.97	4.25
23-02	Raw Material Unloading Baghouse	PM	0.2	0.9
		PM ₁₀	0.1	0.5
		VOC	3.8*	16.6*
		HBr	0.23*	0.97*
		Total HAP	N/A	1.32*
23-03	Raw Material Scrubber <i>Primary Operating Scenario</i>	VOC	0.4	1.6
		Total HAP	N/A	0.88
23-03	Raw Material Scrubber <i>Alternate Operating Scenario</i> <i>NC-23 MeBr Production</i>	VOC	27.4	1.7
		Total HAP	N/A	1.68
		Methanol	27.37	1.68
23-04	By-product Loading	VOC	0.5	2.0
23-05	Vent Absorber	VOC	2.9	12.7
		Total HAP	N/A	1.46
23-05	Vent Absorber <i>NC-23 MeBr Production Scenario</i>	VOC	1.6	7.0
		Total HAP	N/A	5.80
		Methanol	0.40	1.80
		Methyl Bromide	0.90	4.00
23-06 23-07 23-08	Receiving Silo Baghouse Blending Silo Baghouse Discharging Silo Baghouse (emission bubble)	PM	0.6	2.7
		PM ₁₀	0.3	1.4
		VOC	3.8*	16.6*
		HBr	0.23*	0.97*
		Total HAP	N/A	1.32*
23-09	Product Packaging Baghouse	PM	0.2	0.9
		PM ₁₀	0.1	0.5
		VOC	3.8*	16.6*
		HBr	0.23*	0.97*
		Total HAP	N/A	1.32*
23-10	Product Packaging Dust Collection	PM	0.2	0.9
		PM ₁₀	0.1	0.5
		VOC	3.8*	16.6*
		HBr	0.23*	0.97*
		Total HAP	N/A	1.32*
23-11A 23-11B	Product Loading Baghouse Product Loading (Railcar)	PM	0.2	0.9
		PM ₁₀	0.1	0.5
		VOC	3.8*	16.6*
		HBr	0.23*	0.97*
		Total HAP	N/A	1.32*

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
23-12A 23-12B	Product Loading Baghouse Product Loading (Truck)	PM	0.2	0.9
		PM ₁₀	0.1	0.5
		VOC	3.8*	16.6*
		HBr	0.23*	0.97*
		Total HAP	N/A	1.32*
23-13	Floor Vacuum Baghouse	PM	0.2	0.9
		PM ₁₀	0.1	0.5
		VOC	3.8*	16.6*
		HBr	0.23*	0.97*
		Total HAP	N/A	1.32*
23-15	Phenol Storage Tank (6,500 gal)	Emissions routed to SN-23-05		
23-16	Spent Sulfuric Acid Storage Tank <i>NC-23 MeBr Production</i>	VOC	0.1	0.1
		H ₂ SO ₄	0.01	0.05
		Total HAP	N/A	0.1
		Methanol	0.10	0.10
23-17	Refrigerant Water Storage Tank <i>NC-23 MeBr Production</i>	VOC	0.1	0.1
		Total HAP	N/A	0.01
23-18	Refrigerant Water Storage Tank <i>NC-23 MeBr Production</i>	VOC	0.1	0.1
		Total HAP	N/A	0.01
BT-01	Feed Brine Oil Separator/Surge Tank (V-3011)	VOC	0.1	0.1
		H ₂ S	0.14	0.61
BT-11	Neutralization Tank (T-3110)	VOC	0.1	0.1
		Ammonia	0.2	0.9
		H ₂ S	0.01	0.05
		Total HAP	N/A	0.13
		Cl ₂ or Halogens	N/A	0.13
BT-12	Tail Brine Line Vent	VOC	0.1	0.1
		Ammonia	0.01	0.05
		Total HAP	N/A	0.05
		Cl ₂ or Halogens	N/A	0.05
BT-13	Tail Brine Tank (T-3101)	VOC	0.1	0.1
		Ammonia	0.02	0.09
		H ₂ S	0.01	0.05
		Total HAP	N/A	0.05
		Cl ₂ or Halogens	N/A	0.05
BT-16	Brinefield Oil/Water Separator (T-7001)	VOC	30.0	1.8
		H ₂ S	0.01	0.05
BT-17	Brinefield Oil Storage Tank (T-7002)	VOC	16.4	1.7
		H ₂ S	0.01	0.05
BT-21	Five Tail Brine Cooling Towers (Y-3120, Y-3121, Y-3122,	PM	4.2	18.1
		PM ₁₀	4.2	18.1

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
	Y-3123, Y-3124)	VOC	3.4	14.8
		Ammonia	10.23	44.7
		Br ₂	0.62	2.72
		HBr	0.93	4.07
		Total HAP	N/A	3.40
		Cl ₂	N/A	2.04
		HCl	N/A	1.36
BT-22	Brine Management, Fugitive Emissions Included in Ground Brine Ponds	VOC	0.1	0.1
		H ₂ S	0.02	0.09
		Ammonia	0.02	0.09
		Total HAP	N/A	0.09
		Cl ₂ or Halogens	N/A	0.09
BT-23	Line Vent	VOC	0.1	0.1
		Ammonia	0.01	0.05
		Total HAP	N/A	0.05
		Cl ₂ or Halogens	N/A	0.05
BT-24	Line Vent	VOC	0.1	0.1
		Ammonia	0.01	0.05
		Total HAP	N/A	0.05
		Cl ₂ or Halogens	N/A	0.05
BT-25	DRT Tail Brine Line Vent	VOC	0.1	0.1
		Ammonia	0.01	0.05
		Total HAP	N/A	0.05
		Cl ₂ or Halogens	N/A	0.05
BT-26	DRT Tail Brine Line Vent	VOC	0.1	0.1
		Ammonia	0.01	0.05
		Total HAP	N/A	0.05
		Cl ₂ or Halogens	N/A	0.05
BT-27	Tail Brine Line Vent	VOC	0.1	0.1
		Ammonia	0.01	0.05
		Total HAP	N/A	0.05
		Cl ₂ or Halogens	N/A	0.05
BT-28	Tail Brine Line Vent	VOC	0.1	0.1
		Ammonia	0.01	0.05
		Total HAP	N/A	0.05
		Cl ₂ or Halogens	N/A	0.05
DM-01	Ethylene Glycol Tank	VOC	0.1	0.2
		Total HAP	N/A	0.11
DM-02	Thermal Oxidizer 1.12 MMBtu/hr	PM	0.5	2.3
		PM ₁₀	0.5	2.3
		SO ₂	6.0	26.3

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
		VOC	0.1	0.5
		CO	0.1	0.5
		NO _x	0.4	1.4
		Benzene	0.01	0.01
		Total HAP	N/A	0.01
DM-03	Hydrogen Peroxide Tank I	H ₂ O ₂	N/A	3.55
DM-06	Hydrogen Peroxide Tank II	H ₂ O ₂	N/A	3.55
DM-07	Fugitive Emissions	VOC	4.1	18.0
		H ₂ O ₂	0.1	0.44
		Total HAP	N/A	0.88
MS-01	Extraneous Water System	VOC	6.0	26.3
		Total HAP	N/A	12.52
		Methanol	0.96	4.21
		Methyl Bromide	0.10	0.41
		Methylene Chloride	N/A	1.48
MS-02	Drying Bed	VOC	0.1	0.5
MS-03	French Drain Sump Bubble	VOC	0.3	1.4
		Br ₂	0.10	0.44
		Total HAP	N/A	0.12
		Benzene	0.01	0.01
MS-05	Carpenter's Shop Fugitives	VOC	0.7	2.2
MS-06	South Landfill	PM	2.2	0.8
		PM ₁₀	1.1	0.4
		SO ₂	0.5	0.2
		VOC	7.0	2.4
		Total HAP	N/A	1.7
MS-07	Gasoline Storage Tank	VOC	47.7	1.0
		Total HAP	N/A	0.06
		Benzene	0.25	0.01
MS-08-01	Fire Pump #1 CI Emergency Engine 208 hp	PM	0.5	0.2
		PM ₁₀	0.5	0.2
		SO ₂	0.5	0.2
		VOC	0.6	0.2
		CO	1.4	0.4
		NO _x	6.5	1.7
		Benzene	0.01	0.01
		Total HAP	N/A	0.01
MS-08-02	Fire Pump #2 CI Emergency Engine 208 hp	PM	0.5	0.2
		PM ₁₀	0.5	0.2
		SO ₂	0.5	0.2
		VOC	0.6	0.2

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
		CO	1.4	0.4
		NO _x	6.5	1.7
		Benzene	0.01	0.01
		Total HAP	N/A	0.01
MS-08-03	#1 Water Well (Potable Water Backup) CI Emergency Engine 235 hp	PM	0.6	0.2
		PM ₁₀	0.6	0.2
		SO ₂	0.5	0.2
		VOC	0.6	0.2
		CO	1.6	0.4
		NO _x	7.3	1.9
		Benzene	0.01	0.01
		Total HAP	N/A	0.01
MS-08-04	#4 Outfall Backup SI Emergency Engine 13.4 hp	PM	0.1	0.1
		PM ₁₀	0.1	0.1
		SO ₂	0.1	0.1
		VOC	0.4	0.1
		CO	0.7	0.2
		NO _x	0.8	0.2
		Total HAP	N/A	0.01
		Benzene	0.01	0.01
		Methanol	0.01	0.01
		Methylene Chloride	N/A	0.01
MS-08-05	Phone/Admin Backup #1 SI Emergency Engine 26.8 hp	PM	0.1	0.1
		PM ₁₀	0.1	0.1
		SO ₂	0.1	0.1
		VOC	0.7	0.2
		CO	1.4	0.4
		NO _x	1.6	0.4
		Total HAP	N/A	0.01
		Benzene	0.01	0.01
		Methanol	0.01	0.01
		Methylene Chloride	N/A	0.01
MS-08-06	Security Backup SI Emergency Engine 50.0 hp	PM	0.1	0.1
		PM ₁₀	0.1	0.1
		SO ₂	0.1	0.1
		VOC	0.8	0.2
		CO	1.6	0.4
		NO _x	1.9	0.5
		Total HAP	N/A	0.01
		Benzene	0.01	0.01
		Methanol	0.01	0.01
		Methylene Chloride	N/A	0.01

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
MS-08-07	Fire Pump #3 CI Emergency Engine 375 hp	PM	0.2	0.1
		PM ₁₀	0.2	0.1
		SO ₂	0.7	0.2
		VOC	2.3	0.6
		CO	2.0	0.5
		NO _x	2.3	0.6
		Benzene	0.01	0.01
		Total HAP	N/A	0.01
MS-08-08	Phone/Admin Backup #2 SI Emergency Engine 82 hp	PM	0.1	0.1
		PM ₁₀	0.1	0.1
		SO ₂	0.1	0.1
		VOC	1.9	0.1
		CO	2.8	0.2
		NO _x	1.9	0.1
		Total HAP	N/A	0.01
		Benzene	0.01	0.01
		Methanol	0.01	0.01
MS-08-09	Bromine Caustic Scrubber Pump CI Emergency Engine 56 hp	Methylene Chloride	N/A	0.01
		PM	0.1	0.1
		PM ₁₀	0.1	0.1
		SO ₂	0.2	0.1
		VOC	0.5	0.2
		CO	0.5	0.2
		NO _x	0.5	0.2
		Benzene	0.01	0.01
		Total HAP	N/A	0.01
MS-12	Plantwide Fugitive Refrigerant Emissions	VOC	14.2	9.7
		Non-VOC/Non-HAP Refrigerant	N/A	9.62
MS-13	Abrasive Blasting	PM	54.0	4.3
		PM ₁₀	26.0	2.1
24-01	Wash Column <i>Primary Operating Scenario</i>	VOC	48.5	21.4
		Acetone	N/A	0.1
		HBr	0.1	0.5
		Total HAP	N/A	0.6
		HCl	N/A	0.5
24-01	Wash Column <i>Alternate Operating Scenario</i>	VOC	48.5	0.6
		Acetone	N/A	0.1
		HBr	0.1	0.5
		Total HAP	N/A	0.5
		HCl	N/A	0.5

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
24-02	NC-24 Fugitives	VOC	1.2	5.1
		Acetone	N/A	0.1
		HBr	0.1	0.4
		Total HAP	N/A	0.9
		HCl	N/A	0.2
33-01	BRU Scrubber	PM	1.9	6.5
		PM ₁₀	1.9	6.5
		SO ₂	0.1	0.4
		VOC	5.2	22.5
		CO	1.7	7.3
		NO _x	8.8	38.1
		Br ₂	1.00	4.40
		H ₂ S	1.60	7.00
		HBr	0.10	0.40
		Total HAP	N/A	17.20
		Benzene	1.04	4.54
		HCl	N/A	0.88
		Hydrazine	N/A	0.35
		Methylene Chloride	N/A	0.05
33-02	BRU Fugitives	VOC	1.2	5.2
		Br ₂	0.01	0.03
		HBr	0.02	0.09
		Total HAP	N/A	0.05
		Benzene	0.01	0.01
33-03	Dust Collection Filter (Bulk Bag Feeder System)	PM	0.1	0.5
		PM ₁₀	0.1	0.5
33-04	Hydrazine Hydrate Tote	Total HAP	N/A	0.01
		Hydrazine	N/A	0.01
AL-01	Pilot Plant Vent 1 (X-2643, X-2644)	VOC	2.9	0.1
AL-02	Pilot Plant Vent 2 (X-2651, X-2652)	VOC	0.1	0.4
		Br ₂	2.51	0.07
		HBr	0.04	0.14
AL-03	Pilot Plant Vent 3 (X-2645)	VOC	0.1	0.1
		Hydrazine	0.015	0.001
AL-04	Pilot Plant Vent 4 (X-2647, X-2648)	VOC	0.1	0.1
AL-05	Pilot Plant Vent 5 (X-2683, X-2684)	VOC	11.0	0.1

* Total emission limit for VOC, HBr, acetaldehyde and chloroethane emitted from NC-23 production unit baghouses.

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**HAPs included in the VOC totals. Other HAPs are not included in any other totals unless specifically stated.

***Air Contaminants such as ammonia, acetone, and certain halogenated solvents are not VOCs or HAPs.

¹ PM_{2.5} limits are source specific, if required. Not all sources have PM_{2.5} limits.

SECTION III: PERMIT HISTORY

The following timetable summarizes the Department's permitting actions related to this facility from 1973 until it received its initial Title V permit.

Date	Permit Number	Purpose (summary)
3/10/00	762-AOP-R0	First operating air permit; incorporated limits and provisions for all minor modifications initiated by the facility from 1992 through August, 1999
06/28/73	164-A	Issued for Sulfinol Gas Sweetening unit.
12/04/74	273-A	Issued for Tail Gas Incinerator.
03/26/76	324-A	Issued for CBN production.
09/24/76	363-A	Issued for NC-9 Alkyl Amine Production plant.
09/23/77	424-A	Issued for production of Pyrochek (MG-3).
09/23/77	425-A	Issued for DECTP plant.
11/22/78	273-AR-1	Modification issued for addition of MDEA unit.
03/23/79	425-AR-1	Modification issued for production of DMCTP.
05/30/79	552-A	Issued for Calcium and Zinc Bromide production.
11/26/79	552-AR-1	Modification issued for Calcium Bromide.
07/24/81	353-AI	Issued for incineration of office waste.
08/11/81	708-A	Issued for NC-14 process.
04/05/82	424-AR-1	Issued for NC-12 process.
07/22/83	708-AR-1	Modification issued for Sodium Bromide production.
02/08/84	728-A	Issued for Bromine Chloride production.
02/23/86	762-A	Issued to Ethyl as the original consolidated air permit for the site.
05/26/87	832-A	Issued for NC-16 process.
09/15/87	846-A	Issued for NC-15 process.
03/17/88	762-AR-1	Modification issued for the DBDPO process.
11/01/88	762-AR-2	Modification issued for an expansion of the TBBPA (NC-14) process.
11/09/88	832-AR-1	Modification and expansion to the existing NC-16 process.
01/11/89	922-A	Issued to allow construction of the Alkyl Bromides process.
02/13/89	933-A	Issued to allow construction of the BRU. The unit later was brought under RCRA BIF regulations.
11/15/89	832-AR-2	Issued for the NC-17 process.
04/30/90	398-IR-1	Issued for the Air Curtain Incinerator.
05/10/91	922-AR-1	Modification issued for the Alkyl Bromides process. Consolidated 913-A and 922-A.
11/18/91	762-AR-3	Consolidated all existing air permits for the facility.
11/04/92	762-AR-4	Modification issued for NC-21 construction.
02/19/93	762-AR-5	Modification issued for NC-14.
09/10/93	762-AR-6	Modification issued for NC-16, and allowed construction of NC-17, NC-18.
12/08/93	762-AR-7	Issued to allow Feed Brine Tank construction.
04/08/94	762-AR-8	Issued to allow DECTP and VGO construction.
01/26/96	762-AR-9	Issued to resolve 762-AR-8 appeal.
3/10/00	762-AOP-R0	First operating air permit; incorporated limits and provisions for all minor modifications initiated by the facility from 1992 through August, 1999

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The following table summarizes the changes made in Permit No. 762-AOP-R0.

Change	Type of change	Application date
NC-14, 95ND141/ Stabrom 909 - New scenario increases bromine and chlorine each by 0.88 tons per year.	Minor modification	5/1/00
Alkyl Amines Area, Alcohol addition system - A-3 insignificant storage tank and various instrumentation were added to insignificant list.	Administrative Amendment (Insignificant source)	5/25/00
NC-12, New heated air blower (SN-DB-04) & Backup scrubber (SN-DB-17) are permitted at Decabrom unit. PM/PM ₁₀ increases by 5.3 tpy each. Br ₂ +HBr emissions from SN DB-04 increased by 2.4 tpy, and new HBr emissions from SN-DB-17 were 0.44 tpy.	Minor modification	6/9/00
NC-17, Specific Condition 151 error - A source was referenced in error.	Administrative Amendment	6/15/00
NC-17, Specific Condition 152 removal - Requirement was removed to maintain minimum acid strength for SO _x scrubber SN-16-13. This requirement didn't make sense because lower acid strength would only allow better removal. A scrubber flow requirements are already in place as a compliance mechanism.	Administrative Amendment	6/15/00
Boilers, Specific Condition 170 - Testing requirement is removed PM/PM ₁₀ testing at #1 and #2 Boilers (SN-BH-01 & SN-BH-02) Testing was determined to be unnecessary due to reliability of the factors used.	Modification	7/13/00
DECTP, higher purity and emissions reroute - Purification (SN-DE-23) emissions are routed to the VGO (SN-DE-21). VGO HCl emissions increase by 25 tpy. This was determined to not be a MACT issue because no affected process units are constructed or reconstructed as part of the modification. Purification had the capacity for the higher purity product beforehand. Only the emissions vent header will be constructed which allows the emissions to be routed to the VGO. Other emissions from these two sources change slightly.	Modification	8/11/00
NC-23, emissions updates - SN-23-06, 07, and 08 emission bubble is changed to allow higher VOC and HBr emissions. Stack testing showed some occurrences of exceedances during multiple test runs. VOC is increased by 1.8 tpy and HBr is increased by 0.5 tpy. SN-23-03 emissions are lowered to reflect test data.	Modification	8/29/00
NC-12, increase Decabrom Product Dryer firing rate (SN-DB-04), increase DPO annual dry rate at storage tank (SN-DB-07), allow Decabrom usage of TBBPA packaging equipment - At SN-DB-04 combustion emissions increase slightly. At the same source PM/PM ₁₀ emissions increase by 2.1 tpy and VOC is increased by 2.1 tpy. At SN-DB-07, HCl emissions increase by 0.6 tpy.	Minor modification	10/4/00

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Change	Type of change	Application date
NC-17, New xylene formulation - At SN-16-18, 21, 22, and 23 xylene emissions are changed to include the possibility of mixed xylene or ethylbenzene.	Minor modification	11/17/00
NC-14, Bleach production - This is an additional change related to the 5/1/00 minor mod. Bleach production is permitted at the NC-14 reactor under existing permit limits.	Minor modification	12/6/00
Clear Completion Fluids - VOC emissions at SN-CB-02 and 16 are reduced to reflect test data. Annual SN-CB-04 VOC emissions were reduced to reflect updated emission calculation methodology and annual methanol throughput limit.	Administrative amendment	1/9/01
NC-14, Tank (SN-TB-26) - This tank is allowed ethylene glycol storage use. During these periods emissions are insignificant.	Administrative amendment	2/21/01
NC-23, Solvent tote bin (SN-23-14) - VOC emissions increase by 1.53 tpy.	Minor modification	3/15/01
Bromine area -Caustic drum (SN-BR-15) and generator usage (SN-MS-08) - Caustic Drum is allowed as an alternate control for periods when Bromine Area Scrubber is down. Additional Cl ₂ and Br ₂ emissions are 0.1 tpy each. Combustion emissions increase due to generator allowance with the greatest being NO _x and CO at 19.0 tpy each.	Minor modification	5/15/01
NC-14, NaBr production - This scenario is permits NaBr production increasing Br ₂ and HBr emissions by 0.44 tpy each at SN-TB-03.	Minor modification	6/11/01
NC-15, update bromine rate at SN-15-02 and alternative compliance with SN-15-02 and SN-15-12 bromine rates - HBr and Br ₂ rates at SN-15-02 are increases by 0.3 tpy each.	Minor modification	7/24/01
NC-23, Phenol Storage Tank (SN-23-15) - Emissions are routed to existing Vent Absorber (SN-23-05). VOC and phenol emissions at SN-23-05 increase by 0.4 tpy.	Minor modification	12/13/01
Bleach storage tank - a 6,000 gallon bleach storage tank was listed as an insignificant activity. No regulated emissions result from this activity.	Administrative amendment	1/9/02
DECTP, Vent header - SN-DE-01, 02, 03, 09, and 25 combine to SN-DE-28. No changes result only emissions are bubbled into new source (SN-DE-28).	Minor modification	2/14/02
NC-21, HCl tank and gasoline through put - A new 10,000 gallon HCl tank is permitted with emissions routed to Incinerator (SN-21-01). Increased throughput at Gasoline Storage Tank (SN-MS-07) is permitted. Extra combustion emissions result at SN-21-01. VOC increases 0.7 tpy at SN-MS-07 along with various HAPs.	Minor modification	2/14/02
NC-14, Ethyl bromide production scenario - EtBr scenario is permitted under existing MeBr emission limits with some exceptions. Exceptions result in a VOC increase of 1.2 tpy and HBr increase of 0.1 tpy.	Minor modification	4/19/02

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Change	Type of change	Application date
NC-17, Phthalic Anhydride (PA) Tank (SN-16-31) - PA tank is no longer vented to Scrubber (SN-16-02). PA emissions removed from the scrubber vent. PA and VOC emissions from SN-16-31 are listed at 0.8 tpy each resulting in a 0.4 tpy increase of the PA emissions.	Minor Modification	5/6/02
NC-23, Caustic Addition - The permittee is allowed to add caustic to recirculating solvent for corrosion prevention. This project allows 19.2 tpy of additional VOC. This project may or may not be related to other projects at NC-23 since the unit's construction in 1998 which have allowed total VOC increases of 39.3 tpy. Additional increases at this unit may trigger PSD review by causing total VOC increases exceeding 40 tpy depending on the relationship between past and future projects. Bromoform is increased by 1.9 tpy and acetaldehyde ins increased by 0.9 tpy.	Minor Modification	5/7/02
Boilers, H2S Monitoring Protocol - Specific Condition 169 regarding SN-BH-01 and 02 (Boilers) is adjusted to allow a decrease in monitoring frequency from every 15 minutes to every 6 hours. This is deemed appropriate after reviewing historical data from the past four quarterly reports of 15 minute data. The reports show low variance in emission rates and indicate little chance of exceeding permitted rates.	Modification	6/19/02
NC-17, Sulfuric Acid Storage Tank - T-9315 - This tank is now vented to the atmosphere and listed as an insignificant source (SN-16-32).	Administrative amendment	7/3/02
Molten Sulfur Tank - T9369	Administrative amendment	1/21/03
Brine Treatment Area - SN-BT-10 (T-292) is removed from Insignificant Activities list and listed as a permitted source to allow heat treatment of the tank contents.	Minor Modification	1/21/03
Alkyl Bromides Area - SN-AB-15 - Storage tank (T-83403B) is replaced with a new 11,130 gallon tank making it subject to NSPS Subpart Kb. Emissions are not affected as they remain routed to SN-AB-15.	Minor Modification	1/30/03
NC-12 Process Area - SN-DB-01 is changed out with a similar scrubber. No changes to emission rates or compliance mechanisms.	Minor Modification	2/21/03
Insignificant Activities List - Hot Oil Expansion Tank (T-9354) added for use at NC-16 & 17; Six Emergency use generators and fire pumps added; Hot oil Surge Tank (D-3490) added for use at NC-16 & 17; Molten Sulfur Pit and Loadout added for use at the Sulfur recovery area.	Administrative amendment	3/17/03
Sulfur Recovery Area (Gas Sweetening) - Sulfinol Storage Tank (SN-SL-02) is added. Emissions of VOC are increased by 0.6 tpy.	Minor Modification	3/17/03
NC-12 & NC-15 - Product Packaging is automated. Higher air flows at SN-15-16 increase PM/PM ₁₀ emissions by 2.1 tons per year.	Minor Modification	4/14/03

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Change	Type of change	Application date
Backup Power Generators - A change is made to the original minor modification dated 5/15/01. A larger total capacity is allowed while firing of diesel fuel affecting pound per hour emission rates. Limits remain in effect for annual operation that limits generator usage below PSD thresholds. Annual emissions are unaffected.	Minor Modification	4/24/03
An alternative chemical reaction was identified and used to manufacture products in the clear completion fluids process. The alternative reaction replaces methanol with ammonia hydroxide resulting in ammonia emissions of 2.0 lb/hr and 2.2 tpy.	Minor Modification	02/18/2004
Albemarle has the option of installing a new distillation column to be used to recover benzene from the co-product HCl (HCl Loading Operation, SN-21-04) for reuse in the NC-21 process unit. Permitted emissions will increase by 0.8 lb/hr and 0.2 tpy, Benzene and VOC by 0.3 lb/hr and 0.1 tpy, HCl.	Minor Modification	07/13/04

Permit #762-AOP-R5 was issued on June 30, 2005. This was the first renewal issued to Albemarle under the Title V program. The following table lists the changes requested in the renewal application:

Process Name	Modification
Br ₂ Production	1. Revised description for SN-BR-14 2. Revised description for SN-BR-13 (Insignificant Activity) 3. Added SN-ED-04 to Insignificant Activity List 4. Revised emission rates and description for SN-BR-05 (Insignificant Activity) 5. Added Hot Water Tank, B-3010 to Insignificant Activity List 6. Revised the equipment description in Specific Condition #9 7. Revised the annual Br₂ emission limit for SN-BR-09 from 0.06 tpy to 0.09 tpy
Sulfur Production	1. Deleted Specific Condition #20a, Sulfinol Storage Tank no longer subject to NSPS Subpart Kb. 2. Added SN-SL-03 (Sulfinol Storage Sump), SN-SL-04 (MDEA Storage Tank), and SN-SR-03 (Molten Sulfur Pit and Loadout) to Insignificant Activity List 3. Added 3-hour SO₂ limit for Emergency Flaring of Brinefield Gas at SN-SL-01 to Specific Conditions #17 and #18
Clear Completion Fluids	1. Added source numbers to the Ammonium Hydroxide (SN-CB-19) and the Formic Acid Bins (SN-CB-20) insignificant activities. 2. Removed Methanol Storage Tank (SN-CB-04) emission limits from Specific Condition #29 3. Rounded up VOC emissions limits in Specific Conditions #21 and #22 for consistency 4. Revised the HBr and Br₂ emission limits for Alternate Operating Scenario for R-21 Vent Scrubber (SN-CB02/16) to 0.22 tpy and 0.44 tpy, respectively

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Process Name	Modification
DECTP Production	- Deleted Specific Condition #47 because the tanks are no longer subject to NSPS Subpart Kb - For SN-DE-21, revised the annual emission limit for SO₂ to 30.7 tpy and add emission limits for Toluene (0.40 lb/hr and 1.76 tpy) and Ethyl Chloride (0.20 lb/hr and 0.88 tpy) - Added DECTP process sewers to the Insignificant Activity List - Revised the CO emission limits for SN-DE-17 (0.04 lb/hr and 0.18 tpy) and SN-DE-18 (0.07 lb/hr and 0.31 tpy)
Alkyl Amines Production	- Deleted Specific Condition #59 because tanks are no longer subject to NSPS Subpart Kb and SN-AD-35 is not a storage vessel. - Added ethylene glycol emission limits (0.06 lb/hr and 0.30 tpy) to SN-AD-36 - Revised emission limits for SN-AD-26 based on updated AP-42 natural gas combustion limits - Revised the HBr and Br₂ emission limits for SN-AD-05 - Changed the source designation for SN-AD-37 to SN-AD-38 - Added Liquid Hydrogen Pressurized Tank (SN-AD-31) to Insignificant Activity List
Alkyl Bromides Production	- Deleted Specific Conditions #79 and #257 because tanks are no longer subject to NSPS Subpart Kb - Added SN-AB-17 and SN-AB-18 Insignificant Activities List
NC-12 Production	Deleted Specific Condition #85 because tank is no longer subject to NSPS Subpart Kb
NC-14 Processes	- Deleted Specific Conditions #91 through #104 because TBBPA production has been discontinued - Revised emission limit for VOC, Methanol, Methyl bromide to 0.93 lb/hr and 4.07 tpy, each - Removed Brine Stripper Column Vent (SN-TB-20) from Insignificant Activity List because source has been removed from service - Revised source description for 6,000 gallon Bleach Storage Tank (Insignificant Activity)
NC-15 Production	- Removed Toluene emission limits from SN-15-15 because process emitting Toluene has been discontinued - Revised CO emission rates for SN-15-12 to 0.15 lb/hr and 0.66 tpy - Revised VOC emission rates for SN-15-13 to 0.07 lb/hr and 0.31 tpy - Revised the PM/PM₁₀ emission rates for SN-15-16 to 1.20 lb/hr and 5.30 tpy
NC-17 Production	- Added Sulfuric Acid Storage Tank, T-9315 (SN-16-34) to Insignificant Activity List - Revised SO₂ emission limits for SN-16-10 to 0.10 lb/hr and 0.44 tpy - Revised PM/PM₁₀ emission limits for SN-16-11 to 0.10 lb/hr and 0.44 tpy - Revised CO (0.86 lb/hr and 3.77 tpy) and PM/PM₁₀ (0.05 lb/hr and 0.22 tpy) emission limits for SN-16-18 - Revised PM/PM₁₀ emission limits for SN-16-20 to 0.04 lb/hr and 0.18 tpy - Removed Phthalic Anhydride emission limits from SN-16-02 because the process generating the emissions has been discontinued
NC-21 Production	Added statement to Specific Condition #177 that a formal RATA is not required for the continuous parametric monitoring system on SN-21-01.
Boilers	- Revised PM, PM₁₀, and VOC emission rates based on updated AP-42 natural gas combustion factors - Added Boiler Water Treatment Chemicals Storage Tank to Insignificant Activity List

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Process Name	Modification
Brine Management	1. Updated the process description to reflect the construction of the tail brine tank system has been completed and operation approved. 2. Revised hourly VOC emission limit for SN-BT-17 to 16.40 based on updated estimate 3. Added existing Line Vents SN-BT-25 through SN-BT-28 4. Assigned source designation SN-BT-29 to the alternate operating scenario for Oil Separator Tank, T-292 and restored SN-BT-10 to Insignificant Activity List
DMTDA Production	1. Added Bleach Storage Tank (SN-DM-08) to Insignificant Activity List 2. Revised CO emission rates for SN-DM-02 to 0.10 lb/hr to 0.44 tpy
Maintenance and Support Operations	1. Revised insignificant activity Gasoline Storage Tank (SN-MS-10) source description to a capacity of 2,000 gallon 2. Revised VOC and HAP emission limits for the Extraneous Water Systems (SN-MS-01) 3. Revised SN-MS-03 source description to French Drain Sump Bubble 4. Revised emission rates for Cooling Towers (Insignificant Activity, SN-MS-11) 5. Included all fugitive refrigerant annual emissions under one plantwide bubble (Specific Condition #219) 6. Added the following sources to the Insignificant Activity List: Drinking Water Treatment and Distribution, Quality Control Laboratory, Pave Plant Roads and Parking Areas, Unpaved Plant Roads, Building Air Conditioning Systems, Filter Aid Tanks T-1306 and T-1307, Sulfuric Acid Tank 7. Added Plantwide Condition 28 requiring records demonstrating that all reciprocating internal combustion engines (RICE) are exempt from 40 CFR Part 63, Subpart ZZZZ.

In addition to the renewal application Albemarle submitted a request for a minor modification involving two flame retardant process units, NC-14 production unit and NC-22 production unit, permitted at the facility. The NC-22 production unit was never built, and portions of NC-14 have not operated for a few years. Albemarle proposed to use existing equipment at NC-14 along with some new equipment to produce NC-22 as an alternate operating scenario. Also, Albemarle requested the TBBPA alternate operating scenario for NC-14 be removed from the permit.

The new equipment installed included two carbon bed solvent recovery units (SN-TB-41), distillation columns, as well as several pumps, heat exchangers, other small process vessels, and new refrigeration unit. Five existing tanks that were purchased but never installed for the NC-22 process unit were taken from storage and placed into operation. All non-fugitive emissions from the new equipment are routed to the carbon bed solvent recovery units or the caustic scrubber (SN-TB-14). Due to the requested modifications, permitted PM/PM₁₀ annual emissions decreased by 9.5 tpy, and permitted VOC and HAP annual emissions increased by 1.5 tpy and 0.63 tpy, respectively.

Permit #762-AOP-R6 was issued on September 7, 2005. Albemarle submitted requests for four separate modifications.

- The first modification addressed an increase in production at the NC-15 and NC-21 process units. Albemarle requested to install additional process equipment (several pumps, heat

exchangers, condensers, and a process tank) at the NC-15 and NC-21 production areas.

None of the new equipment vents directly to the atmosphere, and it is controlled by either the Emission Control Vent Gas Incinerator (SN-21-01) or the NC-15 Area Scrubber (SN-15-12).

No new point sources were associated with this modification, but the throughput to SN-21-01 and NC-15-12 increased by approximately 13.5 %.

- The second modification addressed installation of an alternate control device and an alternate operating scenario at SN-TB-41. Albemarle proposed to use an alternate, but equivalent, control device for the Carbon Bed/Tote Solvent Recovery Units (SN-TB-41). The alternate control device is a carbon adsorption system contained in portable totes (a.k.a. Carbon Totes). Unlike the existing carbon beds which will remain in a fixed position, the carbon totes are shipped off site for regeneration. With the appropriate recordkeeping, Albemarle may switch between the fixed carbon beds and the carbon tote adsorption systems.

Albemarle also proposed an alternate operating scenario for SN-TB-41. The alternate scenario addressed NC-22 production when only solvent storage and solvent drying is being performed. VOC vapors sent to the adsorption system while operating under the alternate scenario are less than 48 lb/day in comparison to 993 lbs/day during normal operation.

- The third modification addresses a request to use an alternate brominating raw material (ABRM1) for the NC-23 production unit. The use of ABRM1 resulted in a chloroethane production rate that is 20 percent of the current ethyl bromide production rate. No additional VOCs are emitted from the use of ABRM1. Therefore, permitted VOC emission limits do not need to be increased.
- The fourth modification addressed a request to increase the number of possible products at the NC-12 production unit. Other products can be produced by changing the raw material in the reaction. No additional equipment is required, and downstream collection and purification processes do not need to be modified because the additional products are similar to the existing.
- Due to the requested modifications, permitted emission limits increased for VOC and benzene by 0.4 tpy, CO by 5.3 tpy, HCl by 0.23 tpy, PM/PM₁₀ by 0.9 tpy, and chloroethane by 1.81 tpy.

Permit #762-AOP-R7 was issued on April 12, 2006. Albemarle proposed production of a product designated as NC-24. The NC-24 production unit consists of pre-existing and proposed equipment. The pre-existing equipment is used as part of an alternate operating scenario for the production of NC-24, includes the Emergency Flare (SN-AD-26), the Wash Water Tank (SN-CB-10), and the Refrigerated Vent Condensers at (SN-TB-25). The equipment installed included a Wash Column (SN-24-01) as well as a number of distillation columns, flash drums, pumps, and heat exchangers which do not vent directly to the atmosphere. The estimated emission rates for the requested modification were 18.8 tpy VOC, 0.7 tpy HCl, 1.0 tpy HBr, 0.3 tpy Acetone, 0.2 tpy 1,2 Epoxybutane, 0.5 tpy Ethylene Glycol, 0.3 tpy CO, 0.1 tpy SO₂, 0.1 tpy NO_x, and 0.1 tpy PM/PM₁₀.

Permit No. 762-AOP-R8 was issued on August 10, 2006. Four separate minor modification applications were submitted. The following changes were requested:

- Albemarle proposed a permit modification to increase the throughput for DPE Byproduct/Heavy Organic Storage (SN-15-18) and the maximum allowable DPE (1,2-Diphenylethane) in the byproduct stream. Albemarle proposed a revised method of calculating emissions from SN-15-18. The total VOC emission associated with this modification is 0.1 tpy of VOC.
- Albemarle proposed a permit modification to allow the use of DECTP Ethanol Storage Tank (SN-DE-01) and NC-14 Unit Feed Tank (SN-TB-11) under an alternate operating scenario as additional ADMA brine storage tanks. Permitted VOC emissions increased by 2.9 tpy.
- Albemarle requested permission to install an additional baghouse (SN-DB-18). The new baghouse will be located downstream of the product dryer (SN-DB-04), and it will be used to separate conveyance air from dried product. Permitted PM/PM₁₀ emission limits increased by 0.3 lb/hr and 1.4 tpy.
- Albemarle proposed an alternate operating scenario when the NC-24 reactor loses reaction. When this happens, the raw material vapors (propylene and hydrogen bromide) must be vented before re-initiating the reaction. The vapors are vented to the Wash Column (SN-24-01), which absorbs the hydrogen bromide just as in the primary operating scenario. Propylene will pass through the wash column unaffected.
- The process will be controlled such that the flaring (SN-AD-26) and depressurization of the reactor will not occur at the same time. The pressure control valve on the NC-24 reactor will be designed to allow no more than 48.5 lb/hr of VOC which is the same rate VOC would otherwise be routed to the flare in the primary operating scenario. No HBr beyond what is already permitted will be emitted during the alternate operating scenario. Permitted VOC emission limits increased by 0.60 tpy.

Permit No. 762-AOP-R9 was issued on January 1, 2007. Three separate minor modifications applications were submitted. The following changes were requested:

Albemarle proposed a permit modification to increase NC-15 production with a portion of the additional NC-15 production under an alternate operating scenario which uses NC-12 equipment, to install at the NC-12 process unit a 19,800 gallon Diphenyl Oxide storage tank, and to install a caustic scrubber. The caustic scrubber (SN-DB-19) was installed immediately after the product dry filter (SN-DB-04) to provide additional PM/PM₁₀ and Br₂ + HBr control while operating in the alternate scenario. Permitted VOC limits increased by 1.10 tpy, while permitted PM/PM₁₀ and Br₂ + HBr limits decreased by 2.77 tpy and 1.01 tpy, respectively.

Albemarle requested the limits for the ADMA Flare (SN-AD-26) be revised while operating as an emergency control device for the alkyl amines process. The purpose of increasing the

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emission limits is to allow and to account for non-emergency operation of the flare such as cleaning and/or maintenance. Permitted PM/PM₁₀, VOC, CO limits increase by 0.03 tpy, 0.44 tpy, and 0.15 tpy, and permitted SO₂ and NO_x limits decreased by 0.05 tpy and 0.10 tpy.

Albemarle proposed a permit modification to allow an alternate operating scenario (Scenario B) for NC-22 production and to increase the maximum number of batches to 1,925 batches rolling 12-month period. The existing process (hereafter referred to as Operating Scenario A) has two VOC control scenarios which will also be utilized to control VOC emissions from Scenario B. The new scenario utilizes a different processing method to isolate the final product. In Scenario B, the product is not centrifuged; therefore the centrate hold-up drum (SN-TB-43) is not used to store centrate. Instead, process water is stored in the hold-up drum, and the drum is an insignificant activity under Scenario B. Also, Scenario B results in the product being formed into pellets rather than powder. The pellets do not require the product baghouse (SN-TB-04) to be collected. Since, Scenario B is the worst case for VOC and HCl the permitted emission limits will increase by 2.72 tpy VOC and 0.05 tpy HCl.

Permit No. 762-AOP-R10 was issued on April 13, 2007. Albemarle requested the following changes:

- Added an emission source (SN-DB-20) for drum D-2515 at the NC-12 Unit. During the NC-15 Production Alternate Operating Scenario the drum stores diphenyl ethane (DPE). Potential emissions from the drum increased by 0.32 lb/hr and 1.41 tpy of VOC;
- Installed and operated a temporary (rental) scrubber (SN-DB-19T) for the NC-12 Unit for operation under the NC-15 Production Alternate Operating Scenario. The temporary scrubber enabled Albemarle to begin NC-15 production before the permanent scrubber (SN-DB-19) was completed. The control efficiency for Br₂ + HBr is 40% which was a higher efficiency than the permanent scrubber was expected to achieve. The control efficiency for PM/PM₁₀ for SN-DB-19T was expected to be less than expected for the permanent scrubber. Albemarle proposed limiting operation of the scrubber to 1,080 hours per consecutive 12-month period. Permitted emissions increased by 2.00 tpy PM/PM₁₀;
- Revised Plantwide Condition #28 to address RICE units which are not exempt from Subpart ZZZZ but the only applicable requirement is the initial notification; and
- Installed a heat transfer fluid system expansion tank (SN-TB-44), an insignificant activity.

Permit No. 762-AOP-R11 was issued on November 1, 2007. Albemarle requested three separate minor modifications:

- Use an existing 16,000 gallon tank (SN-AD-40) to store mixed ADMA final products. Permitted VOC emissions increased by 1.14 tpy.
- Increased production of NC-15 product at both the NC-12 and NC-15 production units, permitted use of the NC-12 Product Dryer Scrubber (SN-DB-19) in all NC-12 operating

scenarios, and removed the NC-12 Temporary Product Dryer Scrubber (SN-DB-19T) since the permanent scrubber is in operation. Permitted PM/PM₁₀ emissions increased by 0.77 lb/hr and 3.38 tpy.

- Revised the assignment of VOC and HAP emissions from the NC-23 production unit and removed the Solvent Tote Bin (SN-23-14).

Albemarle determined that approximately 33% less chloroethane, a HAP that can be generated from the raw material, enters the system of baghouses controlling the handling of NC-23 product. The difference is reassigned to the Raw Material Scrubber (SN-23-03) and the Vent Absorber (SN-23-05). Albemarle did not propose to increase the total chloroethane emission limit. Acetaldehyde, bromoform, and phenol emission limits for SN-23-05 decreased.

Permit No. 762-AOP-R12 was issued on March 12, 2008. Albemarle submitted four separate applications:

- Albemarle proposed two operating scenarios which permit the testing of three identified sources where the sources are to be operated under conditions other than normal operation for the purpose of conducting the tests. The first operating scenario is for demonstrating that Vent Gas Oxidizer (SN-16-18) and the Vent Gas Incinerator (SN-21-01) meet the HAP reduction required by 40 CFR Part 63, Subpart FFFF, the MON MACT. The second operating scenario permits operating and testing of the NC-15 Area Scrubber (SN-15-12) while the scrubber is utilizing fresh water in the top portion of the column rather than recirculating a portion of the spent scrubbing solution. Permitted annual emission limits were not increased.
- Albemarle proposed to change the supply of HCl for SN-BR-08 (Recycle HCl Storage Tank) and revise the HAP speciation for SN-MS-07 (Gasoline Storage Tank).

The supply of HCl could potentially contain up to 30 ppm benzene which resulted in potential VOC and benzene emissions of 0.28 lb/hr and 1.21 tpy. Potential HCl emissions from SN-BR-08 remained unchanged. The HAP speciation for emissions from the gasoline storage tank was revised which resulted in lower hourly and annual HAP emission limits.

- Albemarle returned to service two 4,000 gallon existing storage tanks (SN-AD-41). Permitted emission limits are based on maximum pump rate and the worst-case ADMA product. Permitted VOC emissions increased by 2.28 tpy.
- NC-21 process was expanded through various equipment additions/upgrades (e.g., piping, additional instrumentation, meters, and controls) and process changes (e.g., increasing reboiler capacity, and changing service of existing equipment). The permitted VOC, Benzene, and Ethylene Dichloride emissions increased by 1.88 tpy, 1.88 tpy, and 0.10 tpy, respectively.

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Permit No. 762-AOP-R13 was issued on July 17, 2008. The modification incorporated all applicable requirements of 40 CFR Part 63, Subpart FFFF – *National Emission Standards for Hazardous Air Pollutants Miscellaneous Organic Chemical Manufacturing and Miscellaneous Coating Manufacturing*. The short term emission limits under the MON required testing scenarios were revised. Due to the modification permitted HCl emissions decreased by 1.1 tpy.

Permit No. 762-AOP-R14 was issued on March 19, 2009. The permit was modified to increase the production at the NC-24 unit to 2,800,000 gallons of NC-24 product through a combination of installing new equipment (i.e., heat exchangers, drums, expansion pots, pumps, compressors, and associated piping) and addressing process efficiency (i.e., raw material supply interruptions, reactor heat removal rates, washed reaction crude drying capacity, etc.). Permitted VOC and HCl emissions increased by 10.7 tpy and 0.10 tpy, respectively.

Permit No. 762-AOP-R15 was issued on August 25, 2009. Albemarle requested permission to install central vacuum systems at NC-12 (SN-DB-22) and NC-15 (SN-15-19) to collect off-spec products. Permitted PM/PM₁₀ increased by 0.4 tpy.

Permit No. 762-AOP-R16 was issued on August 25, 2009. Albemarle modified the NC-23 production unit in order to produce Methyl Bromide. Albemarle also requested the NC-14 Methyl Bromide production scenario be removed. The increase in emissions due to the modification is 21.01 tpy VOC, 0.10 tpy sulfuric acid, 0.02 tpy ethylene glycol, 9.83 tpy methanol, and 8.25 tpy methyl bromide.

Permit No. 762-AOP-R17 was issued on October 13, 2011. The Title V permit was renewed with modifications.

Permit No. 762-AOP-R18 was issued on March 22, 2012 to modify NC-21 to allow the two reactors to operate simultaneously and in series. The HCl absorption system was modified for both batch and continuous operation. Those modifications allowed the annual production rate to increase to 5,475 batches. At the NC-23 unit an orifice in the circulation line of the tank that is routed to the scrubber (SN-23-03) was replaced. The production at the NC-24 unit was increased to 9,452 metric tons and included installation of two tanks and a loadout. Permitted VOC emissions increased by 15.5 tpy.

Permit No. 762-AOP-R19 was issued on July 13, 2012. A bromine storage tank, substrate storage, substrate dissolution, and recycle solvent purification equipment, and a hydrazine hydrate storage tote were installed and accompanied by process and piping changes at NC-22. The hydrazine hydrate storage was designated SN-TB-45. Production was increased to 3,137 batches per year. Operating scenarios were replaced with limits based on the worst case emission rates and conditions that cover all three former scenarios. A bromine recovery unit (SN-33-01 and SN-33-02) was also installed to recover bromine from the processes at the facility. The emission increase associated with these modifications were 6.5 tpy PM₁₀, 0.4 tpy SO₂, 26.93 tpy VOC, 7.3 tpy CO, 38.1 tpy NO_x, 4.97 tpy Br₂, and less than 0.01 tpy hydrazine

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Permit No. 762-AOP-R20 was issued on October 11, 2012. The NC-12 and NC-22 production units were modified and emission estimates at those units were revised. Overall, permitted emissions increased by 4.14 tpy VOC, 0.44 tpy HCl, 0.30 tpy Br₂, and 0.63 tpy HBr.

Permit No. 762-AOP-R21 was issued on December 23, 2013. Additional feed streams were permitted for the bromine recovery unit (SN-33-01), the throughput limit for the DPE Byproduct/Heavy Organics Storage was increased. A truck loading point (SN-15-20) and an emergency generator was added to the permit. The requirements of Subpart ZZZZ, Subpart IIII, and Subpart JJJJ for the stationary engines at the facility were incorporated. Overall, permitted emissions increased by less than 0.50 tpy HAPs and decreased by 0.30 tpy PM/PM₁₀, 0.73 tpy SO₂, 10.7 tpy VOC, 16.32 tpy CO, and 9.93 tpy NO_x.

Permit No. 762-AOP-R22 was issued on July 30, 2014. The cooling water usage limit at the bromine recovery unit (SN-33-01) was increased, an 82 hp SI Emergency engine (SN-MS-08-08) was permitted, and the NC-22 production unit was modified to allow re-dissolving and re-work of off-spec product. Overall permitted emissions increased by 0.39 tpy PM/PM₁₀, 0.09 tpy SO₂, and 0.02 NO_x and decreased by 0.81 tpy VOC.

Permit No. 762-AOP-R23 was issued on March 27, 2015. A 10,000 gallon anhydrous hydrogen bromide tank was installed and the existing anhydrous hydrogen bromide storage tank was returned to dedicated non-sales storage service. Overall, permitted emissions increased by 6.96 tpy of hydrogen bromide.

Permit No. 762-AOP-R24 was issued on April 8, 2014. Albemarle was authorized to produce new products at the Clear Completion Fluid (CCF) production area and replaced/upgraded the bag filters at the raw material baghouse (SN-CB-18). Overall, permitted emissions increased by 0.28 tpy HAP and 0.04 tpy HBr.

Permit No. 762-AOP-R25 was issued on October 17, 2016. Albemarle submitted an application to renew the Title V permit with modifications. The permit modifications included incorporating applicable Boiler MACT requirements, revising the insignificant activities table due to sources (SN-AD-16 and SN-16-30) affected by the Boiler MACT, revising emission limits due to additional stack test data and/or fuel composition (AD-05, AD-35, 15-12, DM-02, and 33-01), revising stack testing schedules for certain sources, updating process descriptions, and correcting administrative and technical errors (pollutants inadvertently excluded from previous permits). Overall, permitted emissions increased by 4.9 tpy PM, 5.0 tpy PM₁₀, 2.3 tpy SO₂, 2.5 tpy VOC, and decreased by 12.2 tpy CO, and 3.2 tpy NO_x.

The applicable Boiler MACT requirements were incorporated with this permit renewal. Refer to Plantwide Condition #23. Albemarle identified the sources listed in the following table for Boiler MACT applicability.

Source No.	Boiler MACT Subcategory	Heat Input Capacity (MMBtu/hr)
SN-AD-6	63.7499(1) Units designed to burn gas 1 fuels	3.55
SN-15-14A	63.7499(1) Units designed to burn gas 1 fuels	2.15
SN-15-14B	63.7499(1) Units designed to burn gas 1 fuels	2.15
SN-16-20	63.7499(1) Units designed to burn gas 1 fuels	4.93
SN-16-30	63.7499(1) Units designed to burn gas 1 fuels	1.2
SN-BH-01	63.7499(1) Units designed to burn gas 1 fuels	340
SN-BH-02	63.7499(1) Units designed to burn gas 1 fuels	340

Permit No. 762-AOP-R26 was issued on October 30, 2017. Albemarle submitted a minor mod application to:

- Increase Clear Completion Fluids (CCF) ZnBr₂ production rates which resulted in additional methanol emissions from the CCF Reactor (SN-CB-23).
- Furthermore, the facility proposed to bypass the control device (SN-CB-16) after the reactor vapor temperature reaches 245 °F. Emissions will be routed to scrubber SN-CB-16 at all temperatures below 245 °F; once a temperature of 245 °F has been achieved the emissions will bypass the scrubber (SN-CB-16) and be vented by an automated valve to the atmosphere via the CCF Reactor Vent (SN-CB-23). The number of batches under this scenario is limited to 185 batches per year.
- Removed the Alternate Operating Scenario (Current Specific Conditions #28 through #35) from the permit.
- Remove R-21 Vent Scrubber (South) (SN-CB-02) from the permit. All references to this control equipment were removed from the specific conditions.
- The Br₂+HBr total allowable emissions were corrected to 3.72 lb/hr and 16.32 tpy to reflect changes made in permit 0762-AOP-R25.

The proposed modification resulted in an overall emission decrease of: -22.8 tpy VOC, -1.1 tpy Ammonia, -0.88 tpy Bromide, -0.24 tpy Hydrogen Bromide, -0.55 tpy Methanol, -9.18 tpy Methyl Bromide, and -16.53 tpy Total HAP.

Permit No. 0762-AOP-R27 was issued October 25, 2019. This modification was to:

1. Make several improvements throughout the S8010 production plants that improved cycle times and improved operational efficiency. Project changes included the following types of changes: increase in size of transfer lines, upgrades to the bromine recovery processes, upgrades to heat transfer blower motors, upgrade instrumentation, increased size of the NC-15 Bromine stripper vent line, and increased the size of the NC-15 caustic scrubber

(SN-15-02). The S8010 expansion project resulted in emissions increases at SN-DB-20, SN-15-12, and SN-15-13.

2. Reduced permitted emission rates at SN-MS-03 (French Drain Sump Bubble). The revised emission rate was based on sampling conducted at the French Drain Sumps. Sampling indicated that no bromine emissions will occur at the SN-MS-03; however Albemarle requested a small amount of bromine as a permit limit for the sake of conservatism.
3. Installed a new 56 hp diesel-fired backup electrical generator (SN-MS-08-09). SN-MS-08-09 is subject to the applicable requirements of 40 CFR 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ.
4. Included pH Adjustment Bag Dumping in the Insignificant Activity list as a category A-13 activity.
5. Updated the general provisions to the current language used by the department.

Permitted emissions increased by 0.1 tpy PM/PM₁₀, 0.5 tpy SO₂, 5.6 tpy VOC, 0.9 tpy CO, 1.4 tpy NO_x, 0.01 tpy Benzene, 1.01 tpy Br₂+HBr, 0.01 tpy Total HAP and decreased by 11.39 tpy Br₂.

Permit No. 0762-AOP-R28 was issued March 31, 2020. This application was submitted to replace the existing SN-16-20 Heat Exchange Heater (4.9 MMBtu/hr) in the NC-17 Unit with a 4.4 MMBtu/hr heater. Permitted emission rates increased/decreased by -0.2 tpy SO₂, -0.4 tpy VOC, 0.8 tpy CO and -0.2 tpy NO_x. CO emission increases were attributed to using AP-42 emission factors; previous CO calculations were based on vendor specifications.

Permit No. 0762-AOP-R29 was issued July 7, 2020. This application was submitted as a minor modification, to allow permit flexibility to install up to two (2) temporary boilers (BH-03 and BH-04) provided the boilers have a heat input capacity of less than 100 MMBtu/hr (each). Permitted emission rates did not increase; temporary boilers are included in the current annual combined boiler emissions limit.

Permit No. 0762-AOP-R30 was issued April 29, 2022. This permitting action was necessary to renew the existing Title V permit. In addition, the following changes were made:

1. SN-DB-04, SN-DB-18, SN-DB-22, SN-15-19, SN-TB-04, SN-16-24, SN-16-33 were demolished and removed from the facility.
2. SN-DB-05, SN-DB-06, and SN-DB-08 were designated out of service but remain in the field.
3. Revised the test method for CO testing in Specific Conditions 66, 170, and 210 from Method 10B to Method 10, per Department letter dated January 22, 2021.
4. Removed the following insignificant activities: Pressurized Ethylene Glycol Storage Tank (D-9972), Hot Water Tank 67-65-1, Area Safety Relief Knockout Pot D-9505, Antifoam Storage Tank T-95107, and Polymer Transfer.
5. Added SN-16-32 H₂SO₄ Storage and T-9358 H₂SO₄ Collection to the insignificant activity list under category A-13.
6. Removed previous Plantwide Condition #21. Engines are accounted for in "Generator Usage" section of the permit; Plantwide Condition #21 was redundant.

7. Removed previous Specific Conditions #177 and #179. These conditions pertained to 40 CFR Part 61, Subpart V. Albemarle complies with Subpart V through compliance with 40 CFR Part 63, Subpart FFFF (63.2535(k)), as described in Specific Condition #175.
 8. Added opacity limits at the NC-22 Production, Bromine Recovery Unit and natural gas combustion sources. The following sources now have a 5% opacity limit: SN-TB-05, TB-08, TB-14, TB-44, TB-48, 33-03, AD-32, 15-14A, 15-14B. Additionally, a no-offsite opacity condition was added to the South Landfill (SN-MS-06)
 9. Incorporated a Minor Mod to add new 13.5 MMBtu/hr natural gas-fired hot oil furnace as SN-21-05 and 2.15 MMBtu/hr natural gas fired process heater as SN-15-21. Additionally added hot oil storage tank as A-13 IA and increase permitted fugitive emissions at SN-21-02 to account for the increased components associated with natural gas and hot oil.
 10. Incorporated a Minor Mod install a new fire pump engine to replace the existing 375 horsepower (HP) Fire Pump Engine #3 (SN-MS-08-07). The new engine is a 332 HP diesel-fired engine, and will retain SN-MS-08-07.
 11. Added Benzene emission limits to all sources that emit the pollutant because the facility is a Major Source of HAPs for Benzene.
 12. Corrected rounding, HAP totals, and calculations.
- Permitted emission rates increased/decreased by -15.8 tpy PM, -16 tpy PM₁₀, -2.3 SO₂, 4.1 tpy VOC, 5.7 tpy CO, 4.4 tpy NO_x, 3.06 tpy Total HAP, 0.2 tpy Benzene, -0.39 tpy Cl₂, 0.1 tpy HCl, -0.01 tpy Hydrazine, -0.07 tpy Methanol, -6.09 tpy Br₂, 3.15 tpy Br₂+HBr, -0.43 tpy H₂S and -1.5 tpy HBr.

Permit No. 0762-AOP-R31 was issued on June 3, 2022. This permitting action added a Hydrocyclone system, that will remove oil from the sour brine feed as it enters the plant, as an A-13 Insignificant Activity. Permitted emissions did not change.

Permit No. 0762-AOP-R32 was issued on April 13, 2023. With this minor modification, the facility installed a second recycle HCl storage tank at the Bromine Production Unit (SN-BR-08A/B), installed a central vacuum system at NC-17 as an insignificant activity, added sandblasting operation to the permit (SN-MS-13), and added category B-14 insignificant activities to the permit. The facility's permitted annual emissions increased by 4.3 tpy PM, 2.1 tpy PM₁₀, 0.1 tpy VOC, 0.13 tpy benzene, 0.51 tpy HCl, and 0.64 tpy total HAPs.

Permit No. 0762-AOP-R33 was issued on October 19, 2023. With this minor modification, the facility installed a pilot plant to test development of a new brominated flame retardant product. This modification also included an administrative amendment to add a second tank to the hydrocyclone system in the insignificant activity list and relabeled them as T-6630 and T-6631. The facility's permitted annual emissions increased by 0.7 tpy VOC, 0.001 tpy hydrazine, 0.07 tpy Br₂, and 0.14 tpy HBr.

Permit No. 0762-AOP-R34 was issued on September 4, 2024. With this minor modification, the facility installed a new truck unloading station at the pilot plant (SN-AL-05). This did not increase the throughput rate or production rate of the pilot plant. The facility's permitted annual emissions increased by 0.1 tpy VOC.

SECTION IV: SPECIFIC CONDITIONS

Bromine (Br₂) Production

Bromine-containing brine occurs naturally in specific south Arkansas geological formations. The separation of bromine from the brine takes place in two bromine towers.

When the brine first comes out of the ground, it contains sour natural gas and sodium bromide. This gas is separated from the sodium bromide and sent to the sulfur recovery processes. The degassed brine is fed directly to the bromine towers through a feed brine tank. In the bromine towers, the brine is mixed with chlorine. Liquid chlorine is unloaded directly from railcars and passed through a vaporizer (the chlorine railcar unloading takes place under pressure, so negligible losses result). The chlorine gas is injected into the bromine towers. There is no permanent chlorine storage at this plant.

In the bromine towers, the brine is chlorinated to produce the bromine. The bromine vapors are condensed, purified, and then packaged.

Each bromine tower has an atmospheric scrubber. Scrubbers SN-BR-01 and SN-BR-04 are associated with the bromine towers, while SN-BR-02 and SN-BR-03 are associated with the common purification train. SN-BR-02 and SN-BR-03 do not vent directly to the atmosphere. The gases leaving these two scrubbers are sent to a third scrubber, the bromine area scrubber, SN-BR-12.

Bromine vapors displaced during the packaging and loading operations are vented back to the bromine purification train scrubbers. If a bromine shipping container needs to be completely purged of bromine vapors (for internal inspection or repair), nitrogen is blown into the container and the vapors are vented to the bromine purification train scrubbers.

No alternate operating scenarios are proposed for this unit. However, Albemarle is permitted to operate the Caustic Drum (SN-BR-15) to control emissions from the bromine storage tanks during unloading activities when the Bromine Area Scrubber (SN-BR-12) is out-of-service. Albemarle expects this scenario to occur no more than five (5) days per year.

Compliance with permitted emission rates shall be demonstrated through stack testing, parametric monitoring, and record keeping requirements.

Specific Conditions

1. The permittee shall not exceed the emission rates set forth in the following table: [8 CAR § 41-401 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
BR-01	#1 Bromine Tower Vent Scrubber C-3042	VOC	1.5	6.6
BR-04	#2 Bromine Tower Vent Scrubber C-3043	VOC	3.9	16.7
BR-08A/B	Recycle HCl Storage Tank	VOC	1.1	1.4
BR-14	Br ₂ Fugitive Emissions	VOC	0.5	2.2

2. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [8 CAR § 40-701 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
BR-01	#1 Bromine Tower Vent Scrubber C-3042	Br ₂	0.26	1.14
		Total HAP	N/A	0.26
		Cl ₂	N/A	0.26
BR-04	#2 Bromine Tower Vent Scrubber C-3043	Br ₂	0.14	0.61
		Total HAP	N/A	0.13
		Cl ₂	N/A	0.13
BR-08A/B	Recycle HCl Storage Tank	Total HAP	N/A	2.16
		Benzene	1.10	1.34
		HCl	N/A	0.82
BR-09	Recycle HBr Storage Tank, Vent Scrubber C-3036	Br ₂	0.02	0.09
		HBr	0.02	0.09
BR-12	Bromine Area Scrubber C-3049	Br ₂	0.30	1.31
		Total HAP	N/A	0.44
		Cl ₂	N/A	0.44
BR-14	Br ₂ Fugitive Emissions	Br ₂ +HBr	1.39	6.09
		Total HAP	N/A	0.18
		Cl ₂	N/A	0.18
BR-15	Caustic Drum	Br ₂ +Cl ₂	1.60	0.10
		Total HAP	N/A	0.10

3. The following sources shall not exceed 5% opacity: SN-BR-01, SN-BR-04, SN-BR-09, and SN-BR-12. [8 CAR § 40-401 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
4. All bromine vapors displaced during loading shall be vented back to the bromine purification train scrubber (SN-BR-03), in such manner that no vapors are released to the atmosphere. In the event a shipping container requires purging of bromine or other vapors, such activity shall be performed so that no vapors are emitted. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
5. The permittee shall calculate Br₂ and HBr emissions from SN-BR-09 once every six months. The calculation method shall be the same as presented in the permit application, or a method otherwise pre-approved by the Department. Emission estimates shall be quantified as lb/hr and ton/yr using worst-case parameters for hourly emissions and a rolling twelve-month total for annual figures. The calculations shall be kept on-site and made available to Department personnel upon request. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
6. The permittee shall test the following sources using the specified test methods. The permittee shall conduct testing in 2017 and before the end of each fifth calendar year thereafter. Testing shall be conducted within 10% of maximum source throughput capacity. [8 CAR § 41-602 and 40 C.F.R. § 52 Subpart E]

Source	Pollutants	Test Method
BR-01	VOC	25A or 18
	Bromine (Br ₂), Chlorine (Cl ₂)	26A
BR-04	VOC	25A or 18
	Bromine (Br ₂), Chlorine (Cl ₂)	26A
BR-12	Bromine (Br ₂), Chlorine (Cl ₂)	26A

7. RESERVED
8. The permittee shall install and operate a continuous flow monitor alarm at SN-BR-01 and SN-BR-04, which shall indicate when the scrubber brine solution flow rate fails to meet the established compliant parameter value. The flow rates measured at the most recent satisfactory test event shall be recorded and established as a sufficient parameter for demonstration of continuous compliance until the next test is performed. Proposed parametric set points and allowable operating ranges shall be submitted with the test report. A log of alarm incidents and corrective action shall be maintained on-site and made available to Department personnel upon request. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
9. The permittee shall record, every three hours, the pump discharge valve position and pump run light at SN-BR-12. The pump discharge valve position at the most recent satisfactory test event shall be recorded and established as a sufficient parameter for demonstration of continuous compliance until the next test is performed. Proposed parametric set points and allowable operating ranges shall be submitted with the test report. The pump discharge valve position/pump light records shall be maintained on-site and made available to Department personnel upon request. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
10. The permittee shall measure and record the caustic concentration of the scrubber media used for SN-BR-12 at least once per 12-hour shift. Each caustic changeout shall be logged as performed. Both caustic strength and changeout records corresponding to the most recent approved satisfactory test event shall be kept on-site and made available to Department personnel upon request. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

Sulfur Production

Sour gas is co-produced with brine. The hydrogen sulfide (which makes the gas sour) is removed in the gas sweetening plants. These plants use solvents to remove the hydrogen sulfide from the sour gas. The treated gas is sent to the boilers where it is burned as fuel. The acid gas from the sweetening units, the gas which contains the hydrogen sulfide, is sent to a sulfur recovery plant for conversion to sulfur. The tail gas from the sulfur recovery plant is incinerated.

Gas Sweetening Plants

The gas sweetening plants are absorption processes. In these processes, the sour gas enters the bottom of the contactor. The absorption solution absorbs the H₂S contained in the gas. The desulfurized gas leaves the top of the absorber, while the rich solution (the solution which contains the H₂S) is sent to the regenerator column. In the regenerator, the volatile H₂S is separated by steam stripping. The regenerated solution is recycled to the contactor. The acid gas, which now contains the H₂S, is sent to the sulfur plant. A flare (SN-SL-01) is used during emergencies to burn vent gases when either equipment malfunction or power failure occur.

Sulfur Recovery Plant

The acid gas from the Gas Sweetening Plants is sent to a sulfur recovery plant. The sulfur recovery plant uses the Claus process, where exothermic reactions convert H₂S to elemental sulfur. The Claus plant at Albemarle removes 93% of the sulfur from the sour gas. The sulfur is sold as a product. The tail gas is sent to an incinerator (SN-SR-01). The Claus plant itself has no emissions.

Tail Gas Incinerator

Vent gases from the sulfur recovery plant are burned in the tail gas incinerator. The tail gas incinerator is designed for a minimum exhaust temperature of 1200 °F.

There are two alternate operating scenarios for SN-SL-01: (1) emergency flaring of “sour” brinefield gas and (2) emergency flaring of “sweet” gas. There is one alternate operating scenario for SN-SR-01 that covers the situation when the incinerator operating temperature falls below 1,200 °F.

Specific Conditions

11. The permittee shall not exceed the emission rates set forth in the following table. [8 CAR § 41-401 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
SL-01	Gas Sweetening Process Flare	PM ₁₀	0.1	0.1
		SO ₂	0.1	0.1
		VOC	0.1	0.1
		CO	0.1	0.1
		NO _x	0.1	0.1
SL-02	Sulfinol Storage Tank	VOC	0.2	0.6

SN-#	Description	Pollutant	lb/hr	tpy
SR-01	Tail Gas Incinerator	PM ₁₀	0.1	0.4
		SO ₂	727.0	3,184.0
		VOC	0.1	0.4
		CO	0.3	1.1
		NO _x	0.6	2.6
SR-02	Sulfur Area Fugitives	SO ₂	0.2	0.7
		VOC	0.7	2.0
SR-03	Molten Sulfur Pit and Loadout	SO ₂	0.5	1.8

12. The permittee shall not exceed the non-criteria emission rates set forth in the following table: [8 CAR § 40-701 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
SL-01	Gas Sweetening Process Flare	PM	0.1	0.1
		Benzene	0.01	0.01
		Total HAP	N/A	0.01
SR-01	Tail Gas Incinerator	PM	0.1	0.4
		Benzene	0.01	0.01
		Total HAP	N/A	0.01
SR-02	Sulfur Area Fugitives	H ₂ S	0.30	1.31
		Total HAP	N/A	0.55
		Methanol	0.38	0.55
SR-03	Molten Sulfur Pit and Loadout	H ₂ S	0.22	0.96

13. The following sources shall not exceed 5% opacity: SN-SL-01 and SN-SR-01. The permittee shall comply with Plantwide Condition #11 for opacity readings. [8 CAR § 40-701 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
14. Any flare event where non-pipeline quality gas is burned at SN-SL-01, with the exception of those instances outlined in Specific Condition #17, shall be reported in accordance with the requirements of General Provision 8. [Rule 26.701 and 40 C.F.R. § 70.6(a)(3)(iii)(B)]
15. The permittee shall operate and maintain a device to continuously monitor and record the temperature of the exhaust from the tail gas incinerator (SN-SR-01). This temperature shall be maintained at or above 1200°F during those periods when sulfur-bearing gases are being incinerated. [8 CAR § 41-603, 40 C.F.R. § 52 Subpart E, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
16. The permittee shall test SN-SR-01 for lb/hr emissions of SO₂, using EPA Reference Method 6C. The testing shall be performed in 2020, and before the end of each fifth calendar year thereafter. [8 CAR § 41-602 and 40 C.F.R. § 52 Subpart E]

17. During times of equipment malfunction or power failure, the permittee shall be allowed to operate under the following alternate scenarios within the limits outlined for each. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]

Source	Scenario	Emission Limits			Operating Limits
		Pollutant	lb/hr	ton/yr	
SL-01	Emergency Flaring of Brinefield Gas	PM ₁₀	3.7	0.1	Actual emissions shall be calculated and recorded for each event.
		SO ₂	12066.0*	36.0	
		VOC	3.7	0.1	
		CO	13.4	0.1	
		NO _x	31.4	0.1	
SL-01	Emergency Flaring of Sweet Gas	PM ₁₀	2.2	0.2	Not to exceed 96 hours per year
		SO ₂	5.6	0.3	
		VOC	2.2	0.2	
		CO	7.8	0.4	
		NO _x	18.4	0.9	
SR-01	Tail Gas Pilot Flame Deviation (<1200°F)	SO ₂	242.6	2.9	Not to exceed 24 hours per year

* One-hour maximum emission rate. There are different limits for 3-hour and 24-hour averaging periods. See Specific Condition #18.

18. The permittee shall maintain records which document compliance with the operating limits of the above listed scenarios. To demonstrate compliance with the limits given for emergency flaring of brinefield gas, the records must show that emissions were less than 12,066 pounds for any event lasting one hour or less, 8,246 lb/hr average for any three hour period, and 7,142 lb/hr average for any 24-hour period. The records shall be updated as performed, kept on-site, and made available to Department personnel upon request. If SO₂ emissions exceed these limits, the emissions must be reported in accordance with §19.601 or §19.602, as applicable. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]
19. During times of equipment malfunction or power failure, the permittee shall not exceed the non-criteria emission rates set forth in the following table. [8 CAR § 40-701 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

Source	Scenario	Emission Limits			Operating Limits
		Pollutant	lb/hr	ton/yr	
SL-01	Emergency Flaring of Brinefield Gas	PM	3.7	0.1	Actual emissions shall be calculated and recorded for each event.
		Benzene	0.01	0.01	
		Total HAP	N/A	0.01	
SL-01	Emergency Flaring of Sweet Gas	PM	2.2	0.2	Not to exceed 96 hours per year
		Benzene	0.01	0.01	
		Total HAP	N/A	0.01	
SR-01	Tail Gas Pilot Flame Deviation (<1200°F)	H ₂ S	257.4	3.1	Not to exceed 24 hours per year

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Source	Scenario	Emission Limits			Operating Limits
		Pollutant	lb/hr	ton/yr	
					Not to exceed 10 hours in any 24 hour period

20. The permittee shall maintain records which document compliance with the operating limits of the above listed scenarios. The records shall be updated as performed, kept on-site, and made available to Department personnel upon request. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

Clear Completion Fluids Metal Bromide Process Description

Zinc and sodium bromide are produced in a batch process by reacting lime, zinc oxide, or sodium hydroxide with hydrobromic acid and elemental bromine. Albemarle can also produce these bromides by reacting the metal, or metal hydroxide, bromine, and methanol. These processes are capable of producing a number of bromine salts, depending on the metal, metal oxide, or metal hydroxide used as a starting material. However, Albemarle is permitted to manufacture those compounds listed here and other HAP metal compounds that have a TLV greater than or equal to 0.1 milligrams per cubic meter. Vapors generated during the reaction are controlled by one scrubber (SN-CB-16). Particulate emissions from raw material handling are controlled by two baghouses (SN-CB-01, SN-CB-18).

Alternate Operating Scenario

The alternate operating scenario for the Clear Completion Fluids process bypasses the control device (SN-CB-16) after the reactor vapor temperature reaches 245 °F. Emissions will be routed to the scrubber SN-CB-16 at all temperatures below 245 °F; once a temperature of 245 °F has been achieved the emissions will bypass the scrubber (SN-CB-16) and be vented by an automated valve to the atmosphere via the CCF Reactor Vent (SN-CB-23). The number of batches under this scenario will be limited to 185 batches per year.

Compliance with permitted emission rates for the Clear Completion Fluids processes shall be demonstrated through stack testing, parametric monitoring, and record keeping requirements.

Specific Conditions

21. The permittee shall not exceed the emission rates set forth in the following table. [8 CAR § 41-401 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
CB-01	Raw Material Silo	PM ₁₀	0.1	0.5
CB-04	Methanol Storage Tank	VOC	26.0	0.4
CB-16	R-22 Vent Scrubber (North)	VOC	0.3	1.2
CB-17	CCF Fugitive Emissions	VOC	1.2	5.1
CB-18	Raw Material Baghouse	PM ₁₀	0.1	0.5
CB-23	Reactor Vent	VOC	5.0	0.6

22. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [8 CAR § 40-701 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
CB-01	Raw Material Silo	PM	0.1	0.5
CB-04	Methanol Storage Tank	Total HAP	N/A	0.40
		Methanol	26.00	0.40

SN-#	Description	Pollutant	lb/hr	tpy
CB-16	R-22 Vent Scrubber (North)	Ammonia	1.00	1.10
		Br ₂	0.10	0.44
		HBr	0.08	0.02
		Total HAP	N/A	1.19
		Hydrazine	N/A	0.01
		Methanol	0.07	0.30
		Methyl Bromide	0.20	0.88
CB-17	CCF Fugitive Emissions	Br ₂ +HBr	0.37	1.63
		Total HAP	N/A	3.88
		Hydrazine	N/A	0.02
		Methanol	0.88	3.86
CB-18	Raw Material Baghouse	PM	0.1	0.5
		Total HAP	N/A	0.26
CB-21	Rundown Tanks T-4142/4143	Total HAP	N/A	0.01
		Hydrazine	N/A	0.01
CB-22a	Truck Loading #1	Total HAP	N/A	0.01
		Hydrazine	N/A	0.01
CB-22b	Truck Loading #2	Total HAP	N/A	0.01
		Hydrazine	N/A	0.01
CB-23	Reactor Vent	Total HAP	N/A	0.56
		Hydrazine	N/A	0.01
		Methanol	4.98	0.55

* The HAP emission limits for CB-18 apply only to the metal compounds which have a TLV equal to or greater than 0.1 milligrams per cubic meter.

23. The following sources shall not exceed 5% opacity: SN-CB-01, SN-CB-16, and SN-CB-18. The permittee shall comply with Plantwide Condition #11 for opacity readings. [8 CAR § 40-401 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
24. The permittee shall conduct stack testing for bromine (Br₂) at SN-CB-16. The testing shall be performed in 2017, and before the end of each fifth calendar year thereafter, using EPA Reference Method 26A. [8 CAR § 40-902 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
25. The permittee shall perform a visual inspection of the pumps driving the scrubber media at SN-CB-16 at least once per batch, to ensure that sufficient flow is maintained. Inspection results shall be recorded in a log. These records shall be kept on-site and made available to Department personnel upon request. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
26. The permittee shall use fresh caustic with every zinc bromide batch at scrubber SN-CB-16. For sodium bromide, and all other metal bromides, the pH shall be tested once per batch, and caustic changeouts performed as needed. Each pH test and caustic changeout shall be logged as performed. Both pH and changeout records corresponding to the most recent satisfactory test event shall be kept on-site and made available to Department

- personnel upon request. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
27. The permittee shall calculate methyl bromide and methanol emissions from SN-CB-16 once every six months. Emission estimates shall be quantified as lb/hr and ton/yr, using worst-case parameters for hourly emissions and a rolling twelve-month total for annual figures. The calculations shall be kept on-site and made available to Department personnel upon request. The calculations shall indicate compliance status with regard to both normal and alternate operating scenarios. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
- 27a. The permittee shall demonstrate compliance with SN-CB-04 emission rates by not exceeding a throughput of 1,000,000 gallons of methanol or other less volatile VOC per twelve consecutive months at this tank. [8 CAR § 41-605, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]
- 27b. The permittee shall maintain monthly records demonstrating compliance with Specific Condition #27a. Records shall be updated by the 15th day following the month to which the records pertain, made available to Department personnel upon request, and otherwise in accordance with General Provision 7. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]

Alternate Operating Scenario Conditions

28. The emission limits in conditions #21 and #22 are still in affect during the alternate operating scenario. [8 CAR § 41-401 *et seq.*, 40 C.F.R. § 52 Subpart E, 8 CAR § 40-701, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
29. The permittee shall be limited to 185 total batches under the alternate operating scenario per rolling 12-month period. Monthly records documenting batch totals shall be maintained on-site and made available to Department personnel upon request. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
30. The permittee shall use fresh caustic with each alternate scenario batch at SN-CB-16. Each caustic changeout shall be logged as performed. Both caustic strength and changeout records shall be kept on-site and made available to Department personnel upon request. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
31. The permittee shall operate an automated system that will prevent venting, during the alternate scenario, from the SN-CB-23 reactor until a set point temperature of 245 degrees F is reached. Set point venting temperatures shall be recorded during each alternate operating scenario. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
32. The permittee shall perform a visual inspection of the pumps driving the scrubber media at SN-CB-16 at least once per alternate scenario batch, to ensure that sufficient flow is maintained. Inspection results shall be recorded in a log. These records shall be kept on-site and made available to Department personnel upon request. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

33. RESERVED

34. RESERVED

35. RESERVED

35a. SN-CB-04 is an affected source and is subject to requirements in 40 CFR 63, Subpart EEEE – *National Emission Standards for Hazardous Air Pollutants: Organic Liquids Distribution (Non-Gasoline)*. Applicable requirements include, but are not limited to the following:

- a. The permittee shall submit the following information in either the Notification of Compliance Status, according to the schedule specified in Table 12 of Subpart EEEE or in the first Compliance report, according to the schedule specified in §63.2386(b), whichever occurs first. [8 CAR § 41-204 and 40 C.F.R. § 63.2343(b)(1)(i)]
 - i. Company name and address.
 - ii. Statement by a responsible official, including the official's name, title, and signature, certifying that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.
 - iii. Date of report and beginning and ending dates of the reporting period.
 - iv. A listing of all transfer racks (except those racks at which only unloading of organic liquids occurs) and of tanks greater than or equal to 18.9 cubic meters (5,000 gallons) that are part of the affected source but are not subject to any of the emission limitations, operating limits, or work practice standards of this subpart.
- b. If the permittee submits the first Compliance report before the Notification of Compliance Status, the Notification of Compliance Status must contain the information specified in §63.2386(d)(3) and (4) if any of the changes identified in §63.2343 (d) have occurred since the filing of the first Compliance report. If none of the changes identified in that section have occurred since the filing of the first Compliance report, the permittee does not need to report the information specified in §63.2386(c)(10)(i) when you submit your Notification of Compliance Status. [8 CAR § 41-204 and 40 C.F.R. § 63.2343(b)(1)(ii)(A)]
- c. If the permittee submits the Notification of Compliance Status before the first Compliance report, the first Compliance report must contain the information specified in §63.2386(d)(3) and (4) if any of the changes specified in §63.2343 (d) have occurred since the filing of the Notification of Compliance Status. [8 CAR § 41-204 and 40 C.F.R. § 63.2343(b)(1)(ii)(B)]
- d. If the permittee has already submitted a Notification of Compliance Status or a first Compliance report under §63.2386(c), the permittee does not need to submit a separate Notification of Compliance Status or first Compliance report for each storage tank that meets the conditions identified §63.2343 (b) (i.e., a single

- Notification of Compliance Status or first Compliance report should be submitted). [8 CAR § 41-204 and 40 C.F.R. § 63.2343(b)(I)(iii)]
- e. The permittee must submit a subsequent Compliance report according to the schedule in §63.2386 (b) whenever any of the events in §63.2343 (d) occur, as applicable. [8 CAR § 41-204 and 40 C.F.R. § 63.2343(b)(2)(i)]
 - f. Subsequent Compliance reports must contain the information in §63.2386(c)(1), (2), (3) and, as applicable, in §63.2386(d)(3) and (4). If the permittee has already submitted a subsequent Compliance report under §63.2386(d), the permittee does not need to submit a separate subsequent Compliance report for each storage tank that meets the conditions identified in §63.2343 (b) (i.e., a single subsequent Compliance report should be submitted). [8 CAR § 41-204 and 40 C.F.R. § 63.2343(b)(2)(ii)]
 - g. For each storage tank that meets the conditions identified in §63.2343 (b), the permittee must keep documentation, including a record of the annual average true vapor pressure of the total Table I organic HAP in the stored organic liquid, that verifies the storage tank is not required to be controlled under Subpart EEEE. The documentation must be kept up-to-date and must be in a form suitable and readily available for expeditious inspection and review according to §63.10(b)(1), including records stored in electronic form in a separate location. [8 CAR § 41-204 and 40 C.F.R. § 63.2343(b)(3)]

Additional Conditions When Producing Metal Bromides (Sodium and Zinc Bromides)

- 36. The permittee shall not use the Clear Completion Fluid (CCF) production area to produce any metal compound having a threshold limit value less than 0.1 milligrams per cubic meter. The permittee shall only produce the following metal bromide products: zinc bromide, sodium bromide, and any of the metal compounds with a threshold limit value equal to or greater than 0.1 milligrams per cubic meter. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
- 37. The permittee shall maintain records of each product produced within the CCF production area. These records shall identify the product of each batch. For each batch where the metal compound is not zinc, or sodium bromides the permittee shall maintain the following records: The American Conference of Governmental Industrial Hygienists (ACGIH) Time Weighted Average Threshold Limit Value (TWA-TLV) including units, the date, time initiated and duration of batch, and the amount product produced. These records shall be kept on site and made available upon request to Department personnel. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
- 38. RESERVED
- 39. RESERVED
- 40. RESERVED
- 41. RESERVED

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- 42. RESERVED
- 43. RESERVED
- 44. RESERVED
- 45. RESERVED
- 46. RESERVED
- 47. RESERVED
- 48. RESERVED
- 49. RESERVED
- 50. RESERVED
- 51. RESERVED
- 52. RESERVED
- 53. RESERVED
- 54. RESERVED
- 55. RESERVED

Alkyl Amines Process

Alkyl amines are produced by the reaction of primary or secondary amines with alkyl bromides in the presence of sodium hydroxide.

The raw materials used in the production of alkyl amines are primary and/or secondary amines, which are purchased as raw materials from an outside supplier, and olefins. The olefins are selected from the group of olefins that have eight or more carbon atoms in their structure. These olefins are also purchased from off-site suppliers. The olefins are converted to an alkyl bromide by reaction with hydrogen bromide produced on-site. The alkyl bromides thus produced are reacted with a primary and/or secondary amine in the presence of sodium hydroxide to produce the desired product alkyl amine. The choice of the starting amine(s) and alkyl bromide(s) determines the structure of the product, which is a secondary or tertiary alkyl amine. The product amine is thus “tailored” to the needs of the user. Product amines are, by nature of the production process, statistical distributions of alkyl amines, depending on the initial raw materials.

By-products from this process are mixtures of alkyl amines and olefins and an aqueous solution of sodium bromide. The by-products can often be sold as product, depending on market demand. By-products that cannot be sold or internally transferred as product are disposed off-site.

By-product sodium bromide brines are recycled to the bromine plant for conversion to bromine. Bromine from the bromine plant is the ultimate source of the hydrogen bromide used to make the alkyl bromides mentioned above.

Hydrogen bromide is produced within the Alkyl Amines facility in an integrated process by directly reacting hydrogen and bromine. Part of this hydrogen bromide is used to produce hydrobromic acid, which may be used on-site or transferred off-site as product.

Under the product recovery process, the bottoms waste stream from the ADMA product distillation column is collected in a tank and sent batchwise to a wiped film evaporator, where the product is flashed overhead and condensed in a heat exchanger. The condensate drains by gravity to a collection drum, from which it would be pumped to a storage tank (D-1534). Recovered material would be pumped to existing ADMA storage tanks. Evaporator bottoms would be sent to the existing waste tank.

The only emission point affected by this scenario is the tank’s vent, SN-AD-37. The emissions involved are volatile organic compounds, at a rate of 0.05 lb/hr and 0.17 ton/yr. The volatile emissions are not considered hazardous air pollutants.

Emission control devices for the Alkyl Amines process include the Acid Vent Scrubber (SN-AD-05), the Emergency Flare (SN-AD-26), and the Alkyl Amines Area Odor Control Vent Gas Oxidizer (SN-AD-35).

In the alternate operating scenario for the Alkyl Amines Process, Albemarle stores sodium bromide (NaBr), also known as brine, from the ADMA process unit in the DECTP unit’s ethanol tank (SN-DE-01) and in the NC-14 unit’s column feed tank (SN-TB-11). The loadout of NaBr from these tanks is permitted as source number SN-AD-39.

Compliance with permitted emission rates shall be demonstrated through stack testing, parametric monitoring, record keeping, and reporting requirements.

Specific Conditions

56. The permittee shall not exceed the emission rates set forth in the following table. [8 CAR § 41-401 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
AD-01	Olefins Storage Tank #1: T-1501	VOC	0.2	0.8
AD-02	Olefins Storage Tank #2: T-1503	VOC	0.2	0.8
AD-03	Alkyl Amines Storage Tank: T-1502	VOC	0.3	1.2
AD-05	Acid Vent Scrubber: C-1531 (CD-AD-05, also formerly SB-03).	VOC	0.3	1.4
AD-07	Alkyl Amine Rundown Tank: T-1534A	VOC	0.1	0.3
AD-08	Alkyl Amines Rundown Tank: T-1534B	VOC	0.1	0.3
AD-09	Alkyl Amines Rundown Tank: T-1534C	VOC	0.1	0.3
AD-10	Alkyl Amines Storage Tank: T-1537	VOC	0.3	1.2
AD-11	Alkyl Amines Storage Tank: T-1535	VOC	0.3	1.2
AD-12	Alkyl Amines Storage Tank: T-1536	VOC	0.3	1.2
AD-13	Alkyl Amines Storage Tank: T-1538	VOC	0.3	1.2
AD-14	Alkyl Amines Storage Tank: T-1539	VOC	0.3	1.2
AD-15	Alkyl Amines Storage Tank: T-1540	VOC	0.3	1.2
AD-16	Dowtherm Furnace 3.55 MMBtu/hr Natural Gas-Fired	PM ₁₀	0.1	0.2
		SO ₂	0.1	0.1
		VOC	0.1	0.1
		CO	0.3	1.4
		NO _x	0.4	1.6
AD-17	Alkyl Amines Blend Tank: D2427-A	VOC	0.3	1.2
AD-18	Sodium Bromide Brine for Recycle: T-1409	VOC	0.3	1.2
AD-20	Olefins Storage Tank: T-1405A	VOC	0.2	0.8
AD-21	Olefins Storage Tank: T-1405B	VOC	3.5	15.1
AD-23	Alkyl Amines Storage Tanks: T-1408 A, B	VOC	0.1	0.2
AD-24	Product Storage: Alkyl Amines: T-1542	VOC	0.3	1.2
AD-25	Product Storage: Alkyl Amines: T-1543	VOC	0.3	1.2
AD-26	ADMA Flare <i>Alkyl Amines Scenario Emergency Flaring Events</i>	PM ₁₀	0.2	0.1
		SO ₂	0.1	0.2
		VOC	0.7	0.2
		CO	0.1	0.2
		NO _x	0.4	0.2
AD-26	ADMA Flare <i>Alkyl Amines Scenario Non-Emergency Flaring Events</i>	PM ₁₀	0.8	0.1
		SO ₂	0.1	0.1
		VOC	48.5	0.6
		CO	18.9	0.3
		NO _x	3.5	0.1
AD-27	Recycle Brine Storage Tank: T-1407	VOC	0.3	1.2

SN-#	Description	Pollutant	lb/hr	tpy
AD-28	Stripped Recycle Brine Storage Tank: T-1541	VOC	0.1	0.4
AD-29	Stripped Recycle Brine Tank: T-1544	VOC	0.1	0.4
AD-32	Direct Natural Gas-Fired Heater 4.62 MMBtu/hr	PM ₁₀	0.1	0.2
		SO ₂	0.1	0.1
		VOC	0.1	0.2
		CO	0.4	1.7
		NO _x	0.5	2.1
AD-35	Alkyl Amines Area Odor Control Vent Gas Oxidizer (VGO)	PM ₁₀	0.3	1.0
		SO ₂	0.2	0.7
		VOC	1.3	5.4
		CO	0.1	0.3
		NO _x	0.7	3.1
AD-36	Fugitive Emissions, Including Product Loading	VOC	4.5	17.6
AD-37	ADMA Condensate Collection Tank	VOC	0.1	0.3
AD-39	ADMA Brine Load Out***	VOC*	0.1	0.4
AD-40	Mixed ADMA Final Product Storage Tank, T-9965	VOC	0.3	1.2
AD-41	Mixed ADMA Final Product Storage Tanks, T-1408A and T-1408B	VOC	0.6	2.3
DE-01	ADMA Brine Storage Tank**	VOC*	0.5	2.1
TB-11	ADMA Brine Storage Tank**	VOC*	0.1	0.4

* ADMA brine or any non-HAP material with a vapor pressure less than or equal to 0.0120 psia may be stored and loaded out.

** ADMA brine service is not the primary operating scenario for these sources. The primary operating scenario for DE-01 and TB-11 are DECTP Production and MeBr Primary Production Scenario, respectively.

*** AD-39 is the emissions from the loadout of both DE-01 and TB-11 in ADMA brine service.

57. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [8 CAR § 40-701 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
AD-05	Acid Vent Scrubber: C-1531 (CD-AD-05, also formerly SB-03)	Br ₂ +HBr	0.05	0.22
		Total HAP	N/A	0.50
		HCl	N/A	0.50
AD-16	Dowtherm Furnace 3.55 MMBtu/hr Natural Gas-Fired	PM	0.1	0.2
		Benzene	0.01	0.01
		Total HAP	N/A	0.03
AD-26	ADMA Flare <i>Alkyl Amines Scenario Emergency Flaring Events</i>	PM	0.2	0.1
		Br ₂	0.02	0.01
		Benzene	0.01	0.01
		Total HAP	N/A	0.01

SN-#	Description	Pollutant	lb/hr	tpy
AD-26	ADMA Flare <i>Alkyl Amines Scenario Non-Emergency Flaring Events</i>	PM	0.8	0.1
		Benzene	0.01	0.01
		Total HAP	N/A	0.01
AD-32	Direct Natural Gas-Fired Heater 4.62 MMBtu/hr	PM	0.1	0.2
		Benzene	0.01	0.01
		Total HAP	N/A	0.04
AD-35	Alkyl Amines Area Odor Control Vent Gas Oxidizer (VGO)	PM	0.3	1.0
		Br ₂	0.03	0.14
		Benzene	0.01	0.01
		Total HAP	N/A	0.03
AD-36	Fugitive Emissions, Including Product Loading	Br ₂	0.30	1.31
		HBr	1.41	6.16
		Total HAP	N/A	0.16
		Hydrazine	N/A	0.01

58. The following sources shall not exceed 5% opacity: SN-AD-05, SN-AD-16, SN-AD-26, SN-AD-32 and SN-AD-35. The permittee shall comply with Plantwide Condition #11 for opacity readings. [8 CAR § 40-401 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
59. The permittee shall document the time SN-DE-01 and SN-TB-11 are in ADMA brine service and calculate the emissions from each tank and loadout (SN-AD-39). The permittee shall include in the documentation the time and date for the beginning and end, the vapor pressure of the material, and VOC emitted for each period of ADMA brine service. These records shall be kept on-site and made available to Department personnel upon request. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]
60. The permittee shall maintain readily accessible records which document that storage of C8 olefin at SN-AD-21 does not exceed 4380 hours per rolling 12-month time frame. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]
61. Operation of the Emergency Flare (SN-AD-26) for emergency use shall not exceed 30 minutes, in the aggregate, during any 24-hour period. See Specific Condition #62 for operation of the flare during non-emergency events. [8 CAR § 41-605, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]
62. The permittee shall maintain records of each venting event to SN-AD-26, both emergency and non-emergency. Acceptable non-emergency events are cleaning and maintenance of equipment where emissions of such activities are routed to the flare. These records shall contain the date, time, reason, duration of each event, and total duration per rolling twelve month period. The permittee shall calculate the emissions for each event in order to demonstrate compliance with the limits in Specific Conditions #56 and #57. These records shall be updated following each event, kept onsite, and made available to Department personnel upon request. Any emergency use exceeding the requirement set forth in the previous condition shall be an upset condition, in accordance with General Provision 8 of this permit. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]

63. The permittee shall test SN-AD-05 for VOC in 2021 and before the end of each fifth calendar year thereafter. The testing shall be performed in accordance with EPA Reference Method 18 or 25A. [8 CAR § 41-602 and 40 C.F.R. § 52 Subpart E]
64. The permittee shall measure and record the flow rate of the scrubber media at SN-AD-05 every four hours. These records shall be kept on-site and made available to Department personnel upon request. The flow value measured at the most recent satisfactory test event shall be established as minimum for purposes of continuous compliance until the next test is performed. [8 CAR § 41-603, 40 C.F.R. § 52 Subpart E, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
65. The permittee shall measure and record the caustic concentration of the scrubber media used for SN-AD-05 once per twelve-hour shift. Each caustic changeout shall be logged as performed. Both caustic strength and changeout records shall be kept on-site and made available to Department personnel upon request. The caustic concentration and changeout schedule corresponding to the most recent satisfactory test event shall be established as minimum for purposes of continuous compliance until the next test is performed. [8 CAR § 41-603, 40 C.F.R. § 52 Subpart E, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
66. The permittee shall test SN-AD-35 for the following compounds in 2021 and before the end of each fifth calendar year thereafter. Applicable test methods are listed in the right column of the table. [8 CAR § 41-602 and 40 C.F.R. § 52 Subpart E]

Pollutant	EPA Reference Method
PM ₁₀	5
SO ₂	6C
VOC	18 or 25A
CO	10
NO _x	7E

67. The permittee shall operate and maintain a device to continuously monitor and record the temperature of the exhaust from the vent incinerator (SN-AD-35). This temperature shall be maintained at or above 1500°F during those periods when any process gases are being incinerated. [8 CAR § 41-603, 40 C.F.R. § 52 Subpart E, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
68. The permittee shall test SN-AD-05 and SN-AD-35 for the following compounds in calendar year 2017 and 2021 and then before the end of each fifth calendar year. Applicable test methods are listed in the right column of the table. [8 CAR § 40-902 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

Source	Pollutant	EPA Reference Method
SN-AD-05	HBr	26A
SN-AD-35	Br ₂	26A

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Alternative test methods may be submitted to the Compliance Inspector Supervisor at least 30 days in advance of planned testing. These methods must receive Department approval prior to the testing event.

Alkyl Bromides Process

Alkyl bromides (RBr) can be produced by the action of hydrogen bromide (HBr) on the corresponding alkyl chloride (RCl). An example is to react HBr with dichloromethane (commonly called methylene chloride) to produce a mixture of bromochloromethane (BCM) and dibromomethane (methylene dibromide, MDB). The product mixture can be separated by distillation and stored. The alkyl bromide product finds use on the plant site as a process solvent, and is sold into various markets.

The alkyl chlorides used as raw materials are low boiling liquids. The alkyl bromide products are higher boiling liquids, and can thus be separated by batch distillation from the other constituents in the product mixture. The hydrogen bromide used as a raw material is a gas at ordinary temperatures and pressures.

Emission control at the Alkyl Bromides Process is facilitated by a carbon bed adsorption system, which vents at SN-AB-15.

Compliance with permitted emission rates shall be demonstrated through parametric monitoring, record keeping, and reporting requirements.

Specific Conditions

69. The permittee shall not exceed the emission rates set forth in the following table. [8 CAR § 41-401 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
AB-15	Emission Control: Carbon Bed Adsorbers (CB-304 and CB-05)	VOC	1.2	5.3
AB-16	Alkyl Bromide Fugitive Emissions	VOC	7.2	31.5
AB-18	Alkyl Bromide Waste Water	VOC	1.5	6.3

70. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [8 CAR § 40-701 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
AB-15	Emission Control: Carbon Bed Adsorbers (CB-304 and CB-05)	Total HAP	N/A	1.10
		Methylene Chloride	N/A	1.10
AB-16	Alkyl Bromide Fugitive Emissions	HBr	0.02	0.08
		Total HAP	N/A	1.75
		HCl	N/A	0.48
		Methylene Chloride	N/A	1.27
AB-18	Alkyl Bromide Waste Water	Total HAP	N/A	1.49
		Methylene Chloride	N/A	1.49

71. All methylene chloride/water heat exchangers shall be operated with the minimum pressure on the cooling side at least 35 kPa greater than the maximum pressure on the process side. [8 CAR § 41-204 and 40 C.F.R. § 63.104(a)(1)]

72. The pressure differential between the cooling and process sides of the methylene chloride/water heat exchangers shall be measured once daily and recorded in a log. This record shall be kept on-site as a verification of compliance with 63.104(a)(1), and shall be made available to Department personnel upon request. [8 CAR § 40-903 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
73. A maintenance wastewater procedure shall be prepared and followed for this process. Details of the requirements of this procedure are contained in 40 CFR 63.105(b) through (e). [8 CAR § 41-204 and 40 C.F.R. § 63.105]
74. Total Resource Effectiveness (TRE) calculations shall be performed and maintained for all process vents (all Subpart G vents in this process area are Group 2 vents). The TRE calculations shall be updated whenever process changes are made. If the TRE index value is less than or equal to 4.0, the permittee shall follow the procedures outlined in §63.115(d) (1)(ii). [8 CAR § 41-204 and 40 C.F.R. § 63.115(d)(1)(i)]
75. The following records shall be maintained: [8 CAR § 41-204 and 40 C.F.R. § 63 Subpart G]
 - a. TRE calculations and all backup information [8 CAR § 41-204 and 40 C.F.R. § 63.117(b)].
 - b. Records of process changes and TRE recalculations [8 CAR § 41-204 and 40 C.F.R. §§ 63.118(c)(1)&(2)].
 - c. Records of MeCl₂ storage vessel dimensions and capacity [8 CAR § 41-204 and 40 C.F.R. § 63.123(a)].
76. The permittee shall submit reports of compliance status and process changes as outlined in paragraphs 63.117(b), 63.118(g), and 63.118(h). [8 CAR § 41-204 and 40 C.F.R. § 63 Subpart G]
77. All equipment in MeCl₂ service shall comply with the requirements of the National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks, as outlined in paragraphs 63.160 through 63.182. These sections specify standards for pumps in light liquid service, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves in gas/vapor service and light liquid service. [8 CAR § 41-204 and 40 C.F.R. § 63 Subpart H]
78. The permittee shall follow the recordkeeping and reporting procedures for equipment leaks as outlined in paragraphs 63.181 and 63.182. [8 CAR § 41-204 and 40 C.F.R. § 63 Subpart H]
79. RESERVED
80. The control equipment maintained on source SN-AB-15 shall be comprised of a minimum of two carbon adsorption units, each having a 2' diameter and a 4.7' column length. The carbon shall be regenerated once per 12 hours of operating time. Only steam shall be used to regenerate the carbon. Upon completion of regeneration, only air shall be used to cool the carbon. The carbon shall be replaced as needed, but no less frequently than every 10,220 hours of actual source operation. [8 CAR § 41-605, Ark.

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Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]

81. Records of all carbon regeneration and replacement shall be maintained, updated as performed, and made available to Department personnel upon request. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]

NC-12 Flame Retardant Process

Flame retardant products are produced by reacting diphenylethane with bromine. This reaction forms hydrogen bromide as a by-product. The hydrogen bromide is purified and stored under pressure or absorbed in water to make hydrobromic acid. The flame retardant product is a solid. Emissions from the product dryer will be routed through SN-DB-19 (product dryer scrubber). The product is then transferred to the NC-15 unit for packaging.

Back-up Scrubber (SN-DB-17) is used during periods when Vent Scrubber (SN-DB-01) is down. The Back-up Scrubber controls emissions resulting from the nitrogen purge system at the NC-12 HBr compression equip

Compliance with permitted emission rates shall be demonstrated through stack testing, parametric monitoring, and record keeping requirements.

Specific Conditions

82. The permittee shall not exceed the emission rates set forth in the following table. [8 CAR § 41-401 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
DB-01	Vent Scrubber	VOC	0.8	3.5
DB-02	Raw Material Storage Tank	VOC	0.1	0.5
DB-04	Product Dryer Filter 2.00 MMBtu/hr	Removed upon permit issuance		
DB-05	Product Vent Filter Silo Baghouse	Out of service		
DB-06	Product Vent Filter Silo Baghouse	Out of service		
DB-07	Raw Material Storage Tank	VOC	0.1	0.5
DB-08	Product Vent Filter	Out of service		
DB-16	NC-12 Fugitive Emissions	VOC	1.5	6.4
DB-18	Receiving Baghouse	Removed upon permit issuance		
DB-19	Product Dryer Scrubber	PM ₁₀	1.0**	4.3**
		SO ₂	0.2**	0.7**
		VOC	1.0**	4.2**
		CO	3.6**	15.8**
		NO _x	1.6**	7.0**
DB-20	DPE Storage Tank, D-2515 <i>During NC-15 Production Alt. Op Scenario</i>	VOC	0.9	4.0
DB-22	NC-12 Central Vacuum System	Removed upon permit issuance		

* Operation of SN-DB-19 is only required for NC-15 production.

** When using the NC-12 unit to produce NC-15 product the gases are passed to DB-19 for Br₂ + Hbr control and secondary benefit additional control for PM/PM₁₀.

83. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [8 CAR § 40-701 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
DB-01	Vent Scrubber	Br ₂ +HBr	0.44	1.93
		Total HAP	N/A	0.44
		HCl	N/A	0.44
DB-04	Product Dryer Filter 2.00 MMBtu/hr	Removed upon permit issuance		
DB-05	Product Vent Filter Silo Baghouse	Out of service		
DB-06	Product Vent Filter Silo Baghouse	Out of service		
DB-07	Raw Material Storage Tank	Total HAP	N/A	0.50
		HCl	N/A	0.50
DB-08	Product Vent Filter	Out of service		
DB-16	NC-12 Fugitive Emissions	Br ₂	1.07	4.30
		HBr	1.39	6.08
DB-17	Back-up Water Scrubber	Br ₂ +HBr	0.10	0.44
DB-18	Receiving Baghouse	Removed upon permit issuance		
DB-19	Product Dryer Scrubber	PM	1.0	4.3
		Br ₂ +HBr	1.00	4.38
DB-22	NC-12 Central Vacuum System	Removed upon permit issuance		

* Operation of SN-DB-19 is only required for NC-15 production.

84. The following sources shall not exceed 5% opacity: SN-DB-01, SN-DB-17, and SN-DB-19. The permittee shall comply with Plantwide Condition #11 for opacity readings. [8 CAR § 40-401 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
85. The permittee shall demonstrate compliance with the HCl limits for SN-DB-07 by maintaining records of the concentration of water in each transfer of DPO and calculating on a monthly basis a twelve month rolling total of HCl generated. These calculations shall be completed by the 15th of the following month, shall be kept on-site, and shall be made available to Department personnel upon request. The permittee may at their discretion conduct the sampling or rely upon other records such as bills of lading that show the concentration of water in the DPO received. [8 CAR § 41-204 and 40 C.F.R. § 63.2465(b)]
86. The permittee shall test the following sources for the listed compounds in calendar year 2017 for SN-DB-01 and SN-DB-19 and before the end of each fifth calendar year thereafter. Test methods are listed in the following table. [8 CAR § 40-902 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

Source	Compound	EPA Reference Method	Test Criteria / Operating Scenario
SN-DB-01	Br ₂	26A	NC-12 or NC-15 Production
SN-DB-19	Br ₂	26A	NC-12 or NC-15 Production

Alternative test methods may be submitted to the Compliance Inspector Supervisor at least 30 days in advance of planned testing. These methods must receive Department approval prior to the testing event.

87. The permittee shall perform a visual inspection of the pumps driving the scrubber media at SN-DB-01 at least once per day, to ensure that sufficient flow is maintained. The permittee shall also perform visual inspection of the pumps driving the scrubber media at SN-DB-19 at least once per day for days when SN-DB-19 is in operation, to ensure that sufficient flow is maintained. Inspection results shall be recorded in a log. These records shall be kept on-site and made available to Department personnel upon request. The visual inspection method shall be confirmed by the most recent satisfactory stack test for purposes of continuous compliance until the next test is performed. [8 CAR § 40-903 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
88. The permittee shall measure and record the caustic concentration of the scrubber media used for SN-DB-01 at least once per twelve-hour shift. The caustic shall be replaced when the concentration falls below 5% strength. [8 CAR § 41-603, 40 C.F.R. § 52 Subpart E, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
89. The permittee shall perform monthly calculations for worst-case lb/hr and ton/month emissions of Br₂ and HBr at SN-DB-19. These calculations shall be based upon most recent available test data. These calculations shall be completed by the 15th day of the following month, and shall be kept on-site and made available to Department personnel upon request. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
90. The permittee shall be limited to drying 150 tanks of diphenyl oxide (DPO, stored at SN-DB-07) per rolling 12-month period. Records shall be maintained to demonstrate compliance with this limit. The records shall be updated weekly, maintained on-site, and made available to Department personnel upon request. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

NC-14 Flame Retardant Production

Multiple alternate operating scenarios exist for the NC-14 process. The following table lists these additional operating scenarios. Compliance with permitted emission rates in the NC-14 process area shall be demonstrated through stack testing, parametric monitoring, and record keeping requirements. This unit no longer produces MeBr.

Alternate Operating Scenario	Reference Page
NC-22 Production	87
95ND141/Stabrom 909 Production*	106

* Specific Condition #105 applies to this production scenario.

Specific Conditions

91. The permittee shall not exceed the emission rates set forth in the following table. Compliance with this condition shall be demonstrated by the ADMA product being stored having a molecular weight greater than or equal to 157.3 lb/lb mol. Documentation of ADMA material type and molecular weight shall be kept on-site and made available to Department personnel upon request. [8 CAR § 41-401 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
TB-01	ADMA Storage Tank	VOC	0.3	1.2

92. RESERVED
93. RESERVED
94. RESERVED
95. RESERVED
96. RESERVED
97. RESERVED
98. RESERVED
99. RESERVED
100. RESERVED
101. RESERVED
102. RESERVED
103. RESERVED
104. RESERVED
105. The following sources shall not exceed 5% opacity: SN-TB-05, SN-TB-08, SN-TB-14, SN-TB-44, and TB-48. The permittee shall comply with Plantwide Condition #11 for opacity readings. [8 CAR § 40-401 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
106. RESERVED

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107. RESERVED
108. RESERVED
109. RESERVED
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125. RESERVED
126. RESERVED
127. RESERVED
128. RESERVED
129. RESERVED
130. RESERVED
131. RESERVED
132. RESERVED
133. RESERVED
134. RESERVED
135. RESERVED
136. RESERVED
137. RESERVED

NC-15 Flame Retardant Process

Bromine, raw material, and catalyst are added to the reactor. The reaction proceeds with external cooling to completion. Hydrogen bromide gas is produced and exits the reactor through a condenser. Bromine carried by the gas is returned to the reactor. The hydrogen bromide (which is not condensed) carries on to a recovery system and is recycled to another plant. Any HBr which is not recovered is neutralized in a caustic scrubber (SN-15-12).

After the reaction is complete, any excess bromine is stripped or neutralized. The stripped bromine is dried and recycled to the process in future batches. Solvent may be added to aid processing.

The stripped or neutralized product is isolated from the solvent or aqueous mixture by various means, such as centrifugation and distillation. The product (along with product from NC-12) is dried, ground, and packaged to specifications. If solvent was used in the process, it is recovered and recycled. Tank, T-9962, which vents at SN-15-18, is used to store byproduct diphenyl ethane (DPE) and heavy organics.

During the NC-15 Area Scrubber (SN-15-12) Testing Scenario, SN-15-12 will be tested while using fresh water instead of a caustic solution in the final spray step.

Compliance with permitted emission rates shall be demonstrated through stack testing, parametric monitoring, and record keeping requirements.

Specific Conditions

138. The permittee shall not exceed the emission rates set forth in the following table. [8 CAR § 41-401 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
15-12	NC-15 Area Scrubber	PM ₁₀	3.1	13.6
		SO ₂	0.1	0.5
		VOC	2.2	9.7
		CO	0.4	1.5
		NO _x	0.4	1.7
15-13	Raw Material Weigh Tanks D-9965, D-9966	VOC	0.8	3.5
15-14A	Natural Gas Process Heater 2.15 MMBtu/hr	PM ₁₀	0.1	0.1
		SO ₂	0.1	0.1
		VOC	0.1	0.1
		CO	0.2	0.8
		NO _x	0.3	1.0
15-14B	Natural Gas Process Heater 2.15 MMBtu/hr	PM ₁₀	0.1	0.1
		SO ₂	0.1	0.1
		VOC	0.1	0.1
		CO	0.2	0.8
		NO _x	0.3	1.0
15-15	Fugitive Emissions	VOC	1.0	4.4

SN-#	Description	Pollutant	lb/hr	tpy
15-16	Pollution Control: Dust Scrubber J-99601 CD-15-16	PM ₁₀	1.2	5.3
15-17	Rail Car Vent	VOC	0.7	3.1
15-18	DPE Byproduct/Heavy Organics Storage Tank (serving NC-21)	VOC	1.1	0.4
15-19	NC-15 Central Vacuum System	Removed upon permit issuance		
15-20	DPE Byproduct/Heavy Organics Truck Loading	VOC	6.9	0.4
15-21	Natural Gas Process Heater 2.15 MMBtu/hr	PM ₁₀	0.1	0.5
		SO ₂	0.1	0.1
		VOC	0.1	0.4
		CO	1.2	5.0
		NO _x	1.4	6.0

139. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [8 CAR § 40-701 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
15-02	Process Scrubber	Br ₂	0.10	0.44
		HBr	0.10	0.44
15-12	NC-15 Area Scrubber	PM	3.1	13.6
		Br ₂ +HBr	1.32	5.79
		Benzene	0.01	0.01
		Total HAP	N/A	0.04
15-14A	Natural Gas Process Heater 1.0 MMBtu/hr	PM	0.1	0.1
		Total HAP	N/A	0.02
15-14B	Natural Gas Process Heater 1.0 MMBtu/hr	PM	0.1	0.1
		Total HAP	N/A	0.02
15-15	Fugitive Emissions	Br ₂	1.13	4.95
		HBr	0.18	0.75
		Total HAP	N/A	0.09
		HCl	N/A	0.09
15-16	Pollution Control: Dust Scrubber J-99601 CD-15-16	PM	1.2	5.3
15-19	NC-15 Central Vacuum System	Removed upon permit issuance		
15-21	Natural Gas Process Heater 2.15 MMBtu/hr	PM	0.1	0.1
		Benzene	0.01	0.01
		Total HAP	N/A	0.02

140. The following sources shall not exceed 5% opacity: SN-15-02, SN-15-12, SN-15-14A, SN-15-14B, SN-15-16 and SN-15-21. The permittee shall comply with Plantwide Condition #11 for opacity readings. [8 CAR § 40-401 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

141. The permittee shall operate a bromine monitor on SN-15-02 and SN-15-12 at all times when the units are in operation. This monitor shall be maintained and operated in accordance with the latest revised version of the "Preventative Maintenance Plan for the Emission Control Devices." Bromine emission records and a copy of the latest revised version of the Maintenance Plan shall be maintained on-site and made available to Department personnel upon request. Specific Conditions #145a and #145b may take the place of this requirement. [8 CAR § 40-903 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
142. The permittee shall conduct stack testing for the following compounds in calendar year 2018, and before the end of each fifth calendar year thereafter. Test methods are listed in the right-hand column of the table. [8 CAR § 41-602 and 40 C.F.R. § 52 Subpart E]

Source	Compound	EPA Reference Method
SN-15-12	VOC	18 or 25A
SN-15-12	PM/PM ₁₀	5
SN-15-16	PM/PM ₁₀	5

143. The permittee shall conduct stack testing for bromine at SN-15-12 in calendar year 2018, and before the end of each fifth calendar year thereafter. The testing shall be conducted using EPA Reference Method 26A. [8 CAR § 40-902 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

Source	Compound	EPA Reference Method
SN-15-12	Br ₂	26A

Alternative test methods may be submitted to the Compliance Inspector Supervisor at least 30 days in advance of planned testing. These methods must receive Department approval prior to the testing event.

144. RESERVED
145. The permittee shall maintain weekly production records of DPE product generated in the NC-21 production unit. A factor of 0.250 lb heavy ends byproduct per lb DPE product shall be applied to the recorded DPE product value. The source SN-15-18 shall be deemed in compliance whenever the resulting calculated byproduct flow does not exceed 140,000 lbs/week. The records (including byproduct calculation) shall be kept on-site and made available to Department personnel upon request. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]

Alternate Scenario - Compliance with Bromine emission limits during loss of Bromine Monitor
The following two conditions may be implemented instead of Specific Condition #141.

- 145a. The permittee shall perform a visual inspection to confirm pump activity of the pumps driving the scrubber media at SN-15-02 and SN-15-12 every three hours, to ensure that sufficient flow is maintained. Inspection results shall be recorded in a log. These records shall be kept on-site and made available to Department personnel upon request. [8 CAR § 40-903 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

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- 145b. The permittee shall measure and record the caustic concentration of the scrubber media used at least once per twelve-hour shift at SN-15-02. The caustic shall be replaced when the concentration falls below 5% strength. [8 CAR § 41-603, 40 C.F.R. § 52 Subpart E, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

NC-17 Flame Retardant Process

Tetrabromophthalic anhydride (TBPA), ethylene-bis-tetrabromophthalimide (EBTBP), and a purified (higher grade) of EBTBP are made at the South Plant in what is known as the NC-17 Production Unit (formerly NC-16).

TBPA and EBTBP are marketed and sold as flame retardants. Additionally, TBPA is used as a raw material in the production of EBTBP.

Tetrabromophthalic Anhydride (TBPA)

TBPA is produced in a batch reaction process by brominating phthalic anhydride in the presence of sulfuric acid and sulfur trioxide. The final product, a solid, is centrifuged, dried, and packaged for shipment or transported for production of EBTBP. Dust generated by these operations is controlled by fabric filters (SN-16-10 and SN-16-29). Vapors generated are controlled by scrubbers (SN-16-01, SN-16-02 and SN-16-13). Molten phthalic anhydride is stored in the Molten PA Storage Tank (SN-16-31).

Ethylene-bis-tetrabromophthalimide (EBTBP)

EBTBP and its higher-grade equivalent are produced by reacting tetrabromophthalic anhydride with ethylene diamine in the presence of an acid. This reaction forms a solid complex, which is separated from the liquid, washed, and then dried. Emissions generated by the EBTBP process are controlled by scrubbers (SN-16-05, SN-16-06, and SN-16-25), by baghouses (SN-16-07, SN-16-08, SN-16-09, and SN-16-12), or by carbon drums (SN-16-14 and SN-16-15). The higher-grade EBTBP process is equipped with a vent gas oxidizer (SN-16-18) and a solvent recovery unit to control VOC emissions, and with two baghouses to control particulates (SN-16-19 and SN-16-22).

During the alternate testing scenario for the Vent Gas Oxidizer (SN-16-18), all normal process operations at the NC-17 Unit will be shutdown except for the VGO, which will be fed a known mass feed rate in a synthetic vent stream in order to simulate worst-case inlet pollutant loading.

Compliance with permitted emission rates shall be demonstrated through stack testing, parametric monitoring, and record keeping requirements.

Specific Conditions

146. The permittee shall not exceed the emission rates set forth in the following table. [8 CAR § 41-401 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
16-01	TBPA Production: Packed Scrubber	PM ₁₀	0.1	0.5
		SO ₂	0.5	2.2
16-02	TBPA Production: Off Gas Scrubber	SO ₂	0.4	1.8
16-05	EBTBP Production: Packed Scrubber	VOC	0.1	0.5
16-06	EBTBP Production: Converter Scrubber	PM ₁₀	0.4	1.8
		VOC	0.1	0.5
16-07	EBTBP Production: In-Process Storage Silo Vent Filter	PM ₁₀	0.3	1.4

SN-#	Description	Pollutant	lb/hr	tpy
16-08	EBTBP Production: Product Transfer and Storage Fabric Filter	PM ₁₀	0.3	1.4
16-10	Product Transfer and Storage Fabric Filter	PM ₁₀	0.5	2.2
		SO ₂	0.1	0.5
16-12	TBPA Weigh Hopper Filter	PM ₁₀	0.1	0.5
16-13	TBPA Production: Vacuum Pump	SO ₂	0.1	0.5
16-14	Ethylene Diamine Storage Tank	VOC	0.1	0.1
16-15	Propionic Acid Storage Tank	VOC	0.1	0.1
16-16	TBPA Neutralization Tank	SO ₂	0.1	0.5
16-17	Ethylene Glycol Tank	VOC	0.1	0.1
16-18	Vent Gas Oxidizer 6.47 MMBtu/hr	PM ₁₀	0.1	0.3
		SO ₂	0.1	0.4
		VOC	0.7	2.9
		CO	0.9	3.8
		NO _x	0.7	2.8
16-19	Charge Hopper Vent	PM ₁₀	0.3	1.4
		SO ₂	0.1	0.5
16-20	Heat Exchange Heater 4.4 MMBTU/hr	PM ₁₀	0.1	0.2
		SO ₂	0.1	0.1
		VOC	0.1	0.2
		CO	0.4	1.7
		NO _x	0.5	2.0
16-21	Product Storage Hopper	PM ₁₀	0.2	0.9
		VOC	0.4	1.8
16-22	By-Product Powder Packaging	PM ₁₀	0.1	0.1
		VOC	0.1	0.1
16-23	NC-17 Operation: Fugitive Emissions	SO ₂	0.9	3.9
		VOC	6.4	27.8
16-24	Raw Material Unloading, Brinks (Limited Hours of Operation)	Removed upon permit issuance.		
16-28	TBPA Neutralization Tank	SO ₂	0.1	0.5
16-29	Packaging Vent	PM ₁₀	0.3	1.4
		SO ₂	0.1	0.5
16-30	Indirect Fired Heater 1.2 MMBtu/hr	PM ₁₀	0.1	0.1
		SO ₂	0.1	0.1
		VOC	0.1	0.1
		CO	0.1	0.5
		NO _x	0.2	0.6
16-31	Molten Phthalic Anhydride Storage Tank	VOC	3.8	0.8
16-33	Molten Sulfur Tank T-9365	Removed upon permit issuance.		

147. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [8 CAR § 40-701 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
16-01	TBPA Production: Packed Scrubber	PM Total HAP	0.1 N/A	0.5 0.44
16-02	TBPA Production: Off Gas Scrubber	Br ₂	0.10	0.44
16-06	EBTBP Production: Converter Scrubber	PM	0.4	1.8
16-07	EBTBP Production: In-Process Storage Silo Vent Filter	PM	0.3	1.4
16-08	EBTBP Production: Product Transfer and Storage Fabric Filter	PM	0.3	1.4
16-10	Product Transfer and Storage Fabric Filter	PM	0.5	2.2
16-12	TBPA Weigh Hopper Filter	PM	0.1	0.5
16-17	Ethylene Glycol Tank	Total HAP	N/A	0.09
16-18	Vent Gas Oxidizer 6.47 MMBtu/hr	PM Benzene Total HAP	0.1 0.01 N/A	0.3 0.01 2.28
16-19	Charge Hopper Vent	PM	0.3	1.4
16-20	Heat Exchange Heater 4.4 MMBtu/hr	PM Benzene Total HAP	0.1 0.01 N/A	0.2 0.01 0.04
16-21	Product Storage Hopper	PM Total HAP	0.2 N/A	0.9 1.23
16-22	By-Product Powder Packaging	PM Total HAP	0.1 N/A	0.1 0.04
16-23	NC-17 Operation: Fugitive Emissions	Br ₂ H ₂ SO ₄ Total HAP	0.62 0.05 N/A	2.72 0.22 3.38
16-29	Packaging Vent	PM	0.3	1.4
16-30	Indirect Fired Heater 1.2 MMBtu/hr	PM Benzene Total HAP	0.1 0.01 N/A	0.1 0.01 0.01
16-31	Molten Phthalic Anhydride Storage Tank	Total HAP	N/A	0.80
16-33	Molten Sulfur Tank T-9365	Removed upon permit issuance.		

148. The following sources shall not exceed 5% opacity: SN-16-01, SN-16-02, SN-16-06 through SN-16-08, SN-16-10, SN-16-12, SN-16-18 through SN-16-21, SN-16-22, SN-16-29, and SN-16-30. The permittee shall comply with Plantwide Condition #11 for opacity readings. [8 CAR § 40-401 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

149. The permittee shall monitor the scrubber fluid flow of the following sources on a three-hour basis. The recorded flow rates shall be made accessible for Department inspection upon request. [8 CAR § 41-603, 40 C.F.R. § 52 Subpart E, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

Source	Minimum Scrubbing Fluid Flow (gpm)
SN-16-01	6
SN-16-02	60
SN-16-05	4
SN-16-06	6
SN-16-13	4

150. The permittee shall replace the carbon canisters at SN-16-14, SN-16-15, and SN-16-22 at least once per year. A log of replacement dates (or notation on the drum) shall be maintained on-site and made available to Department personnel upon request. [8 CAR § 41-603, 40 C.F.R. § 52 Subpart E, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
151. The permittee shall measure and record the pH of the scrubber media used for SN-16-01, SN-16-02, SN-16-05, and SN-16-06 every three hours. The caustic pH records shall be kept on-site and made available to Department personnel upon request. The caustic pH corresponding to the most recent satisfactory test event shall be established as the minimum for purposes of continuous compliance until the next test is performed. [8 CAR § 41-603, 40 C.F.R. § 52 Subpart E, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
152. RESERVED
153. RESERVED
154. Only one of the sources SN-16-19 and SN-16-29 shall be operated at any given time. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
155. The combustion zone temperature of the Vent Gas Oxidizer, SN-16-18, shall be maintained at a minimum of 1000 °F. Compliance with this condition shall be facilitated by maintaining a log of automatic shutdowns by the temperature interlock (block valve) system. Each log entry shall include an operator's statement reporting whether the interlock system performed as designed. Additionally, the permittee shall review the logs each six months and certify that the interlock has functioned correctly during that period. The running logs and 6-month certification shall be kept on-site and made available to Department personnel upon request. [8 CAR § 41-603, 40 C.F.R. § 52 Subpart E, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
156. The permittee shall maintain readily accessible records of the dimensions and capacity of the phthalic anhydride storage vessel, as required by §63.123(a). [8 CAR § 41-204 and 40 C.F.R. § 63 Subpart G]
157. All equipment in phthalic anhydride service must comply with the protocol for equipment leaks as outlined in Section 63.169(a) through (d). (This regulation outlines monitoring

- and maintenance standards for pumps, valves, connectors, and agitators in heavy liquid service; for instrumentation systems; and for pressure relief devices in liquid service). [8 CAR § 41-204 and 40 C.F.R. § 63 Subpart H]
158. The permittee shall calculate emissions from SN-16-16 every 12 months. Pound per hour emissions shall be based upon worst-case conditions, and ton per year emissions upon a 12-month rolling period or assumed continuous usage. A copy of the calculations shall be kept on-site and made available to Department personnel upon request. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
 159. The permittee shall calculate VOC emissions from SN-16-21 every 12 months. Pound per hour emissions shall be based upon worst-case conditions, and ton per year emissions upon a 12-month rolling period or assumed continuous usage. A copy of the calculations shall be kept on-site and made available to Department personnel upon request. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]
 160. The permittee shall conduct stack testing for SO₂ at SN-16-01 in 2002 and SN-16-02 in 2003, in the first calendar year it operates more than 25% per Plantwide Condition #19. A proposed test method shall be submitted to the Compliance Inspector Supervisor at least 30 days in advance of planned testing. The method must receive Department approval prior to the testing event. [8 CAR § 41-602 and 40 C.F.R. § 52 Subpart E]
 161. The permittee shall conduct stack testing for Br₂ at SN-16-02 in calendar year 2017 and before the end of each fifth calendar year thereafter. Testing shall be performed using EPA Reference Method 26A. Alternative test methods may be submitted to the Compliance Inspector Supervisor at least 30 days in advance of planned testing. These methods must receive Department approval prior to the testing event. [8 CAR § 40-902 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
 162. The permittee shall not exceed a throughput of 18.25 million pounds per twelve consecutive months at PA Tank (T-9340) (SN-16-31). [8 CAR § 41-605, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]
 163. The permittee shall maintain monthly records demonstrating compliance with Specific Condition #162. Records shall be updated by the 15th day following the month to which the records pertain, made available to Department personnel upon request, and submitted in accordance with General Provision 7. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]
 164. For SN-16-31, the permittee shall maintain a record of the VOL currently stored, including a description of the VOL stored, the date when the VOL was first stored in SN-16-31, and the maximum true vapor pressure of that VOL. The permittee shall keep copies of records required by this condition for at least 5 years. [8 CAR 41-204 and 40 C.F.R. §§ 60.115(a) & (c)]

Boilers

There are two boilers (SN-BH-01 and SN-BH-02) at the Albemarle South facility. Each boiler has the capacity to produce 200,000 pounds of 225 psig steam per hour. This is equivalent to a heat input of 340 million BTU per hour. Albemarle also has the ability to bring in up to two rental boilers with a capacity of up to 100 MMBtu/hr (SN-BH-03 and SN-BH-04). All of the boilers burn natural gas, which has been treated either in the sulfinol or the MDEA plants. They may also burn pipeline quality natural gas. They are not permitted to burn any other fuel.

Emissions generated by the four boilers are permitted under a single bubble. Compliance with permitted emission rates shall be demonstrated through stack testing, parametric monitoring, and record keeping requirements.

Specific Conditions

165. The permittee shall not exceed the emission rates set forth in the following table. [8 CAR § 41-401 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
BH-01	#1 Boiler 340 MMBtu/hr	PM ₁₀	2.6	-
		SO ₂	-	-
		VOC	1.9	-
		CO	13.6	-
		NO _x	47.6	-
BH-02	#2 Boiler 340 MMBtu/hr	PM ₁₀	2.6	-
		SO ₂	-	-
		VOC	1.9	-
		CO	13.6	-
		NO _x	47.6	-
BH-03	Rental Boiler #1 ≤100 MMBtu/hr	PM ₁₀	0.8	-
		SO ₂	-	-
		VOC	0.6	-
		CO	3.7	-
		NO _x	3.7	-
BH-04	Rental Boiler #2 ≤100 MMBtu/hr	PM ₁₀	0.8	-
		SO ₂	-	-
		VOC	0.6	-
		CO	3.7	-
		NO _x	3.7	-
BH-01 BH-02 BH-03 BH-04	Combined Boiler Emissions	PM ₁₀	-	22.7
		SO ₂	5.6	24.6
		VOC	-	16.4
		CO	-	119.2
		NO _x	-	417.0

166. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [8 CAR § 40-701 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
BH-01	#1 Boiler 340 MMBtu/hr	PM	3.4	-
		Total HAP	N/A	-
BH-02	#2 Boiler 340 MMBtu/hr	PM	3.4	-
		Total HAP	N/A	-
BH-03	Rental Boiler #1 ≤100 MMBtu/hr	PM	0.8	-
		Total HAP	N/A	-
BH-04	Rental Boiler #2 ≤100 MMBtu/hr	PM	0.8	-
		Total HAP	N/A	-
BH-01 BH-02 BH-03 BH-04	Combined Boiler Emissions	PM Total HAP	- N/A	29.8 3.82

167. The following sources shall not exceed 5% opacity: SN-BH-01, SN-BH-02, SN-BH-03 and SN-BH-04. The permittee shall comply with Plantwide Condition #11 for opacity readings. [8 CAR § 40-401 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
168. The permittee may only burn the following fuels in the boilers: pipeline quality natural gas and process gas that has been treated by the sulfinol and MDEA plants. [8 CAR § 41-605, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]
169. The permittee shall monitor and record the H₂S concentration and the combined gas flow to the boilers at least once every six hours. The measured concentration shall be used to determine the mass emission rate of SO₂ from the boilers assuming a 1:1 molar ratio of sulfur conversion at the boilers. A rolling 30-day average H₂S concentration may be used to calculate the lb/hr emissions for compliance demonstration with the 5.60 lb/hr emission limit of Specific Condition #165. A rolling 12-month total shall be used to calculate tpy for compliance demonstration with the combined 24.53 ton/yr value of Specific Condition #165. A shorter averaging period may be used in lieu of the rolling 30-day average (e.g., if all three-hour rolling averages as currently calculated are below the emission limit, a rolling 30-day average is not required).
- All records shall be updated by the 15th day following the month to which the records pertain. Records shall be kept on-site, made available to Department personnel, and otherwise kept in accordance with General Provision #7. [8 CAR § 41-603, 40 C.F.R. § 52 Subpart E, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
170. The permittee shall perform stack testing on SN-BH-01 and SN-BH-02 in 2020 and before the end of each fifth calendar year thereafter. The testing shall be performed while each boiler is operating within 10% of its design capacity. Hourly test results shall be combined for each pollutant to determine compliance with the emission bubble. Compounds and applicable test methods are listed below. [8 CAR § 41-602 and 40 C.F.R. § 52 Subpart E]

Source	Compound	EPA Reference Method
BH-01, BH-02	SO ₂ *	6C
BH-01, BH-02	VOC	18 or 25A
BH-01, BH-02	CO	10
BH-01, BH-02	NO _x	7E

* If sulfur dioxide testing is performed during combustion of sweetened gas, 5.6 lb/hr shall be the maximum compliant value for each boiler, instead of 2.8. However, 5.6 lb/hr is also the maximum compliant value for simultaneous emissions from both boilers.

- 170a. Any rental boiler brought on site must have a maximum heat input capacity of 100 MMBtu/hr or less and be natural gas fired. [8 CAR § 41-801, 40 C.F.R. § 52 Subpart E, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]
- 170b. For any units brought on-site that are constructed or modified after June 9, 1989, the permittee shall comply with all applicable provisions of 40 C.F.R. Part 60, Subpart A - General Provisions and Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. Applicable provisions of Subpart Dc include, but are not limited to, the following: [8 CAR § 41-204 and 40 C.F.R. § 60 Subpart Dc]
- The owner or operator shall submit notification of the date of construction or reconstruction, anticipated startup, and actual startup. This notification shall include the design heat input capacity of the boiler and identification of fuels (natural gas only) to be combusted in the affected facility. [8 CAR § 41-204 and 40 C.F.R. § 60.48c(a)]
 - Records of the amounts of fuel combusted each day must be kept for each one of SN-BH-03 and SN-BH-04. These records shall be kept on site for two years following the date of such records. [8 CAR § 41-204, 40 C.F.R. §§ 60.48c(g) and (i)]
- 170c. Any boiler installed under sources BH-03 and BH-04 must meet the requirements of a Temporary Boiler as defined in 40 C.F.R. § 63.7570. Records verifying the temporary status of BH-03 and BH-04 shall be kept onsite and made available to Department personnel upon request. [8 CAR § 41-605, 8 CAR § 41-204, 40 C.F.R. §§ 60.48c(g) and (i), and 40 C.F.R. § 63.7570]
- Temporary boiler* means any gaseous or liquid fuel boiler or process heater that is designed to, and is capable of, being carried or moved from one location to another by means of, for example, wheels, skids, carrying handles, dollies, trailers, or platforms. A boiler or process heater is not a temporary boiler or process heater if any one of the following conditions exists:
 - The equipment is attached to a foundation
 - The boiler or process heater or a replacement remains at a location within the facility and performs the same or similar function for more than 12 consecutive months, unless the regulatory agency approves an extension. An extension may be granted by the regulating agency upon petition by the owner or operator of a unit specifying the basis for such a request. Any

temporary boiler or process heater that replaces a temporary boiler or process heater at a location and performs the same or similar function will be included in calculating the consecutive time period.

- iii. The equipment is located at a seasonal facility and operates during the full annual operating period of the seasonal facility, remains at the facility for at least 2 years, and operates at that facility for at least 3 months each year.
 - iv. The equipment is moved from one location to another within the facility but continues to perform the same or similar function and serve the same electricity, process heat, steam, and/or hot water system in an attempt to circumvent the residence time requirements of this definition.
- 170d. The permittee shall not exceed the following specific emission factor limits for any boiler installed under sources BH-03 and BH-04 [8 CAR § 41-401 and 40 C.F.R. § 52 Subpart E]

Pollutant	Emission Factor (lb/MMscf)
CO	37.0
NO _x	37.0

- 170e. The permittee shall maintain records demonstrating compliance with Specific Condition #170d. These records shall be kept onsite and made available to department personnel upon request. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]

NC-21 Flame Retardant Process

Benzene, ethylene dichloride, and catalyst are added to the reactor. The reaction proceeds, with external heating to completion. Hydrogen chloride gas is produced, and exits the reactor. Hydrogen chloride is neutralized in a caustic scrubber which in turn vents through the incinerator (SN-21-01). Benzene emissions are minimized by vent gas condensers. The condensed gas outlet is routed to the incinerator.

After the reaction is complete, the reaction mass is neutralized. The product is isolated by distillation, and any excess benzene is recovered and recycled. The isolated product is stored in a liquid state, and used for internal and external markets.

All tank vents are routed to the incinerator. All storage vessels are operated under pressure, to minimize emissions. Tank truck loading and unloading operations are performed using closed domes. DPE Heavies (SN-15-18 and SN-15-20) loading and storage are permitted under the NC-15 Unit.

Benzene is recovered from the co-product HCl stream in a distillation column. After being purified, the co-product HCl stream is routed to intermediate storage where it can be loaded out via tank truck. Benzene recovered in the distillation column is condensed and combined with other recovered Benzene streams for reuse in the NC-21 process unit.

During the alternate testing scenario for the Vent Gas Incinerator (SN-21-01), all normal process operations at the NC-21 Unit will be shutdown except for the vent gas incinerator, which will be fed a known mass feed rate in a synthetic vent stream in order to simulate worst-case inlet pollutant loading.

Compliance with permitted emission rates shall be demonstrated through parametric monitoring and record keeping requirements.

Specific Conditions

171. The permittee shall not exceed the emission rates set forth in the following table. [8 CAR § 41-401 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
21-01	Emission Control: Vent Gas Incinerator (FL-3671) (CD-21-01) 5.02 MMBtu/hr	PM ₁₀	0.1	0.5
		SO ₂	0.1	0.1
		VOC	1.8	5.3
		CO	5.0	21.9
		NO _x	0.5	2.2
21-02	NC-21 Fugitive Emissions	VOC	4.8	21.0
21-03	Wastewater Effluent	VOC	0.1	0.1
21-05	DPE Hot Oil Furnace 13.5 MMBtu/hr	PM ₁₀	0.1	0.5
		SO ₂	0.1	0.1
		VOC	0.1	0.4
		CO	1.2	5.0
		NO _x	1.4	6.0
15-18	DPE Byproduct/Heavy Organics Storage Tank (serving NC-21)	VOC	See NC-15	See NC-15

SN-#	Description	Pollutant	lb/hr	tpy
15-20	DPE Byproduct/Heavy Organics Truck Loading	VOC	See NC-15	See NC-15

172. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [8 CAR § 40-701 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
21-01	Emission Control: Vent Gas Incinerator (FL- 3671) (CD-21-01) 5.02 MMBtu/hr	PM	0.1	0.5
		Total HAP	N/A	6.88
		Benzene	1.71	5.24
		HCl	N/A	1.54
21-02	NC-21 Fugitive Emissions	Total HAP	N/A	9.10
		Benzene	1.37	6.02
		HCl	N/A	0.83
		Methanol	0.34	1.50
21-03	Wastewater Effluent	Total HAP	N/A	0.01
		Benzene	0.01	0.01
21-05	DPE Hot Oil Furnace 13.5 MMBtu/hr	PM	0.1	0.5
		Benzene	0.01	0.01
		Total HAP	N/A	0.12

173. SN-21-01 and SN-21-05 shall not exceed 5% opacity. The permittee shall comply with Plantwide Condition #11 for opacity readings. [8 CAR § 40-401 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
174. The permittee is subject to all applicable provisions of the National Emission Standard for Organic Hazardous Air Pollutants for Equipment Leaks. [8 CAR § 41-204 and 40 C.F.R. § 63 Subpart H]
175. The permittee is subject to all applicable provisions of the National Emission Standard for Equipment Leaks (Fugitive Emission Sources). This includes, but is not limited to, the reporting requirements of §61.247 and the performance standards contained in §61.242. As allowed in the MON MACT, the permittee has chosen to comply with the applicable requirements under §63.2535 (k). [8 CAR § 41-204 and 40 C.F.R. § 63 Subpart FFFF]
176. The permittee is subject to all applicable provisions of the National Emission Standard for Benzene Waste Operations. The current annual benzene waste quantity for the facility is equal to or greater than 10 Mg per year. If the total annual benzene waste quantity becomes lower, between 1 Mg/yr and 10 Mg/yr, the facility will only be subject to the record keeping requirements of §61.356(b) and the reporting requirements of §61.357(c). Because the current quantity is greater than 10 Mg/yr, §61.342(c) (alternate options §61.342(d) and §61.342(e)), §61.356 and §61.357 are applicable to this process unit. [8 CAR § 41-204 and 40 C.F.R. § 61 Subpart FF]
177. RESERVED

178. The permittee shall calculate all emissions from the Vent Gas Incinerator (SN-21-01) on a semi-annual basis. Pound per hour emissions shall be based upon worst-case conditions, and ton per year emissions upon a 12-month rolling period or assumed continuous usage. A copy of the calculations shall be kept on-site and made available to Department personnel upon request. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
179. RESERVED
180. The permittee shall calculate benzene emissions from the wastewater effluent once per year. Pound per hour emissions shall be based upon worst-case conditions, and ton per year emissions upon a 12-month rolling period or assumed continuous usage. A copy of the calculations shall be kept on-site and made available to Department personnel upon request. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
- 180a. SN-21-05 is subject to and shall comply with all applicable provisions of 40 C.F.R. Part 60, Subpart A - General Provisions and Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. Applicable provisions of Subpart Dc include, but are not limited to, the following: [8 CAR § 41-204 and 40 C.F.R. 60 Subpart Dc]
- a. The owner or operator shall submit notification of the date of construction or reconstruction, anticipated startup, and actual startup. This notification shall include the design heat input capacity of the boiler and identification of fuels (natural gas only) to be combusted in the affected facility. [8 CAR § 41-204 and 40 C.F.R. § 60.48c(a)]
 - b. Records of the amounts of fuel combusted each day must be kept for SN-21-05. These records shall be kept on site for two years following the date of such records. [8 CAR § 41-204, 40 C.F.R. §§ 60.48c(g) and (i)]

NC-22 Production

Bromine and polystyrene are reacted in an organic solvent, in the presence of a catalyst, to form brominated polystyrene. Bromine vapors from raw material storage are abated by the caustic scrubber (SN-TB-14). The brominated polystyrene product is recovered by vaporization of the solvent and then the product is processed to its final configuration and packaged. Process water from the product recovery area is collected in the hold-up drum (SN-TB-43). Fugitive dusts in the packaging area are collected in the dust collector baghouse (SN-TB-08).

The co-product HBr produced from the reaction is absorbed in water and recycled at the South Plant. Before being recycled, aqueous HBr co-product is stored in a tank (HBr solution storage, SN-TB-42). Any HBr vapor not absorbed in the water is routed to a caustic scrubber. The vent stream from this caustic scrubber is routed to a solvent absorption/recovery unit (SN-TB-41) along with other vent streams from the process and storage areas. The primary function of the solvent absorption/recovery unit is to recover the organic solvent used in the process. The above operating scheme is applicable for all scenarios.

Off-spec NC-22 product can be mixed with NC-22 solvent from the NC-22 process and reintroduced to the NC-22 process downstream of the reactor. First, the solvent from the NC-22 is loaded into vapor balanced trailers which transport the solvent to the loading area nearest R-9332.

Off-spec NC-22 solids to be reworked are pneumatically fed from the bulk bag unloader to hopper H-9351 which is above reactor R-9332. The conveying air is routed through a dust collector (SF-9351). A nitrogen pad is used on the line from H-9351 to R-9332. An agitator is used to mix the system until the off-spec NC-22 product has dissolved. R-9332 is then vented to two carbon drums in series to minimize emissions. The solvent/BCM dissolved mixture is then transferred back to the trailer to be transported back to the NC-22 plant for reprocessing. At the NC-22 process, the solvent is pressured out of the trailer using nitrogen and is pumped into D-9530, the crude NC-22 product storage drum. The trailer is then vented down to the HP-3010 carbon bed.

Specific Conditions

181. The permittee shall not exceed the emission rates set forth in the following table. [8 CAR § 41-401 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
TB-04	Product Baghouse	Removed upon permit issuance		
TB-05	Pneumatic Vacuum Convey System	PM ₁₀	0.5	2.0
TB-08	Dust Collector Baghouse	PM ₁₀	0.3	1.4
TB-29	NC-22 Fugitive Emissions	VOC	1.9	7.2
TB-41	Carbon Bed Solvent Recovery Units	VOC	15.8	18.5
TB-42	HBr Solution Storage	VOC	0.1	0.2
TB-43	Centrate Hold Up Drum	VOC	Routed to TB-41	
TB-44	Central Vacuum System	PM ₁₀	0.2	0.5

SN-#	Description	Pollutant	lb/hr	tpy
TB-47	Re-work Reactor (Carbon Adsorption)	VOC	50.5	0.4
TB-48	Re-work Hopper (Dust Collector, 99.9% efficient)	PM ₁₀	0.2	0.2
TB-49	Bulk Bag Unloader	PM ₁₀	0.3	0.1

181a. RESERVED

181b. RESERVED

181c. RESERVED

182. The permittee shall not exceed the non-criteria emission rates set forth in the following table during production under Scenario A. [8 CAR § 40-701 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
TB-04	Product Baghouse	Removed upon permit issuance.		
TB-05	Pneumatic Vacuum Convey System	PM	0.5	2.0
TB-08	Dust Collector Baghouse	PM	0.3	1.4
TB-14	Bromine Scrubber	Br ₂	0.10	0.44
TB-29	NC-22 Fugitive Emissions	Br ₂	0.22	0.94
		HBr	0.36	1.54
		Total HAP	N/A	0.68
		HCl	N/A	0.24
		Methylene Chloride	N/A	0.10
TB-41	Carbon Bed Solvent Recovery Units	Br ₂	0.01	0.01
		HBr	0.05	0.08
		Total HAP	N/A	0.21
		HCl	0.01	0.01
		Methylene Chloride	N/A	0.20
TB-42	HBr Solution Storage	Br ₂	0.01	0.05
		HBr	0.18	0.79
		Total HAP	N/A	0.05
		HCl	N/A	0.05
TB-44	Central Vacuum System	PM	0.2	0.5
TB-45	Hydrazine Hydrate Tote	Total HAP	N/A	0.01
		Hydrazine	N/A	0.01
TB-47	Re-work Reactor (Carbon Adsorption)	Total HAP	N/A	0.10
		Methylene Chloride	N/A	0.10
TB-48	Re-work Hopper (Dust Collector, 99.9% efficient)	PM	0.2	0.2
TB-49	Bulk Bag Unloader	PM	0.3	0.1

- 182a. The following sources shall not exceed 5% opacity: SN-TB-05, TB-08, TB-14, SN-TB-44 and TB-48. The permittee shall comply with Plantwide Condition #11 for opacity readings. [8 CAR § 40-401 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
- 182b. RESERVED
- 182c. RESERVED
183. The permittee shall maintain a carbon regeneration system at SN-TB-41 capable of completing a minimum of three regeneration for each bed for every 24-hour of bed/source operation. This minimum regeneration rate shall be sustained at all times during operation of the NC-22 process. The regeneration system shall be checked no less than once per week, to ensure that the regeneration rate is being met. Records of each inspection shall be maintained, kept on-site, and made available to Department personnel upon request. [8 CAR § 41-605, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]
- 183a. RESERVED
- 183b. RESERVED
184. The permittee shall not produce more than 3,137 batches at NC-22 per rolling 12-month period. [8 CAR § 41-605, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]
- 184b. The permittee shall not process more than 660 tons of solid product rework at SN-TB-47 per rolling 12-month period. [8 CAR § 41-605, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]
185. The permittee shall maintain records of each batch produced. These records shall be kept on-site and made available to Department personnel upon request. Each individual month's batch total and each month's twelve (12) month rolling total shall be updated by the 15th of the month following the month to which the records pertain. A report including each individual month batch total as well as a 12-month rolling total shall be submitted to the Department in accordance with General Provision #7. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]
- 185b. The permittee shall maintain records of each batch of solid product reworked at SN-TB-47. Each individual month's batch total and each month's twelve (12) month rolling total shall be updated by the 15th of the month following the month to which the records pertain. A report including each individual month batch total as well as a 12-month rolling total shall be submitted to the Department in accordance with General Provision #7. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]
186. The permittee shall perform a visual inspection of the pumps driving the scrubber media at SN-TB-14 at least once per batch, to ensure that sufficient flow is maintained. Inspection results shall be recorded in a log. These records shall be kept on-site and made available to Department personnel upon request. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

NC-23 Production

Raw materials are received in the NC-23 process area via truck or railcar, and are stored in tanks, silos, or warehouses (packaged raw materials). VOC emissions from tanks are vented through a common header to a water scrubber designated as SN-23-03.

Tetrabromobisphenol-A (TBBPA) is produced by reacting bisphenol-A (BPA) with bromine in an ethanol solvent. TBBPA is used as a flame retardant. A liquid byproduct of this reaction is ethyl bromide (bromoethane).

Ethanol is recovered from the ethyl bromide and stored in tanks. The vapors are controlled by a recovery system, consisting of condensers, absorbers, and separators. TBBPA is a solid product. Dust generated by the handling and packaging of TBBPA is controlled by fabric filters. Unreacted solvent ethanol is reclaimed and returned to the process origin as a raw material. Brines containing high concentrations of bromides are generated and recycled to produce bromine (raw material). A byproduct stream consisting of TBBPA, underbrominated TBBPA, isomers, and degradation products is also produced. Caustic is added to the process recycle stream to prevent corrosion.

The silo emission bubble (SN-23-06, SN-23-07, and SN-23-08) includes source numbers assigned to three silo processes. Each silo vents to two identical fabric filter baghouses. This permit allows the facility to operate any of three silos at any given time. Fresh production can only be received by one silo at any given time.

As an alternate operating scenario (Specific Conditions #281 through #313), Methyl bromide (MeBr) is produced by reacting hydrogen bromide with methanol. The reaction product is purified to isolate MeBr. The MeBr is compressed into the liquid state, and temporarily stored before being unloaded into railcars. The vapors from the storage tanks, processing equipment, and transfer operations are controlled by a product recovery system, where the MeBr is recovered and sent back to the purification process. Therefore, the methyl bromide recovery unit also serves as the emission control device for the process. The unreacted methanol (in water solution) is sent to the methanol recovery system, where the methanol is recovered and sent back to be used as feedstock for the reaction.

Under an alternate methanol recovery scenario, methanol introduced in the MeBr recovery system is also routed to the methanol recovery system where the methanol is recovered and recycled for use as feedstock. The water left over from methanol recovery has brine value and; therefore, is piped to the bromine recovery process.

Compliance with permitted emission rates shall be demonstrated through stack testing, parametric monitoring, and record keeping requirements.

Specific Conditions

187. The permittee shall not exceed the emission rates set forth in the following table. [8 CAR § 41-401 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
23-01	NC-23 Fugitive Emissions	VOC	1.2	5.0

SN-#	Description	Pollutant	lb/hr	tpy
23-02	Raw Material Unloading Baghouse	PM ₁₀ VOC	0.1 3.8*	0.5 16.6*
23-03	Raw Material Scrubber	VOC	0.4	1.6
23-04	By-product Loading	VOC	0.5	2.0
23-05	Vent Absorber	VOC	2.9	12.7
23-06 23-07 23-08	Receiving Silo Baghouse Blending Silo Baghouse Discharging Silo Baghouse (emission bubble)	PM ₁₀ VOC	0.3 3.8*	1.4 16.6*
23-09	Product Packaging Baghouse	PM ₁₀ VOC	0.1 3.8*	0.5 16.6*
23-10	Product Packaging Dust Collection	PM ₁₀ VOC	0.1 3.8*	0.5 16.6*
23-11A	Product Loading Baghouse	PM ₁₀	0.1	0.5
23-11B	Product Loading (Railcar)	VOC	3.8*	16.6*
23-12A	Product Loading Baghouse	PM ₁₀	0.1	0.5
23-12B	Product Loading (Truck)	VOC	3.8*	16.6*
23-13	Floor Vacuum Baghouse	PM ₁₀ VOC	0.1 3.8*	0.5 16.6*

* Total emission limit for VOC emitted from NC-23 production unit baghouses.

188. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [8 CAR § 40-701 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
23-01	NC-23 Fugitive Emissions	Br ₂ HBr Total HAP	0.22 0.11 N/A	0.97 0.49 0.13
23-02	Raw Material Unloading Baghouse	PM HBr Total HAP	0.2 0.23* N/A	0.9 0.97* 1.32*
23-03	Raw Material Scrubber	Total HAP	N/A	0.88
23-05	Vent Absorber	Total HAP	N/A	1.46
23-06 23-07 23-08	Receiving Silo Baghouse Blending Silo Baghouse Discharging Silo Baghouse	PM HBr Total HAP	0.6 0.23* N/A	2.7 0.97* 1.32*
23-09	Product Packaging Baghouse	PM HBr Total HAP	0.2 0.23* N/A	0.9 0.97* 1.32*
23-10	Product Packaging Dust Collection	PM HBr Total HAP	0.2 0.23* N/A	0.9 0.97* 1.32*

SN-#	Description	Pollutant	lb/hr	tpy
23-11A	Product Loading Baghouse	PM	0.2	0.9
		HBr	0.23*	0.97*
23-11B	Product Loading (Railcar)	Total HAP	N/A	1.32*
23-12A	Product Loading Baghouse	PM	0.2	0.9
		HBr	0.23*	0.97*
23-12B	Product Loading (Truck)	Total HAP	N/A	1.32*
23-13	Floor Vacuum Baghouse	PM	0.2	0.9
		HBr	0.23*	0.97*
		Total HAP	N/A	1.32*
23-15	Phenol Storage Tank (6,500 gal)	Emissions routed to SN-23-05		

* Total emission limit for HBr, acetaldehyde, chloroethane emitted from NC-23 production unit baghouses.

189. The following sources shall not exceed 5% opacity: SN-23-02, SN-23-06 through SN-23-13 (Each "A" and "B" vent at SN-23-11 and SN-23-12 shall be considered separately). The permittee shall comply with Plantwide Condition #11 for opacity readings. [8 CAR § 40-401 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
190. The permittee shall be allowed to conduct receiving, blending, or discharge for packaging at any of the three silos associated with source numbers SN-23-06, SN-23-07, and SN-23-08 at any given time. [8 CAR § 41-605, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]
191. The permittee shall operate a continuous flow monitor alarm at SN-23-03 (Raw Material Scrubber). A record of the minimum flow set point value for the scrubber shall be maintained. The permittee shall also keep a log of all alarm incidents and subsequent corrective action. These records shall be maintained on-site and made available to Department personnel upon request. The flow rate history and alarm monitoring shall be confirmed by the most recent satisfactory test for purposes of continuous compliance until the next test is performed. [8 CAR § 41-603, 40 C.F.R. § 52 Subpart E, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
192. The permittee shall operate a continuous flow monitor alarm at SN-23-05 (Vent Absorber (scrubber)). A record of the minimum flow set point value for the scrubber shall be maintained. The permittee shall also keep a log of all alarm incidents and subsequent corrective action. These records shall be maintained on-site and made available to Department personnel upon request. The flow rate history and alarm monitoring shall be confirmed by the most recent satisfactory test for purposes of continuous compliance until the next test is performed. [8 CAR § 41-603, 40 C.F.R. § 52 Subpart E, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
193. The permittee shall be limited to 96 total fills per day for the drums venting at SN-23-04. [8 CAR § 41-605, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]

194. The permittee shall maintain daily records of drum fills at SN-23-04 in order to demonstrate compliance with the previous condition. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]
195. The permittee shall conduct stack testing for VOC at SN-23-03, SN-23-05, and either SN-23-06, SN-23-07, or SN-23-08 (whichever process silo is in receiving mode) in 2020 and before the end of each fifth calendar year thereafter. Testing shall be conducted using EPA Reference Method 18, and shall be coordinated in advance with the Compliance Inspector Supervisor. [8 CAR § 41-602 and 40 C.F.R. § 52 Subpart E]
196. The permittee shall conduct stack testing for HBr at source SN-23-06, SN-23-07, or SN-23-08 (whichever process silo is in receiving mode) in 2020 and before the end of each fifth calendar year thereafter. Testing shall be conducted using EPA Reference Method 26A, and shall be coordinated in advance with the Compliance Inspector Supervisor. [8 CAR § 40-902 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
- 196a. RESERVED
- 196b. RESERVED
- 196c. The permittee shall limit the NC-23 primary reactor throughput of ABRM1 to 1.752 million pounds per consecutive 12-month rolling period. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
- 196d. The permittee shall keep monthly records of the amount of ABRM1 added to the reactor along with a twelve month rolling total. All records shall be updated by the 15th day following the month to which the records pertain. Records shall be kept on-site, made available to Department personnel, and otherwise kept in accordance with General Provision 7. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

Brine Management Process

The feed brine production system produces salt water from the Smackover Lime formation and pumps it to the plant, where the hydrogen sulfide and oil are removed. Brine is also purchased and is pumped to the plant where the hydrogen sulfide and oil are removed.

The feed brine system's main components are two above-ground fiberglass tanks. The bromine in the feed brine is removed in the bromine plant, and the debrominated brine becomes tail brine. The tail brine is neutralized in the neutralization tank, cooled by evaporative cooling in the cooling towers (SN-BT-21), and transferred into the fiberglass tail brine tank. From the tail brine tank, it is pumped through a system of pipelines and injected back into the Smackover Lime formation through the tail brine injection (recycle brine) system. Emissions from this process area have been calculated based upon maximum brine pump rates of system components. Compliance with permitted emission rates shall be demonstrated through process throughput restrictions and record keeping requirements.

Specific Conditions

197. The permittee shall not exceed the emission rates set forth in the following table. [8 CAR § 41-401 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
BT-01	Feed Brine Oil Separator/Surge Tank (V-3011)	VOC	0.1	0.1
BT-11	Neutralization Tank (T-3110)	VOC	0.1	0.1
BT-12	Tail Brine Line Vent	VOC	0.1	0.1
BT-13	Tail Brine Tank (T-3101)	VOC	0.1	0.1
BT-16	Brinefield Oil/Water Separator (T-7001)	VOC	30.0	1.8
BT-17	Brinefield Oil Storage Tank (T-7002)	VOC	16.4	1.7
BT-21	Five Tail Brine Cooling Towers (Y-3120, Y-3121, Y-3122, Y-3123, Y-3124)	PM ₁₀	4.2	18.1
		VOC	3.4	14.8
BT-22	Brine Management, Fugitive Emissions Included in Ground Brine Ponds	VOC	0.1	0.1
BT-23	Line Vent	VOC	0.1	0.1
BT-24	Line Vent	VOC	0.1	0.1
BT-25	DRT Tail Brine Line Vent	VOC	0.1	0.1
BT-26	DRT Tail Brine Line Vent	VOC	0.1	0.1
BT-27	Tail Brine Line Vent	VOC	0.1	0.1
BT-28	Tail Brine Line Vent	VOC	0.1	0.1

198. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [8 CAR § 40-701 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
BT-01	Feed Brine Oil Separator/Surge Tank (V-3011)	H ₂ S	0.14	0.61
BT-11	Neutralization Tank (T-3110)	Ammonia	0.20	0.90
		H ₂ S	0.01	0.05
		Total HAP	N/A	0.13
		Cl ₂ or Halogens	N/A	0.13
BT-12	Tail Brine Line Vent	Ammonia	0.01	0.05
		Total HAP	N/A	0.05
		Cl ₂ or Halogens	N/A	0.05
BT-13	Tail Brine Tank (T-3101)	Ammonia	0.02	0.09
		H ₂ S	0.01	0.05
		Total HAP	N/A	0.05
		Cl ₂ or Halogens	N/A	0.05
BT-16	Brinefield Oil/Water Separator (T-7001)	H ₂ S	0.01	0.05
BT-17	Brinefield Oil Storage Tank (T-7002)	H ₂ S	0.01	0.05
BT-21	Five Tail Brine Cooling Towers (Y-3120, Y-3121, Y-3122, Y-3123, Y-3124)	PM	4.2	18.1
		Ammonia	10.23	44.7
		Br ₂	0.62	2.72
		HBr	0.93	4.07
		Total HAP	N/A	3.40
		Cl ₂	N/A	2.04
		HCl	N/A	1.36
BT-22	Brine Management, Fugitive Emissions Included in Ground Brine Ponds	H ₂ S	0.02	0.09
		Ammonia	0.02	0.09
		Total HAP	N/A	0.09
		Cl ₂ or Halogens	N/A	0.09
BT-23	Line Vent	Ammonia	0.01	0.05
		Total HAP	N/A	0.05
		Cl ₂ or Halogens	N/A	0.05
BT-24	Line Vent	Ammonia	0.01	0.05
		Total HAP	N/A	0.05
		Cl ₂ or Halogens	N/A	0.05
BT-25	DRT Tail Brine Line Vent	Ammonia	0.01	0.05
		Total HAP	N/A	0.05
		Cl ₂ or Halogens	N/A	0.05
BT-26	DRT Tail Brine Line Vent	Ammonia	0.01	0.05
		Total HAP	N/A	0.05
		Cl ₂ or Halogens	N/A	0.05
BT-27	Tail Brine Line Vent	Ammonia	0.01	0.05
		Total HAP	N/A	0.05
		Cl ₂ or Halogens	N/A	0.05

SN-#	Description	Pollutant	lb/hr	tpy
BT-28	Tail Brine Line Vent	Ammonia	0.01	0.05
		Total HAP	N/A	0.05
		Cl ₂ or Halogens	N/A	0.05

199. The following sources shall not exceed 5% opacity: SN-BT-11, SN-BT-12, SN-BT-13, and SN-BT-21. The permittee shall comply with Plantwide Condition #11 for opacity readings. [8 CAR § 40-401 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
200. The rate of feed brine to be processed at SN-BT-01 shall be limited to 10,200 gallons of brine per minute. [8 CAR § 41-605, Ark. Code Ann. § 8-4-203 a-s referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]
201. The rate of tail brine to be processed through the tail brine tank (BT-13) and the cooling towers (SN-BT-21) shall be limited to 10,600 gallons per minute, each. [8 CAR § 41-605, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]
202. The annual throughput of petroleum liquids through the brinefield oil/water separator (SN-BT-16) and brinefield oil storage tank (SN-BT-17) shall not exceed 250,000 gallons per year per source, on a 12-month rolling total. [8 CAR § 41-605, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]
203. The permittee shall keep readily accessible records on-site which document the maximum design capacities of SN-BT-01, SN-BT-13, SN-BT-16, SN-BT-17, and SN-BT-21. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
204. The permittee shall keep readily accessible records on-site which demonstrate compliance with annual throughput limits at SN-BT-16 and SN-BT-17. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

Di-(methyl-thio)-toluene-diamine (DMTDA)

Toluene diamine (TDA) and methyl mercaptan (MeSH) are unloaded from tank cars, while chaser, solvent dimethyl formamide (DMF), and hydrogen peroxide (H₂O₂) are unloaded from tank trucks. Catalyst and product stabilizer are received in bags.

TDA and dimethyl disulfide (DMDS) are reacted with the catalyst to form di-(methyl-thio)-toluene-diamine. MeSH, a reaction byproduct, is combined with purchased MeSH and reacted with H₂O₂ to form DMDS, which can be recycled, disposed, or sold as product.

All vapors emitted from the process and storage areas are vented through a common header to a new thermal oxidizer (SN-DM-02). Insignificant amounts of particulate matter are emitted from the catalyst box and the product stabilizer hopper.

Compliance with permitted emission rates shall be demonstrated through stack testing, parametric monitoring, and record keeping requirements.

Specific Conditions

205. The permittee shall not exceed the emission rates set forth in the following table. [8 CAR § 41-401 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
DM-01	Ethylene Glycol Tank	VOC	0.1	0.2
DM-02	Thermal Oxidizer 1.12 MMBtu/hr	PM ₁₀	0.5	2.3
		SO ₂	6.0	26.3
		VOC	0.1	0.5
		CO	0.1	0.5
		NO _x	0.4	1.4
DM-07	Fugitive Emissions	VOC	4.1	18.0

206. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [8 CAR § 40-701 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
DM-01	Ethylene Glycol Tank	Total HAP	N/A	0.11
DM-02	Thermal Oxidizer 1.12 MMBtu/hr	PM	0.5	2.3
		Benzene	0.01	0.01
		Total HAP	N/A	0.01
DM-03	Hydrogen Peroxide Tank I	H ₂ O ₂	N/A	3.55
DM-06	Hydrogen Peroxide Tank II	H ₂ O ₂	N/A	3.55
DM-07	Fugitive Emissions	H ₂ O ₂	0.10	0.44
		Total HAP	N/A	0.88

207. SN-DM-02 shall not exceed 5% opacity. [8 CAR § 40-401 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
208. The combustion zone temperature of the Thermal Oxidizer (SN-DM-02) shall be maintained at a minimum of 1200 °F. A temperature monitoring device operated in accordance with the manufacturer's specifications and recommendations for use shall be

the compliance mechanism for this condition. [8 CAR § 41-603, 40 C.F.R. § 52 Subpart E, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

209. The permittee shall record the combustion zone temperature of SN-DM-02 at least once per 24 hours of operation. The record shall be kept on-site and made available to Department personnel upon request. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]
210. The permittee shall conduct stack testing on SN-DM-02 for the following compounds, using the test methods indicated. [8 CAR § 41-602 and 40 C.F.R. § 52 Subpart E]

Pollutant	EPA Reference Method
PM ₁₀	5
SO ₂	6C
VOC	18
CO	10
NO _x	7E

The testing shall be conducted in 2020 and before the end of each fifth calendar year thereafter, except for SO₂ testing, which shall be performed in 2016 and before the end of each second calendar year thereafter. All particulate measured shall be assumed to be PM₁₀.

Maintenance and Support Facilities

Extraneous Water System

Process water from all plant operating units is routed to the Extraneous Water Treatment System prior to underground injection in three on-site Class I injection wells. This process water is collected in small unit sumps. Approximately 90% of the water is pumped from these unit sumps into the ADMA collection sump. From this sump, the water can be pumped to either extraneous water storage tanks, T-1305 or T-1300, or to the Extraneous Water Overflow Tank.

The Extraneous Water Overflow Tank is only used during excessive rainfall periods; it is normally empty. Normally, the flow is routed to T-1305, the small extraneous water storage tank. From there the water flows through the large extraneous water storage tank. Solids from these two tanks are sent to the drying bed for dewatering prior to disposal in Solid Waste Vault-2, (SWV-2). The water from the tanks continues on to the clarifier and three filter presses for further solids removal. The solids from the filter presses go directly to SWV-2. The water flows through the injection tank and a cartridge polishing filter prior to injection in one of three on-site Class-I injection wells.

The Extraneous Water Treatment System is being permitted under one emission bubble. Compliance with permitted emission rates shall be demonstrated through record keeping requirements.

Specific Conditions

211. The permittee shall not exceed the emission rates set forth in the following table. In order to demonstrate compliance with the emission limits, the permittee shall calculate annual emissions from the Extraneous Water System every six months. These calculations shall be kept on-site and made available to Department personnel upon request. [8 CAR § 41-401 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
MS-01	Extraneous Water System	VOC	6.0	26.3

212. The permittee shall not exceed the emission rates set forth in the following table. In order to demonstrate compliance with the emission limits, the permittee shall calculate annual emissions from the Extraneous Water System every six months. These calculations shall be kept on-site and made available to Department personnel upon request. [8 CAR § 40-701 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
MS-01	Extraneous Water System	Total HAP	N/A	12.52
		Methanol	0.96	4.21
		Methyl Bromide	0.10	0.41
		Methylene Chloride	N/A	1.48

Drying Bed

Solids from the Extraneous Water storage tanks and unit sumps are deposited on the Drying Bed for dewatering prior to disposal in the Solid Waste Vault #2. The water drained from the solids is pumped on level control back to the Extraneous Water storage tanks. The Drying Bed is approximately 100 ft by 300 ft in size.

Compliance with permitted emission rates shall be demonstrated through record keeping requirements.

Specific Conditions

213. The permittee shall not exceed the emission rates set forth in the following table. [8 CAR § 41-401 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
MS-02	Drying Bed	VOC	0.1	0.5

214. Records of solids transferred from the drying bed (SN-MS-02) to the landfill (SN-MS-06) shall be maintained and updated on a monthly basis. These records shall be kept on-site and made available to Department personnel upon request. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]
215. The permittee shall calculate annual emissions from the Drying Bed every six months. These calculations shall be kept on-site and made available to Department personnel upon request. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]

French Drain Sumps

Albemarle Corporation operates a system of sumps at the South Plant to collect contaminated groundwater at the plant site. The constituent concentration and pump rates of these sumps vary with hydrology. The recovered groundwater is recycled to the Bromine Process for bromide ion recovery through a process tank. These sumps are being permitted as a bubble. This tank is an insignificant source in the Bromine Process.

Compliance with permitted emission rates shall be demonstrated through record keeping requirements.

Specific Conditions

216. The permittee shall not exceed the emission rates set forth in the following table. [8 CAR § 41-401 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
MS-03	French Drain Sump Bubble	VOC	0.3	1.4

217. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [8 CAR § 40-701 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
MS-03	French Drain Sump Bubble	Br ₂	0.1	0.44
		Total HAP	N/A	0.12
		Benzene	0.01	0.01

218. Records of water quantity recovered from the sumps (SN-MS-03) shall be maintained on-site, updated monthly, and made available to Department personnel upon request. Recovered water shall be limited to 82.0 million gallons per year from all sumps in the aggregate. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]

Plantwide Refrigerant Fugitive Emissions

VOC and Non-VOC/Non-HAP refrigerants may be used in the various heat exchange processes at Albemarle. Refrigerant may be emitted from fittings, seals, and other refrigeration system components. The permitted hourly emission rate shown here is a conservative assumption that 50% of the total annual charge (9.62 tons) of refrigerant emissions estimates occur in a single month. Compliance is demonstrated based on work practices, mass balances, and recordkeeping according to Plantwide Condition #13.

219. The permittee shall not exceed the emission rates set forth in the following table. [8 CAR § 41-401 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
MS-12	Plantwide Fugitive Refrigerant Emissions	VOC	14.2	9.7

220. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [8 CAR § 40-701 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
MS-12	Plantwide Fugitive Refrigerant Emissions	Non-VOC/Non-HAP Refrigerant	N/A	9.62

221. RESERVED
 222. RESERVED
 223. RESERVED

Carpenter's Shop

Albemarle Corporation operates an on-site carpenter's shop which makes shelves, cabinets, decks, and any other wood forms necessary to support the chemical manufacturing process operations at the facility.

This operation is subject to all applicable requirements of 40 CFR Part 63, Subpart JJ, National Emission Standards for Wood Furniture Manufacturing Operations.

Compliance with permitted emission rates shall be demonstrated through record keeping requirements.

Specific Conditions

224. The permittee shall not exceed the emission rates set forth in the following table. [8 CAR § 41-401 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
MS-05	Carpenter's Shop Fugitives	VOC	0.7	2.2

225. Monthly record keeping of the finishing materials and adhesives used in the Carpenter's Shop (SN-MS-05) shall be maintained on-site to demonstrate that the facility meets the criteria for an incidental furniture manufacturer. Monthly usage shall be limited to 100 gallons of solvent-based finishing materials and adhesives per month. [8 CAR § 41-204 and 40 C.F.R. § 63.800]

South Landfill

The South Landfill is used mainly for disposal of plant trash and molten sulfur from the DECTP process. Sulfur disposal will result in emissions of PM, PM₁₀, VOC and SO₂.

Specific Conditions

226. The permittee shall not exceed the emission rates set forth in the following table. [8 CAR § 41-401 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
MS-06	South Landfill	PM ₁₀	1.1	0.4
		SO ₂	0.5	0.2
		VOC	7.0	2.4

227. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [8 CAR § 40-701 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
MS-06	South Landfill	PM	2.2	0.8
		Total HAP	N/A	1.70

228. Monthly records of sulfur disposed in the South Landfill (SN-MS-06) shall be maintained, kept on-site, and made available to Department personnel upon request. Yearly disposal, on a 12-month rolling total, shall not exceed 24 million pounds per year. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]
- 228a. The permittee shall not operate in a manner such that fugitive emissions from the South Landfill (MS-06) would cause a nuisance off-site or allow visible emissions from extending beyond the property boundary. Under normal conditions, off-site opacity less than or equal to 5% shall not be considered a nuisance. The permittee shall use water sprays, sweeping, or other techniques as necessary to control fugitive emissions that

migrate off-site. [8 CAR § 40-401 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

Gasoline Storage Tank

Albemarle Corporation maintains a 3,400 gallon gasoline storage tank on the South Plant. Albemarle also maintains insignificant gasoline storage tanks (up to 2,000 gallons total capacity) (SN-MS-10) The gasoline is used for mobile sources and equipment.

Specific Conditions

229. The permittee shall not exceed the emission rates set forth in the following table. [8 CAR § 41-401 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
MS-07	Gasoline Storage Tank	VOC	47.7	1.0

230. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [8 CAR § 40-701 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
MS-07	Gasoline Storage Tank	Total HAP	N/A	0.06
		Benzene	0.25	0.01

231. The gasoline storage tank shall be limited to 200,000 gallons throughput per rolling 12 months. [8 CAR § 41-605, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]
232. Records shall be maintained to demonstrate compliance with the gasoline storage tank throughput limit. The records shall be updated monthly, kept on-site, and made available to Department personnel upon request. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]

Solid Waste Vault No. 2

The Solid Waste Vault No. 2 (SWV-2) is an on-site solid waste landfill. This landfill receives solids from the Drying Bed, the Extraneous Water Filter presses, and numerous solid waste collection points throughout the process units. VOC and particulate emissions from this area are estimated to be de minimis under Group A Number 13 of the Department's Insignificant Activities List.

Outfall 002 Bioreactor

The Outfall 002 Bioreactor is a 30,000 gallon per day package sewage treatment plant, which treats effluents from numerous septic tanks located throughout the plant. The treatment system includes an aeration basin clarifier and chlorine contact chamber. The chlorinator uses swimming pool chlorine tablets for chlorination. This source emits trace amounts of chlorine and methane, and is considered insignificant under Group A Number 13.

PSV-1 Sumps and PSV-1 Leachate Tank

PSV-1 is a closed on-site landfill. This landfill is designed with both primary and secondary liners which underlay the waste. Liquid which collects on top of these liners drains to two in-

ground open top collection sumps, one for the primary liner, and one for the secondary liner. The liquid collected in these sumps is pumped to the PSV-1 Leachate Tank, T-9590. The PSV-1 Leachate Tank is an API tank with a nominal capacity of 43,000 gallons. The liquid collected in this tank is trucked off-site for disposal. The liquid which collects in the sumps and tank is essentially water with very little contamination. All three of these sources, PSV-1 Primary Liner Sump, PSV-1 Secondary Liner Sump, and PSV-1 Leachate Tank, are insignificant sources under Group A Number 13.

Cooling Towers

The cooling towers on the plant site are treated with a combination of sodium bromide and chlorine. These two chemicals are added simultaneously into a static in-line mixer. The sodium bromide and chlorine react to form sodium chloride and hyperbromus acid. Air emissions for this treatment are estimated to be de minimis under Group A Number 13.

Abrasive Blasting

Abrasive blasting is conducted periodically to prepare equipment for coating.

233. The permittee shall not exceed the emission rates set forth in the following table. The permittee shall demonstrate compliance with this condition by compliance with Specific Condition #237. [8 CAR § 41-401 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
MS-13	Abrasive Blasting	PM ₁₀	26.0	2.1

234. The permittee shall not exceed the non-criteria emission rates set forth in the following table. The permittee shall demonstrate compliance with this condition by compliance with Specific Condition #237. [8 CAR § 40-701 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
MS-13	Abrasive Blasting	PM	54.0	4.3

235. Visible emissions may not exceed the limits specified in the following table of this permit as measured by EPA Reference Method 9. [Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN	Limit	Regulatory Citation
MS-13	20%	8 CAR § 41-403

236. Monthly observations of the opacity from SN-MS-13 shall be conducted by a person trained but not necessarily certified in EPA Reference Method 9. If visible emissions in excess of the permitted levels are detected, the permittee shall immediately take action to identify the cause of the visible emissions in excess of the permit limit, implement corrective action, and document that visible emissions did not appear to be in excess of the permitted opacity following the corrective action. The permittee shall maintain records which contain the following items in order to demonstrate compliance with this specific condition. These records shall be updated monthly, kept on site, and made

available to Division of Environmental Quality personnel upon request. [8 CAR § 41-403 and 40 C.F.R. § 52]

- a. The date and time of the observation.
 - b. If visible emissions which appeared to be above the permitted limit were detected.
 - c. If visible emissions which appeared to be above the permitted limit were detected, the cause of the exceedance of the opacity limit, the corrective action taken, and if the visible emissions appeared to be below the permitted limit after the corrective action was taken.
 - d. The name of the person conducting the opacity observations.
237. The permittee shall not exceed a throughput of 312,000 pounds of abrasives at SN-MS-13 per rolling 12 month period. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
238. The permittee shall maintain monthly records to demonstrate compliance with Specific Condition #237. The permittee shall update these records by the fifteenth day of the month following the month to which the records pertain. The twelve month rolling totals and each individual month's data shall be maintained on-site, made available to Division of Environmental Quality personnel upon request, and submitted in accordance with General Provision #7. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

95ND141/Stabrom 909 Production at NC-14

Albemarle will either receive sodium hypochlorite in the process area, or manufacture it between batches in the product reactor. If Albemarle manufactures sodium hypochlorite, it will feed aqueous sodium hydroxide solution to the reactor while gaseous chlorine is bubbled through it. The Caustic Scrubber (SN-TB-14) controls emissions from this process. Finished batches of sodium hypochlorite are pumped to a storage tank for later use. If Albemarle uses purchased sodium hypochlorite it will also be stored in this same tank. The sodium hypochlorite storage tank vents water vapor, nitrogen, and oxygen to the atmosphere.

The inorganic acid used in the process is received in the process area and stored on-site. It is a white crystal with no observed dusting tendencies. Bleach is fed directly to the process, as are bromine, sodium hydroxide, and sodium bromide. Equivalent liquid products can be produced from these new materials.

During these production processes Br₂, BrCl, and Cl₂ may be vented from the reactors to the reactive caustic scrubber (SN-TB-14). Particulate emissions are not expected but quantified for the inorganic acid weighing vessel (SN-TB-40). Oxygen, nitrogen, and water vapor vent from the product storage due to loading and unloading of the product solution and due to breathing losses from daily temperature fluctuations. Bleach and/or product are stored and mixed with water in three Bleach/Product Storage and Mix Tanks (insignificant activity).

Specific Conditions

239. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [8 CAR § 40-701 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr*	tpy*
TB-14	Caustic Scrubber	Br ₂	0.10	0.44
		BrCl	N/A	0.44
		Total HAP	N/A	0.44
		Cl ₂	N/A	0.44
TB-29	Fugitive Emissions	Br ₂	0.10	0.44
		BrCl	N/A	0.44
		Total HAP	N/A	0.44
		Cl ₂	N/A	0.05

* Includes emission estimates for the proposed production scenario only. If methyl-bromide is being produced, these limits may be additive with the new limits listed for the two sources under the other scenarios.

240. The permittee shall conduct initial stack testing for SN-TB-14 within 1500 operating hours following permit issuance of operation of the 95ND141/Stabrom 909 Production Scenario. This testing was last performed in 2016. The permittee shall conduct subsequent testing before the end of each fifth calendar year thereafter. The permittee shall use Method 26A to verify compliance with the Br₂, BrCl, and Cl₂ emission rates set forth in Specific Condition #239. [8 CAR § 40-902 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

Alternate Control Device for SN-BR-12

The permittee may operate the Caustic Drum, SN-BR-15, as an alternative control device during periods when the Bromine Area Scrubber, SN-BR-12, is out of service.

Specific Conditions

241. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [8 CAR § 40-701 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
SN-BR-15	Caustic Drum	Br ₂	1.60	0.10
		Total HAP	N/A	0.10
		Cl ₂	N/A	0.10

242. SN-BR-15 shall not exceed 5% opacity. [8 CAR § 40-401 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
243. The permittee shall take immediate corrective action when visible emissions are detectable from SN-BR-15 and shall not operate the source until it is capable of meeting opacity requirements. Records shall be kept of any upset conditions at SN-BR-15 and submitted in accordance with Plantwide Condition 10. [8 CAR § 40-902 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
244. The permittee shall not operate SN-BR-15 more than 120 hours per twelve consecutive months and shall only operate the source during scheduled plant shutdowns or emergency situations where the Bromine Area Scrubber, SN-BR-12, is out of service. [8 CAR § 40-902 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
245. The permittee shall keep records demonstrating compliance with Specific Condition #244. Records shall be updated monthly by the fifteenth day following the month to which the records pertain. The records shall include a twelve month rolling total. Records shall be made available to Department personnel upon request, and otherwise submitted in accordance with General Provision #7. [8 CAR § 40-902 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

Generator Usage

The facility has a number of engines used during emergencies to provide electricity and to pump water.

Specific Conditions

246. The permittee shall not exceed the emission rates set forth in the following table. [8 CAR § 41-401 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
MS-08-01	Fire Pump #1 CI Emergency Engine 208 hp	PM ₁₀	0.5	0.2
		SO ₂	0.5	0.2
		VOC	0.6	0.2
		CO	1.4	0.4
		NO _x	6.5	1.7
MS-08-02	Fire Pump #2 CI Emergency Engine 208 hp	PM ₁₀	0.5	0.2
		SO ₂	0.5	0.2
		VOC	0.6	0.2
		CO	1.4	0.4
		NO _x	6.5	1.7
MS-08-03	#1 Water Well (Potable Water Backup) CI Emergency Engine 235 hp	PM ₁₀	0.6	0.2
		SO ₂	0.5	0.2
		VOC	0.6	0.2
		CO	1.6	0.4
		NO _x	7.3	1.9
MS-08-04	#4 Outfall Backup SI Emergency Engine 13.4 hp	PM ₁₀	0.1	0.1
		SO ₂	0.1	0.1
		VOC	0.4	0.1
		CO	0.7	0.2
		NO _x	0.8	0.2
MS-08-05	Phone/Admin Backup #1 SI Emergency Engine 26.8 hp	PM ₁₀	0.1	0.1
		SO ₂	0.1	0.1
		VOC	0.7	0.2
		CO	1.4	0.4
		NO _x	1.6	0.4
MS-08-06	Security Backup SI Emergency Engine 50.0 hp	PM ₁₀	0.1	0.1
		SO ₂	0.1	0.1
		VOC	0.8	0.2
		CO	1.6	0.4
		NO _x	1.9	0.5
MS-08-07	Fire Pump #3 CI Emergency Engine 375 hp	PM ₁₀	0.2	0.1
		SO ₂	0.7	0.2
		VOC	2.3	0.6
		CO	2.0	0.5
		NO _x	2.3	0.6

SN-#	Description	Pollutant	lb/hr	tpy
MS-08-08	Phone/Admin Backup #2 SI Emergency Engine 82 hp	PM ₁₀	0.1	0.1
		SO ₂	0.1	0.1
		VOC	1.9	0.1
		CO	2.8	0.2
		NO _x	1.9	0.1
MS-08-09	Bromine Caustic Scrubber Pump CI Emergency Engine 56 hp	PM ₁₀	0.1	0.1
		SO ₂	0.2	0.1
		VOC	0.5	0.2
		CO	0.5	0.2
		NO _x	0.5	0.2

247. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [8 CAR § 40-701 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
MS-08-01	Fire Pump #1 CI Emergency Engine 208 hp	PM	0.5	0.2
		Total HAP	N/A	0.01
		Benzene	0.01	0.01
MS-08-02	Fire Pump #2 CI Emergency Engine 208 hp	PM	0.5	0.2
		Total HAP	N/A	0.01
		Benzene	0.01	0.01
MS-08-03	#1 Water Well (Potable Water Backup) CI Emergency Engine 235 hp	PM	0.6	0.2
		Total HAP	N/A	0.01
		Benzene	0.01	0.01
MS-08-04	#4 Outfall Backup SI Emergency Engine 13.4 hp	PM	0.1	0.1
		Total HAP	N/A	0.01
		Benzene	0.01	0.01
		Methanol	0.01	0.01
MS-08-05	Phone/Admin Backup #1 SI Emergency Engine 26.8 hp	Methylene Chloride	N/A	0.01
		PM	0.1	0.1
		Total HAP	N/A	0.01
		Benzene	0.01	0.01
MS-08-06	Security Backup SI Emergency Engine 50.0 hp	Methanol	0.01	0.01
		Methylene Chloride	N/A	0.01
		PM	0.1	0.1
		Total HAP	N/A	0.01
MS-08-07	Fire Pump #3 CI Emergency Engine 375 hp	Benzene	0.01	0.01
		PM	0.2	0.1
		Total HAP	N/A	0.01

SN-#	Description	Pollutant	lb/hr	tpy
MS-08-08	Phone/Admin Backup #2 SI Emergency Engine (LPG) 82 hp	PM	0.1	0.1
		Total HAP	N/A	0.01
		Benzene	0.01	0.01
		Methanol	0.01	0.01
		Methylene Chloride	N/A	0.01
MS-08-09	Bromine Caustic Scrubber Pump CI Emergency Engine 56 hp	PM	0.1	0.1
		Total HAP	N/A	0.01
		Benzene	0.01	0.01

General Generator and Fire Pump Usage Conditions

248. The permittee shall keep onsite an updated log book or other well organized format that includes all reciprocating internal combustion engines located at the facility. The log shall contain information that identifies source number, source description, serial number, date of purchase and installation, manufacturer, model, model year, manufacturer's rated output (hp), manufacturer's emissions data, emissions certification number if complying by NSPS IIII or JJJJ, emergency or non-emergency use designation, and whether or not NSPS IIII or JJJJ or NESHAP ZZZZ applies. Copies of manufacturer's specifications, manufacturer's emission data, and emission certifications shall be kept as an appendix to the log book. For engines not subject to NSPS IIII or JJJJ, the manufacturer's emission data and emissions certification may omitted provided that the permittee demonstrates reasonable attempts have been made obtain that information and it is found that such information no longer exists or never existed. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]
249. The permittee shall not exceed 20% opacity from any diesel fired engine or 5% opacity from engines firing any other fuel. Compliance shall be demonstrated by the use of diesel, gasoline, natural gas, or liquefied petroleum gas. [8 CAR § 41-403 and 40 C.F.R. § 52 Subpart E]
250. The permittee shall only operate those stationary engines identified in Specific Condition #246. [8 CAR § 41-605, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]
251. The permittee shall conduct inspections and perform maintenance as recommend by the manufacturer of the engine and keep a record of these activities. These records shall be updated by the 15th of the month following the month to which the records pertain, kept onsite, and made available to Department personnel upon request. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]

NESHAP ZZZZ Conditions for Existing Stationary Emergency Engines ≤500 HP

252. SN-MS-08-01 through SN-MS-08-06 are subject to and shall comply with all applicable provisions of 40 CFR Part 63, Subpart ZZZZ – *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*. These requirements include, but are not limited to the following: [8 CAR § 41-204 and 40 C.F.R. § 63 Subpart ZZZZ]

- a. The permittee shall minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes. [8 CAR § 41-204 and 40 C.F.R. §63.6603]
- b. The permittee shall change oil and filter every 500 hours of operation or annually, whichever comes first. The permittee may extend the oil change requirement through utilizing an oil analysis program described by §63.6625 (j). [8 CAR § 41-204 and 40 C.F.R. § 63.6603]
- c. The permittee shall inspect the air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary. [8 CAR § 41-204 and 40 C.F.R. § 63.6603]
- d. The permittee shall inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary. [8 CAR § 41-204 and 40 C.F.R. § 63.6603]
- e. The permittee shall operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions: [8 CAR § 41-204 and 40 [8 CAR § 41-204 and 40 C.F.R. § 63.6625 (e)]
- f. The permittee shall install a non-resettable hour meter if one is not already installed. [8 CAR § 41-204 and 40 C.F.R. § 63.6625 (f)]
- g. The permittee must operate the emergency stationary RICE according to the requirements in Specific Conditions ##252.g.i through #252.g.iii. In order for the engine to be considered an emergency stationary RICE, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in Specific Conditions ##252.g.i through #252.g.iii, is prohibited. If the permittee does not operate the engine according to the requirements in Specific Conditions ##252.g.i through #252.g.iii, the engine will not be considered an emergency engine and must meet all requirements for non-emergency engines. [8 CAR § 41-204 and 40 C.F.R. § 63.6640 (f)]
 - i. There is no time limit on the use of emergency stationary RICE in emergency situations. [8 CAR § 41-204 and 40 C.F.R. § 63.6640 (f)(1)]
 - ii. The permittee may operate the emergency stationary RICE for any combination of the purposes specified in Specific Conditions #252.g.ii.1 through #252.g.ii.3 for a maximum of 100 hours per calendar year. [8 CAR § 41-204 and 40 C.F.R. § 63.6640 (f)(2)]
 - A. Emergency stationary RICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the

manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency RICE beyond 100 hours per calendar year. [8 CAR § 41-204 and 40 C.F.R. § 63.6640 (f)(2)(i)]

- B. Emergency stationary RICE may be operated for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see § 63.14), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3. [8 CAR § 41-204 and 40 C.F.R. § 63.6640 (f)(2)(ii)]
- C. Emergency stationary RICE may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency. [8 CAR § 41-204 and 40 C.F.R. § 63.6640 (f)(2)(iii)]
- iii. Emergency stationary RICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in Specific Condition #252.g.ii of this section. The 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.
- h. The permittee shall keep the records described as follows: [8 CAR § 41-204 and 40 C.F.R. § 63.6655 (a)]
 - i. A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted, according to the requirement in § 63.10(b)(2)(xiv). [8 CAR § 41-204 and 40 C.F.R. § 63.6655 (a)(1)]
 - ii. Records of the occurrence and duration of each malfunction of operation (*i.e.*, process equipment) or the air pollution control and monitoring equipment. [8 CAR § 41-204 and 40 [8 CAR § 41-204 and 40 C.F.R. § 63.6655 (a)(2)]

- iii. Records of all required maintenance performed on the air pollution control and monitoring equipment. [8 CAR § 41-204 and 40 [8 CAR § 41-204 AND 40 C.F.R. 63.6655 (a)(4)]
- iv. Records of actions taken during periods of malfunction to minimize emissions in accordance with §63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation. [8 CAR § 41-204 and 40 C.F.R. § 63.6655 (a)(5)]
- v. The permittee must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The permittee must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engine is used for the purposes specified in Specific Condition #252.g.ii.2 or #252.g.ii.3, the permittee must keep records of the notification of the emergency situation, and the date, start time, and end time of engine operation for these purposes. [8 CAR § 41-204 and 40 C.F.R. § 63.6655 (f)]

NSPS IIII Conditions for Fire Pumps

253. SN-MS-08-07 and SN-MS-08-09 are subject to and shall comply with all applicable provisions of 40 CFR Part 63, Subpart ZZZZ – *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*. Compliance with Subpart ZZZZ is demonstrated through compliance with 40 CFR Part 60, Subpart IIII – *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*. These requirements include, but are not limited to the following: [8 CAR § 41-204 and 40 C.F.R. § 60 Subpart IIII]

- a. The permittee must operate the emergency stationary ICE according to the requirements of this condition. In order for the engine to be considered an emergency stationary ICE under 40 CFR Part 60, Subpart IIII, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in the following conditions, is prohibited. If the engine is not operated according to the requirements in these conditions, the engine will not be considered an emergency engine and must meet all requirements for non-emergency engines. [8 CAR § 41-204 and 40 C.F.R. § 60.4211 (f)]
 - i. There is no time limit on the use of emergency stationary ICE in emergency situations. [8 CAR § 41-204 and 40 C.F.R. § 60.4211 (f)(1)]
 - ii. The permittee may operate the emergency stationary ICE for any combination of the purposes specified in the following conditions for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by Specific Condition #253.a.iii. counts as part of the 100 hours per calendar year allowed by this condition. [8 CAR § 41-204 and 40 C.F.R. § 60.4211 (f)(2)]

- A. Emergency stationary ICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year. [8 CAR § 41-204 and 40 C.F.R. § 60.4211 (f)(2)(i)]
 - B. Emergency stationary ICE may be operated for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see §60.17), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3. [8 CAR § 41-204 and 40 C.F.R. § 60.4211 (f)(2)(ii)]
 - C. Emergency stationary ICE may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency. [8 CAR § 41-204 and 40 C.F.R. § 60.4211 (f)(2)(iii)]
- iii. Emergency stationary ICE may be operated for up to 50 hours per calendar year in nonemergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in Specific Condition #253.a.ii. Except as provided in paragraph #253a.iii.1, the 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity. [8 CAR § 41-204 and 40 C.F.R. § 60.4211 (f)(3)]
- A. The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met: [8 CAR § 41-204 and 40 C.F.R. § 60.4211 (f)(3)(i)]
 - I. The engine is dispatched by the local balancing authority or local transmission and distribution system operator; [8 CAR § 41-204 and 40 C.F.R. § 60.4211 (f)(3)(i)(A)]

- II. The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region. [8 CAR § 41-204 and 40 C.F.R. § 60.4211 (f)(3)(i)(B)]
 - III. The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines. [8 CAR § 41-204 and 40 C.F.R. § 60.4211 (f)(3)(i)(C)]
 - IV. The power is provided only to the facility itself or to support the local transmission and distribution system. [8 CAR § 41-204 and 40 C.F.R. § 60.4211 (f)(3)(i)(D)]
 - V. The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator. [8 CAR § 41-204 and 40 C.F.R. § 60.4211 (f)(3)(i)(E)]
- b. The permittee shall not discharge to the atmosphere any gases from SN-MS-08-07 that contain the following pollutants in excess of the specified limits. Compliance with this condition shall be demonstrated by maintaining manufacturer's documentation of the engine's certification to meet the standard below. [8 CAR § 41-204 and 40 C.F.R. § 60.4205 (c)]

Pollutant	Emission Standard g/KW-hr (g/HP-hr)
NMHC + NO _x	4.0 (3.0)
CO	3.5 (2.6)
PM	0.20 (0.15)

- c. The permittee shall not discharge to the atmosphere any gases from SN-MS-08-09 that contain the following pollutants in excess of the specified limits. Compliance with this condition shall be demonstrated by maintaining manufacturer's documentation of the engine's certification to meet the standard below. [8 CAR § 41-204 and 40 C.F.R. § 60.4205 (b)]

Pollutant	Emission Standard g/KW-hr (g/HP-hr)
NMHC + NO _x	4.7 (3.5)
CO	5.0 (3.7)
PM	0.4 (0.30)

- d. The permittee must operate and maintain SN-MS-08-07 and SN-MS-08-09 to achieve the emission standards over the entire life of the engine. [8 CAR § 41-204 and 40 C.F.R. § 60.4206]
- e. The permittee shall only combust diesel fuel with a maximum sulfur content of 15 ppm (0.0015%) by weight and either a minimum cetane index of 40 or a maximum aromatic content of 35% by volume. [8 CAR § 41-204 and 40 C.F.R. § 60.4207 (b)]
- f. The permittee shall install a non-resettable hour meter prior to start-up of SN-MS-08-07 and SN-MS-08-09. [8 CAR § 41-204 and 40 C.F.R. § 60.4209 (a)]
- g. The permittee shall operate and maintain the stationary IC internal combustion engine and any control devices according to the manufacturer's written instructions or procedures developed by the permittee that are approved by the engine manufacturer. In addition, the permittee may only change those settings that are permitted by the manufacturer. [8 CAR § 41-204 and 40 C.F.R. § 60.4211 (a)]

NSPS JJJJ Conditions for New Stationary LPG Rich Burn Emergency Engines >25 HP

254. SN-MS-08-08 is subject to and shall comply with all applicable provisions of 40 CFR Part 63, Subpart ZZZZ – *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*. Compliance with Subpart ZZZZ is demonstrated through compliance with 40 CFR Part 60, Subpart JJJJ – *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*. These requirements include, but are not limited to the following: [8 CAR § 41-204 and 40 C.F.R. § 60 Subpart JJJJ]

- a. The permittee must operate the emergency stationary ICE according to the requirements of this condition. In order for the engine to be considered an emergency stationary ICE under 40 CFR Part 60, Subpart JJJJ, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in the following conditions, is prohibited. If the engine is not operated according to the requirements in these conditions, the engine will not be considered an emergency engine and must meet all requirements for non-emergency engines. [8 CAR § 41-204 and 40 C.F.R. § 60.4243 (d)]
 - i. There is no time limit on the use of emergency stationary ICE in emergency situations. [8 CAR § 41-204 and 40 C.F.R. § 60.4243 (d)(1)]
 - ii. The permittee may operate the emergency stationary ICE for any combination of the purposes specified in the following conditions for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by Specific Condition #254.a.iii. counts as part of the 100 hours per calendar year allowed by this condition. [8 CAR § 41-204 and 40 C.F.R. § 60.4243 (d)(2)]

- A. Emergency stationary ICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year. [8 CAR § 41-204 and 40 C.F.R. § 60.4243 (d)(2)(i)]
 - B. Emergency stationary ICE may be operated for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see §60.17), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3. [8 CAR § 41-204 and 40 C.F.R. § 60.4243 (d)(2)(ii)]
 - C. Emergency stationary ICE may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency. [8 CAR § 41-204 and 40 C.F.R. § 60.4243 (d)(2)(iii)]
- iii. Emergency stationary ICE may be operated for up to 50 hours per calendar year in nonemergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in Specific Condition #254.a.ii. Except as provided in paragraph #254a.iii.1, the 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity. [8 CAR § 41-204 and 40 C.F.R. § 60.4243 (d)(3)]
- A. The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met: [8 CAR § 41-204 and 40 C.F.R. § 60.4243 (d)(3)(i)]
 - I. The engine is dispatched by the local balancing authority or local transmission and distribution system operator; [8 CAR § 41-204 and 40 C.F.R. § 60.4243 (d)(3)(i)(A)]

- II. The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region. [8 CAR § 41-204 and 40 C.F.R. § 60.4243 (d)(3)(i)(B)]
 - III. The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines. [8 CAR § 41-204 and 40 C.F.R. § 60.4243 (d)(3)(i)(C)]
 - IV. The power is provided only to the facility itself or to support the local transmission and distribution system. [8 CAR § 41-204 and 40 C.F.R. § 60.4243 (d)(3)(i)(D)]
 - V. The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator. [8 CAR § 41-204 and 40 C.F.R. § 60.4243 (d)(3)(i)(E)]
- b. The permittee shall not discharge to the atmosphere any gases from SN-MS-08-08 that contain the following pollutants in excess of the specified limits. Compliance with this condition shall be demonstrated by maintaining manufacturer's documentation of the engine's certification to meet the standards below. [8 CAR § 41-204 and 40 C.F.R. § 60.4205 (c)]

Pollutant	Emission Standard g/KW-hr
HC + NO _x	13.4
CO	519

- c. The permittee must operate and maintain SN-MS-08-08 to achieve the emission standards over the entire life of the engine. [8 CAR § 41-204 and 40 C.F.R. § 60.4234]
- d. The permittee shall install a non-resettable hour meter prior to start-up of SN-MS-08-08. [8 CAR § 41-204 and 40 C.F.R. § 60.4237 (c)]
- e. The permittee shall operate and maintain the stationary SI internal combustion engine and any control devices according to the manufacturer's written instructions and must keep records conducted maintenance to demonstrate compliance. In addition, the permittee may only change those settings that are permitted by the manufacturer. [8 CAR § 41-204 and 40 C.F.R. § 60.4243 (a)]
- f. The permittee must keep records of the information as follows: [8 CAR § 41-204 and 40 C.F.R. § 60.4245 (a)]

- iv. All notifications submitted to comply with 40 CFR Part 60, Subpart JJJ and all documentation supporting any notification. [8 CAR § 41-204 and 40 C.F.R. § 60.4245 (a)(1)]
 - v. Maintenance conducted on the engine. [8 CAR § 41-204 and 40 C.F.R. § 60.4245 (a)(2)]
 - vi. If the stationary SI internal combustion engine is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards and information as required in 40 CFR parts 90, 1048, 1054, and 1060, as applicable. [8 CAR § 41-204 and 40 C.F.R. § 60.4245 (a)(3)]
 - vii. If the stationary SI internal combustion engine is not a certified engine or is a certified engine operating in a non-certified manner and subject to §60.4243(a)(2), documentation that the engine meets the emission standards. [8 CAR § 41-204 and 40 C.F.R. § 60.4245 (a)(4)]
 - g. The permittee must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. [8 CAR § 41-204 and 40 C.F.R. § 60.4245 (b)]
255. The permittee shall report that portion of emissions in excess of 100 hours of operation in accordance with 8 CAR § 41-502. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]
256. RESERVED
257. RESERVED
258. RESERVED
259. RESERVED
260. RESERVED
261. RESERVED
262. RESERVED
263. RESERVED

HCl Loading Operation Scenarios

Albemarle has two options for handling the displaced vapors from the loading of the HCl co-product into tanker trucks. The controlled loading operation ultimately results in the displaced vapors to be routed to the Vent Gas Incinerator (SN-21-01) for the NC-21 flame retardant process.

The second option, an uncontrolled HCl loading operation, involves benzene being recovered and recycled from the co-product HCl stream through the use of a distillation column. After being purified, the benzene concentration in the co-product HCl stream will be 30 ppmw or less. The co-product stream can either be routed to intermediate storage or be loaded out via tank truck. Benzene recovered in the distillation column is condensed and combined with other recovered benzene streams for reuse in the NC-21 process unit. The displaced vapors from the trucks are emitted to the atmosphere.

Albemarle has the option of installing the distillation column or not. Specific Conditions #258 through #261 only apply if the distillation column is operated (second option).

Specific Conditions

264. The permittee shall not exceed the emission rates set forth in the following table. Compliance with this condition shall be demonstrated through compliance with Specific Conditions #266 and #267. [8 CAR § 41-401 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
21-04	HCl Loading Operation (Option #2)	VOC	2.2	1.0

265. The permittee shall not exceed the non-criteria emission rates set forth in the following table. Compliance with this condition shall be demonstrated through compliance with Specific Conditions #266 and #267. [8 CAR § 40-701 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
21-04	HCl Loading Operation (Option #2)	Total HAP	N/A	1.29
		Benzene	2.16	0.95
		HCl	N/A	0.34

266. The facility shall use a method approved by the Department to test the HCl co-product stream to demonstrate benzene concentration does not exceed 30 ppmw. The permittee shall conduct subsequent testing on an interval not to exceed 60 months from the previous test. Within 30 days after testing, a copy of the testing information shall be sent to the address below.

Arkansas Department of Environmental Quality
Air Division
Attn.: Air Enforcement
Post Office Box 8913
Little Rock, AR 72219

[8 CAR § 40-902 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

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267. The permittee shall calculate benzene and HCl emissions from the HCl Loading operations once per year. Pound per hour emissions shall be based upon worst-case conditions, and ton per year emissions upon a 12-month period. A copy of the calculations shall be kept on-site and made available to Department personnel upon request. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
268. The permittee shall route all displaced gas from HCl loading operations to SN-21-01 if the concentration of benzene in the co-product stream is greater than 30 ppmw or if the distillation column at SN-24-01 is not installed. As of July 27, 2004, this distillation column has not been installed. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

NC-24 Production

The NC-24 process produces two isomers of a desired alkyl bromide product by reacting the base hydrocarbon olefin with HBr. The HBr comes from South Plant facilities. The olefin is stored under pressure with emissions routed to a flare (SN-AD-26). The reaction takes place in a continuously operated reactor where the reactants are added and the crude product is withdrawn simultaneously. As a continuous reactor under pressure, the reactor has no normal vent during the reaction process.

The crude product contains a mixture of HBr and the two alkyl bromide isomers. The organic product is washed with water in the Wash Column (SN-24-01) to remove the residual HBr. HBr is preferentially absorbed into the aqueous phase forming an aqueous acid stream. The organic product retained in the wash water acid is recovered in the Acid Stripper by routing the stripper overheads back to the Wash Column. The organic product is dewatered in the Organic Dryer, and residual organic or acid in the dryer over heads are recovered in the Wash Column. The stripped acid will be stored in the Wash Water Tank (SN-CB-10) before being used elsewhere at the South Plant. The dewatered crude product will be sent downstream for further processing.

After being dewatered, the crude product is fed to two distillation columns in series. The back-end processes operate with two Refrigerated Vent Condensers (SN-TB-25) used to recover product and raw material. The two columns are designed to separate the two alkyl bromide isomers into two distinct product streams and one organic waste stream. One of the isomers is blended with a small amount of 1,2-epoxybutane, and both isomers are stored before being loaded for sale. The organic waste is drummed and will be shipped off-site for processing. Emissions from all of the product purification, storage, and loading operation will be routed to the Refrigerated Vent Condensers (SN-TB-25).

NC-24 Production Alternate Scenario –Periods of No Reaction

When the reactor loses the reaction, the raw material vapors (propylene and hydrogen bromide) may build up and must be vented before re-initiating the reaction. The vapors are vented to the Wash Column (SN-24-01), which absorbs the hydrogen bromide just as in the primary operating scenario. Propylene will pass through the wash column unaffected.

The process will be controlled such that the flaring (SN-AD-26) and depressurization of the reactor will not occur at the same time. The pressure control valve on the NC-24 reactor is designed to allow no more than 48.5 lb/hr of VOC which is the same rate VOC would otherwise be routed to the flare in the primary operating scenario.

Specific Conditions

269. The permittee shall not exceed the emission rates set forth in the following table. [8 CAR § 41-401 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
24-01	Wash Column (Primary Operating Scenario)	VOC	48.5	21.4
24-01	Wash Column (Alternate Scenario)	VOC	48.5	0.6
24-02	NC-24 Fugitives	VOC	1.2	5.1

SN-#	Description	Pollutant	lb/hr	tpy
AD-26	ADMA Flare*	PM ₁₀	0.8	0.1
		SO ₂	0.1	0.1
		VOC	48.5	0.6
		CO	18.9	0.3
		NO _x	3.5	0.1
TB-25	Refrigerated Vent Condensers	VOC	47.7	5.8

* SN-AD-26 is not operated as an emergency control device in this scenario. Therefore, the operation of this source does not need to be reported as an upset condition as is required under the Alkyl Amines Process (Specific Conditions #61 and #62)

270. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [8 CAR § 40-701 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
24-01	Wash Column*** (Primary Operation Scenario)	Acetone	N/A	0.10
		HBr	0.10	0.50
		Total HAP	N/A	0.60
		HCl	N/A	0.50
24-01	Wash Column*** (Alternate Scenario)	Acetone	N/A	0.10
		HBr	0.10	0.50
		Total HAP	N/A	0.50
		HCl	N/A	0.50
24-02	NC-24 Fugitives	Acetone	N/A	0.10
		HBr	0.1	0.40
		Total HAP	N/A	0.90
		HCl	N/A	0.20
AD-26*	Emergency Flare**	PM	0.8	0.1
		Benzene	0.01	0.01
		Total HAP	N/A	0.01
TB-25*	Refrigerated Vent Condensers	Acetone	N/A	0.10
		HBr	0.10	0.10
		Total HAP	N/A	0.30
		HCl	N/A	0.20

* This source is used in other production/operating scenarios. The emission limits listed above are only applicable to NC-24 production.

** SN-AD-26 is not operated as an emergency control device in this scenario. Therefore, the operation of this source does not need to be reported as an upset condition as is required under the Alkyl Amines Process (Specific Conditions #61 and #62)

*** The limits are the total emissions between the two operating scenario.

271. The permittee shall demonstrate compliance with the hourly emission limits for SN-24-01 by maintaining a daily average chilled water flow of 2,200 lb/hr or greater and a daily average chilled water temperature of 65 °F or less. [8 CAR § 41-605, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]

272. The permittee shall demonstrate compliance with the hourly emission limits for SN-TB-25 by maintaining a daily average glycol coolant temperature less than or equal to 40 °F while receiving vapors from the process. [8 CAR § 41-605, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]
273. The permittee shall maintain daily records which demonstrate compliance with the minimum flow rate of water and maximum temperatures specified in Specific Conditions #271 and #272. These records shall be kept onsite and be made available to Department personnel upon request. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]
274. The permittee shall not produce more than 9,452 metric tons (10,418.9 tons) per year of NC-24 product. [8 CAR § 41-605, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]
275. The permittee shall not use more than 50,000 gallons per year of 1,2-Epoxybutane products. [8 CAR § 41-605, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]
276. The permittee shall maintain monthly records demonstrating compliance with Specific Conditions #274 and #275. Records shall be updated by the 15th day following the month to which the records pertain, made available to Department personnel upon request, and otherwise in accordance with General Provision 7. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]
277. The permittee shall maintain records of each raw material venting event to SN-AD-26. These records shall contain the date, time, duration of each event, and total duration per rolling twelve month period. If the total duration exceeds 24 hours in any twelve (12) month period, then the permittee shall calculate the emissions for each event in order to demonstrate compliance with the limits in Specific Conditions #269 and #270. These records shall be updated following each event, kept onsite and made available to Department personnel upon request. Specific Conditions #61 and #62 of the ADMA section of this permit do not apply during the NC-24 alternate operating scenario. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]
278. The permittee shall maintain records of each raw material venting event to SN-24-01. These records shall contain the date, time, duration of each event, and total duration per rolling twelve month period. The permittee shall calculate the VOC, HBr, and HCl emissions for each event in order to demonstrate compliance with the limits in Specific Conditions #269 and #270 when operating under the alternate operating scenario. These records shall be updated following each event, kept onsite and made available to Department personnel upon request. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]

Vent Gas Incinerator (SN-21-01) and Vent Gas Oxidizer (SN-16-18) Testing Scenario

During the alternate testing scenario, all normal process operations at the NC-17 or NC-21 process units will be shutdown except for the vent gas oxidizer (SN-16-18) or vent gas oxidizer (SN-21-01), which will be fed a known mass feed rate in a synthetic vent stream in order to simulate worst-case inlet pollutant loading.

Specific Conditions

279. The permittee shall not exceed the emission rates set forth in the following table. These emission limits are applicable only for the purpose of conducting performance tests to determine if the control devices can comply with the emission standards in 40 CFR Part 63, Subpart FFFF while operating at worse case conditions. [8 CAR § 41-401 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/day
21-01	Vent Gas Incinerator	VOC	41.1
		Benzene	41.1
16-18	Vent Gas Oxidizer	VOC	27.4
		HAP	24.0

280. The permittee shall perform all testing under this scenario identified as the worst case operating conditions and test methods according to the site specific test plan that has been approved by the EPA. Testing under this condition shall not exceed 72 hours and requires prior approval from ADEQ. Testing was completed for SN-21-01 and SN-16-18 on April 30, 2008 and April 16, 2008 respectively. [8 CAR § 40-902 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
281. The permittee shall submit to ADEQ Air Division Enforcement a notice at least 15 days in advance of this testing. This notice shall be signed by the plant manager and shall contain the following: [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
- Identification of the source to be tested;
 - A detailed description of the test conditions;
 - Anticipated duration of the test;
 - Sampling frequency;
 - Total amount of hazardous air pollutant to be feed to the tested source;
 - A copy of the site specific test plan, and if applicable, any related correspondence to or from EPA regarding the site-specific test plan;
 - The anticipated date of the test; and
 - An affidavit signed by the plant manager to immediately cease feeding hazardous air pollutants to either of the sources if the limit in Specific #279 will be exceeded before the anticipated duration of the test.

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282. The permittee shall within 30 days of completing the performance test submit a complete test report and calculations that demonstrate emissions did not exceed the limits in Specific Condition #279. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

NC-15 Area Scrubber (SN-15-12) Testing Scenario

During the alternate testing scenario, the SN-15-12 will be tested while using fresh water instead of a caustic solution in the final spray step.

Specific Conditions

283. The permittee shall not exceed the emission rate set forth in the following table. This emission limit is applicable only for the purpose of testing the scenario when the media in the final spray step is fresh water rather than caustic solution. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/day
15-12	NC-15 Area Scrubber	Br ₂	26.16
		HBr	26.16

284. The permittee shall conduct stack testing for bromine at SN-15-12 during the scenario identified in Specific Condition #283. The testing shall be conducted using EPA Reference Method 26A. Testing under this condition require prior approval from ADEQ. Testing was completed for SN-15-12 on August 14, 2008. [8 CAR § 40-902 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
285. The permittee shall submit to ADEQ Air Division Enforcement a notice at least 15 day in advance of this testing. This notice shall be signed by the plant manager and shall contain the following: [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
- Identification of the source to be tested
 - A detailed description of the test conditions
 - Anticipated duration of the test
 - Sampling frequency
 - An affidavit signed by the plant manager to immediately return to spraying caustic solution instead of fresh water if the limit in Specific #283 will be exceeded before the anticipated duration of the test or through the combination of the test and normal operation in any consecutive 24 hour period.
286. The permittee shall within 30 days of completing the performance test submit a complete test report and calculations that demonstrate emissions did not exceed the limits in Specific Condition #283. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

Methyl Bromide Production at NC-23

Methyl bromide (MeBr) is produced by reacting hydrogen bromide with methanol. The reaction product is purified to isolate MeBr. The MeBr is compressed into the liquid state, and temporarily stored before being unloaded into railcars. The vapors from the storage tanks, processing equipment, and transfer operations are controlled by a product recovery system, where the MeBr is recovered and sent back to the purification process. Therefore, the methyl bromide recovery unit also serves as the emission control device for the process. The unreacted methanol (in water solution) is sent to the methanol recovery system, where the methanol is recovered and sent back to be used as feedstock for the reaction.

Under an alternate methanol recovery scenario, methanol introduced in the MeBr recovery system is also routed to the methanol recovery system where the methanol is recovered and recycled for use as feedstock. The water left over from methanol recovery has brine value and; therefore, is piped to the bromine recovery process. Thus, HON process wastewater stream is not generated.

Methyl bromide is a Class I, Group VI, ozone depleting substance (ODS). 40 CFR Part 82, Subpart A, is applicable to the MeBr process. During MeBr production, affected sources in this unit are also subject to the requirements of 40 CFR Part 63, Subparts F, G, and H.

Compliance with permitted emission rates in the NC-23 process area while producing MeBr shall be demonstrated through stack testing, parametric monitoring, and record keeping requirements.

Specific Conditions

287. The permittee shall not exceed the emission rates set forth in the following table. [8 CAR § 41-401 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
23-01	NC-23 Fugitives (<i>NC-23 MeBr Production Scenario</i>)	VOC	2.4	10.3
23-03	Raw Material Scrubber (<i>NC-23 MeBr Production Scenario</i>)	VOC	27.4	1.7
23-05	Vent Absorber (<i>NC-23 MeBr Production Scenario</i>)	VOC	1.6	7.0
23-16	Spent Sulfuric Acid Storage Tank (<i>NC-23 MeBr Production Scenario</i>)	VOC	0.1	0.1
23-17	Refrigerant Water Storage Tank (<i>NC-23 MeBr Production Scenario</i>)	VOC	0.1	0.1
23-18	Refrigerant Water Storage Tank (<i>NC-23 MeBr Production Scenario</i>)	VOC	0.1	0.1
TB-25	Refrigerated Vent Condensers (<i>NC-23 MeBr Production Scenario</i>)	VOC	0.5	2.0

288. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [8 CAR § 40-701 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
23-01	NC-23 Fugitives (NC-23 MeBr Production Scenario)	Total HAP	N/A	8.50
		Methanol	0.97	4.25
		Methyl Bromide	0.97	4.25
23-03	Raw Material Scrubber (NC-23 MeBr Production Scenario)	Total HAP	N/A	1.68
		Methanol	27.37	1.68
23-05	Vent Absorber (NC-23 MeBr Production Scenario)	Total HAP	N/A	5.80
		Methanol	0.40	1.80
		Methyl Bromide	0.90	4.00
23-16	Spent Sulfuric Acid Storage Tank (NC-23 MeBr Production Scenario)	H ₂ SO ₄	0.01	0.05
		Total HAP	N/A	0.10
		Methanol	0.10	0.10
23-17	Refrigerant Water Storage Tank (NC-23 MeBr Production Scenario)	Total HAP	N/A	0.01
23-18	Refrigerant Water Storage Tank (NC-23 MeBr Production Scenario)	Total HAP	N/A	0.01
TB-25	Refrigerated Vent Condensers (NC-23 MeBr Production Scenario)	Total HAP	N/A	2.00
		Methanol	0.45	2.00
TB-30	Fresh Sulfuric Acid Storage Tank (NC-23 MeBr Production Scenario)	H ₂ SO ₄	0.01	0.05

289. The following sources are subject to Subparts F, G, and H (the HON rule). The permittee shall comply with all applicable requirements of the HON, including but not limited to the requirements listed in this permit. [8 CAR § 41-204 and 40 C.F.R. § 63]

Source Number [‡]	Name	HON Source Type	HON Group
23-01	NC-14 Fugitive Emissions	Equipment Leaks	NA (Subpart H)
23-03	Methanol Feed Storage Tank	Storage Vessel	Group 1
23-05	Methyl Bromide Recovery Unit	Process Vent	Group 2
N/A	Methyl Bromide Transfer Rack*	Transfer Operation	Group 1
N/A	Methyl Bromide Storage Tank D-8725*	Storage Vessel	Group 2
N/A	Methyl Bromide Storage Tank D-8726*	Storage Vessel	Group 2
N/A	Methyl Bromide Rundown Tank*	Storage Vessel	Group 2
N/A	Methanol Recovery Column Feed Tank (D-22)*	N/A (See below)	N/A
TB-25	Methanol Recovery Column Vent	Process Vent	Group 2
WW-01	Methanol Recovery Column Water Discharge	Wastewater	Group 2

* These sources are routed to SN-23-05.

‡ SN-23-16 emits methanol which is a HON regulated pollutant. The storage tank is not subject to HON requirements because methanol occurs as an impurity. The for the purpose of the HON the definition for storage vessel excludes vessels storing organic liquids that contain organic hazardous air pollutants only as impurities.

General HON Related Conditions

290. The requirements of Subparts G and H apply at all times, except during periods of startup, shutdown, malfunction, or non-operation of the unit resulting in cessation of emissions to which Subparts F and G apply. [8 CAR § 41-204 and 40 C.F.R. § 63.102(a)]
291. The permittee shall develop, implement, retain, and revise (as necessary) a written startup, shutdown, and malfunction (SSM) plan that describes, in detail, procedures for operating and maintaining the affected sources during SSM and a program of corrective action for malfunctioning process and air pollution control equipment used to comply with the relevant standard. The SSM plan and any revision to the plan are incorporated by reference and are enforceable as a term and condition of this permit. Any revisions to the plan are automatically incorporated by reference and do not require a permit revision. [8 CAR § 41-204 and 40 C.F.R. § 63.6(e)(3)]
292. The permittee shall submit a Notification of Compliance Status (NCS) within 150 calendar days after initial start-up of the methyl bromide production unit. [8 CAR § 41-204 and 40 C.F.R. § 63.152(b)]
293. All required Periodic Reports shall be submitted semi-annually no later than 60 days after the end of each 6-month period. Reports shall be submitted no later than 8 months after the date the NCS is due, and shall cover the 6-month period beginning on the date the NCS is due. Subsequent reports are due every six months after the date that the first report was due as long as the MeBr unit operates in this unit. [8 CAR § 41-204 and 40 C.F.R. § 63.152(c)(1)]

MeBr Process Vent Conditions

294. The permittee shall recalculate, as applicable, the TRE index value, flow, or organic hazardous air pollutants concentration for each Group 2 process vent whenever process changes are made that could reasonably be expected to change the vent to a Group 1 vent. [8 CAR § 41-204 and 40 C.F.R. § 63.115(e)]
295. The NCS shall include documentation of all assumptions and procedures used to determine the TRE index value for the methyl bromide recovery unit process vent (SN-23-05). [8 CAR § 41-204 and 40 C.F.R. § 63.117(b)]
296. The NCS shall include documentation of all assumptions and procedures used to determine the TRE index value for the methanol recovery column process vent (SN-TB-25). [8 CAR § 41-204 and 40 C.F.R. § 63.117(d)]
297. Emissions during methyl bromide production shall not exceed the limits listed in the following table. Compliance with these emission limits shall be demonstrated by complying with monitoring, reporting, and record keeping requirements of the HON. [8 CAR § 41-204 and 40 C.F.R. § 63 Subpart G]

SN-#	Description	Pollutant	lb/hr	tpy
23-05	Vent Absorber (NC-23 MeBr Production Scenario)	Total HAP	N/A	5.80
		Methanol	0.40	1.80
		Methyl Bromide	0.90	4.00
TB-25	Refrigerated Vent Condensers (NC-23 MeBr Production Scenario)	Total HAP	N/A	2.00
		Methanol	0.45	2.00

MeBr Storage Vessel Conditions

298. RESERVED

299. The permittee shall keep readily accessible records for each Group 1 or Group 2 storage vessel showing the dimensions of the storage vessel, and an analysis showing the capacity of the storage vessel. This record shall be kept as long as the storage vessel retains Group 1 or Group 2 status and is in operation. [8 CAR § 41-204 and 40 C.F.R. § 63.123(a)]

300. The water scrubber associated with the methanol storage tank (SN-23-03) shall reduce emissions of total organic HAP by 95 weight percent. Compliance with this condition shall be demonstrated by the design evaluation included in the NCS and by compliance with Specific Condition #301. The methanol storage tank (SN-23-03) shall be vented to the associated water scrubber at all times, except for the 240 hours per year allowable under 40 CFR §63.119(e). [8 CAR § 41-204 and 40 C.F.R. § 63.119(e)]

301. The permittee shall monitor the daily average flow to demonstrate compliance with the monitoring plan requirements for storage tanks and maintain records of the results of required monitoring. [8 CAR § 41-204 and 40 C.F.R. § 63.120(d)(2)(i)]

Note: A design evaluation showed 500 lb/hr of scrubber water flow will be sufficient to meet the 95% control requirement.

MeBr Transfer Operations

302. The methyl bromide recovery unit (SN-23-05) shall be operated at all times when organic HAPs are vented to it. Any deviation from this condition shall be reported in the start-up, shutdown, and malfunction reports required under 40 CFR §63.10(d)(5). [8 CAR § 41-204 and 40 C.F.R. § 63.126(a)(3)]

303. The methyl bromide recovery unit (SN-23-05) shall reduce emissions of total organic HAPs from methyl bromide loading operations by 98 weight percent. Compliance with this condition is demonstrated by the design evaluation included in the NCS and by compliance with Specific Conditions #304 and #305. [8 CAR § 41-204 and 40 C.F.R. § 63.126(b)]

304. The permittee shall maintain a liquid mass flow rate (in lb/hr) to gas mass flow rate (in lb/hr) ratio in the absorber column of the methyl bromide recovery unit (SN-23-05) equal to or greater than 5.7. [8 CAR § 41-204, 40 C.F.R. §§ 63.126(b) and 63.127(e)]

305. The permittee shall maintain a temperature in the methyl bromide stripper of the methyl bromide recovery unit (SN-23-05) equal to or greater than 170 °F at the top of the

stripping section at the operating pressure of 25 psia. [8 CAR § 41-204, 40 C.F.R. §§ 63.126(b) and §63.127(e)]

306. The permittee shall comply with all applicable requirements related to methyl bromide transfer operations. [8 CAR § 41-204, 40 C.F.R. §§ 63.126(f), (g), (h), and (i)]
307. The permittee shall maintain continuous (as defined in §63.111) records of absorber liquid-to-gas ratio and stripper overhead temperature while the transfer stream is being vented to the methyl bromide recovery unit, and shall maintain records of the daily average value for each parameter for each operating day. [8 CAR § 41-204 and 40 C.F.R. § 63.130(a)]
308. The permittee shall submit Periodic Reports as specified in §63.130(d). [8 CAR § 41-204 and 40 C.F.R. § 63 Subpart G]
309. The permittee shall maintain the DOT tank certification or Method 27 testing records as required by §63.130(e). [8 CAR § 41-204 and 40 C.F.R. § 63 Subpart G]
310. The permittee shall annually update and maintain, in a readily accessible location on-site, the transfer rack information required in 40 CFR §63.130(f). [8 CAR § 41-204 and 40 C.F.R. § 63 Subpart G]

MeBr Wastewater Conditions, if wastewater is generated (Note: If wastewater is generated, the only organic HAP it will contain above trace quantities is methanol)

311. The permittee shall submit the SN-WW-01 information as required in Table 15 of Subpart G with the NCS. [8 CAR § 41-204 and 40 C.F.R. § 63.146(b)(2)]
312. The permittee shall keep readily accessible records documenting how process knowledge was used to determine the annual average organic HAP concentration and/or annual average flow rate of SN-WW-01. [8 CAR § 41-204 and 40 C.F.R. § 63.147(f)]

MeBr Equipment Leaks

313. The permittee shall comply with all applicable sections of §63.160 through §63.182. [8 CAR § 41-204 and 40 C.F.R. § 63 Subpart H]

Ozone Depleting Substance (ODS)

314. The permittee may not produce methyl bromide at any time in a control period (except that are transformed or destroyed domestically or by a person of another Party) in excess of the of conferred unexpended essential use allowances or exemptions, or in excess of the amount of unexpended critical use allowances, or in excess of the amount of unexpended Article 5 allowances as allocated under §82.9 and §82.11. [8 CAR § 41-204 and 40 C.F.R. § 82 Subpart A, Paragraph 82.4(a) (see Appendix A)]
315. The permittee may not import (except for transshipments or heels), at any time in any control period, (except for controlled substances that are transformed or destroyed) in excess of the amount of unexpended essential use allowances or exemptions, or in excess of unexpended critical use allowances held. [8 CAR § 41-204 and 40 C.F.R. § 82 Subpart A, Paragraph 82.4(c)]

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316. Production and consumption allowances may be adjusted by the procedures in paragraphs §82.9, §82.10, §82.11, and §82.12. [8 CAR § 41-204 and 40 C.F.R. § 82 Subpart A]
317. The permittee shall conform with the record keeping and reporting practices for methyl bromide as outlined in Paragraph §82.13. [8 CAR § 41-204 and 40 C.F.R. § 82 Subpart A]
318. All containers in which methyl bromide is stored or transported must be labeled as outlined in Paragraphs 82.106, 82.108, and 82.110. [8 CAR § 41-204 and 40 C.F.R. § 82 Subpart A]
319. Producer Quarterly Reports must be mailed to the Administrator within 45 days of each calendar quarter, as outlined in Paragraphs 82.13(c) and 82.13(f)(3). [8 CAR § 41-204 and 40 C.F.R. § 82 Subpart A]

Bromine Recovery Unit

The Bromine Recovery Unit (BRU) collects brominated organics and recovers bromine for use in other processes. The BRU is fed via hard-piped transfer lines, tanker trucks, totes and drums. The feed streams are collected in the feed tank, and the vapors from the feed tank are feed to the burner for destruction. The liquid from the feed tank is atomized by co-current steam flow before being converted to bromine, hydrogen bromide, carbon dioxide, and water in the Thermal Oxidizer (TO). At maximum flow, the TO provides a destruction efficiency of 99.9% while operating at 1,750 °F to 2,200 °F. The hot exit-gas stream enters the Quench System (contactor and quench tank). Inside the stream reaches its saturation point and brine sprays condition the stream and absorb most of the HBr. The cooled stream is then feed to the Br₂ scrubber where the remaining bromine is removed by brine. The scrubbed combustion gases exit the scrubber and are emitted to the atmosphere.

320. The permittee shall not exceed the emission rates set forth in the following table. [8 CAR § 41-401 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
33-01	BRU Scrubber	PM ₁₀	1.9	6.5
		SO ₂	0.1	0.4
		VOC	5.2	22.5
		CO	1.7	7.3
		NO _x	8.8	38.1
33-02	BRU Fugitives	VOC	1.2	5.2
33-03	Dust Collection Filter (Bulk Bag Feeder System)	PM ₁₀	0.1	0.5

321. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [8 CAR § 40-701 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
33-01	BRU Scrubber	PM	1.9	6.5
		Br ₂	1.00	4.40
		HBr	0.10	0.40
		H ₂ S	1.60	7.00
		Total HAP	N/A	17.20
		Benzene	1.04	4.54
		HCl	0.20	0.88
		Hydrazine	N/A	0.35
		Methylene Chloride	N/A	0.05
33-02	BRU Fugitives	Br ₂	0.01	0.03
		HBr	0.02	0.09
		Total HAP	N/A	0.05
		Benzene	0.01	0.01
33-03	Dust Collection Filter (Bulk Bag Feeder System)	PM	0.1	0.5

SN-#	Description	Pollutant	lb/hr	tpy
33-04	Hydrazine Hydrate	Total HAP	N/A	0.01
	Tote	Hydrazine	N/A	0.01

322. Visible emissions at SN-33-01 and SN-33-03 shall not exceed 5% opacity. The permittee shall comply with Plantwide Condition #11 for opacity readings. [8 CAR § 40-401 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
323. The permittee shall not feed more than 1,380 pounds per hour from the BRU feed tank to the thermal oxidizer. [8 CAR § 41-605, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]
324. The permittee shall maintain records to demonstrate compliance with Specific Condition #323. The permittee shall calculate the average feed rate to the BRU for each of the eight 3-hour blocks in the operating day. Each of these 3-hour block averages will be compared to the mass feed rate limit in Specific Condition #323. The permittee shall update these records by the fifteenth day of the month following the month to which the records pertain, be made available to Department personnel upon request, and submitted in accordance with General Provision #7. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]
325. The permittee shall maintain the thermal oxidizer at a minimum 1,750 °F per hourly rolling average with a minimum residence time of two seconds when combusting material other than natural gas. [8 CAR § 41-605, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]
326. The permittee shall continuously measure and record the temperature at the thermal oxidizer at all times that the BRU is receiving or combusting materials other than natural gas. These records shall be kept on-site and made available to Department personnel upon request. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]
327. The permittee shall maintain a minimum total flow rate of scrubber media of 350 gallons per minute and maintain a minimum total flow rate of scrubber media at the top section of the scrubbing column of 150 gallons per minute at SN-33-01. [8 CAR § 41-605, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]
328. The permittee shall measure and record the scrubber media flow rates once combustion of material other than natural gas begins and every four hours thereafter while the BRU is in bromine recovery. These records shall be kept on-site and made available to Department personnel upon request. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]
329. The permittee shall not use more than 20 gallons per minute of process water nor shall it contain more than 148 milligrams solids per liter except as provided the following paragraph for evaporative cooling at SN-33-01. The process water shall not contain VOCs or HAPs. [8 CAR § 41-605, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]
 - a. The permittee may increase the quench water rate above the stated 20 gallons per minute provided that the quench water flow rate times the most recent measured TDS

concentration falls below the permitted particulate matter emission hourly emission limit in Specific Condition #321 as calculated in the following equation. In the event subsequent testing indicates a higher TDS concentration than previously sampled, the permittee must recalculate emissions according to the equation and adjust the flow downward as necessary to satisfy following equation.

$$\text{Measured TDS Conc.} \times \text{Quench Evaporation Rate} < 1.90 \text{ lb/hr}$$

[8 CAR § 41-605, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]

- b. The permittee shall calculate particulate emissions for each day of operation under Specific Condition #323.a. and maintain a twelve month rolling total for any twelve month period that the quench water flow rate has exceeded 20 gallons per minute on an hourly basis. These records shall be kept onsite and be made available to Department personnel upon request. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]
330. The permittee shall continuously measure and record the flow rate of the evaporative cooling water at all times when the BRU is in bromine recovery. These records shall be kept on-site and made available to Department personnel upon request. [8 CAR § 41-603, 40 C.F.R. § 52 Subpart E, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
331. The permittee shall maintain weekly records of the total dissolved solids concentration of the evaporative cooling water. Upon obtaining four consecutive weekly samples which show compliance with the TDS limit above, the permittee may reduce the frequency of sampling to once per month. Upon obtaining three monthly samples which show compliance with the TDS limit above, the permittee may reduce the frequency of sampling to one per quarter on a permanent basis. Any sampling that results in a TDS concentration above the permitted amount shall require the permittee to resume weekly testing. All records of sampling shall be kept on-site and made available to Department personnel upon request. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]
332. The permittee shall not exceed a flow rate of 10,512,000 gallons of process water used for evaporative cooling at the BRU per consecutive 12-month period. [8 CAR § 41-605, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]
333. The permittee shall maintain a 12-month rolling total which demonstrate compliance with Specific Condition #326. These records shall be kept on-site, made available to Department personnel, and otherwise kept in accordance with General Provision #7. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]
334. The permittee shall test SN-33-01 for the pollutants identified below in accordance with Plantwide Condition #3 in order to demonstrate compliance with the permit limits. This testing must be completed by November 1, 2013. The permittee may request alternate test methods provided that the request is submitted to the Compliance Inspector Supervisor at least 30 days in advance of planned testing. Any alternate method must receive Department approval prior to the testing event. [8 CAR § 40-902 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

Pollutant	Test Method	Initial Test (Year)	Frequency
VOC	25A	2013	Every Calendar Year
HCl	26A	2013	Every Calendar Year
Br ₂	26A	2013	Every 5 Calendar Years

335. The permittee shall identify the processes from which the brominated organic compounds originated. Receipt of offsite material at the BRU is prohibited except as provided in Specific Condition #329.a. The permittee shall keep monthly records of the amount and composition of each stream containing the brominated compounds. These records shall be kept on-site and made available to Department personnel upon request. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]
- a. The permittee shall only receive offsite material that was produced at facilities owned and operated by Albemarle Corporation. The permittee shall maintain records identifying the originating facility and associated process for each shipment. The same recordkeeping requirements stated in Specific Condition #329 apply to shipments. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]
336. The permittee shall not combust hazardous waste in the BRU. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
337. The permittee shall maintain a fabric filter with a removal efficiency of 99.93% for particulate matter less than 3 microns at SN-33-03. The permittee shall inspect the filter monthly to ensure the dust collector is operating properly and replace the filter if necessary or per manufacturer's recommendation. The permittee will record the results of each inspection by the 15th of the following month and make these records available to Department personnel upon request. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]

MON MACT Affected Sources

Miscellaneous Organic Chemical Processing Units (MCPU)

The following MCPUs exist at the facility and are subject to the requirements of 40 CFR Part 63, Subpart FFFF:

MON Affected MCPUs	Page Number
Alkyl Amines (ADMA) Unit	143
DMTDA Unit	144
NC-12 Unit	146
NC-15 Unit	146
NC-17 Unit	146
NC-18 Unit (BT-93W Process Only)	147
NC-21 Unit	150
NC-22 Unit	153
NC-23 Unit	154
NC-24 Unit	155

Generally Applicable Subpart A and MON MACT Requirements

The following section outlines the requirements that are generally applicable since at least one MON-affected process unit exists at this facility. Applicable 40 CFR 63, Subpart A general provisions and the generally applicable provisions of 40 CFR Part 63, Subpart FFFF include but are not limited to the following conditions.

Specific Conditions

338. The permittee will comply with the applicable provisions as specified in Title 40 of the Code of Federal Regulations (CFR), Part §63, Subpart A - *General Provisions*. [8 CAR § 41-204 and 40 C.F.R. § 63 Subpart A]
339. For the MON-affected process units, the permittee must be in compliance with the MON at all times, except during periods startup, shutdown, and malfunction. [8 CAR § 41-204 and 40 C.F.R. § 63.2450(a)]
340. The permittee must not exclude monitoring data taken during startup, shutdown, or malfunction. [8 CAR § 41-204 and 40 C.F.R. § 63.2450(1)]
341. Opening of a safety device is allowed at any time to avoid unsafe conditions. [8 CAR § 41-204 and 40 C.F.R. § 63.2450(p)]
342. The permittee must submit an initial notification not later than 120 calendar days after November 10, 2003. The permittee complied with this requirement on March 5, 2004. [8 CAR § 41-204 and 40 C.F.R. § 63.2515(b)]
343. If required to conduct a performance test, the permittee must submit a notification of intent to conduct a performance test at least 60 calendar days before the performance test is scheduled to begin as required in §63.7(b)(1). For any performance test required as part of the initial compliance procedures for batch process vents in Subpart FFFF Table 2 - *Emission Limits and Work Practice Standards for Batch Process Vents*, the permittee

- must submit the test plan required by §63.7(c) and the emission profile with the notification of the performance test. [8 CAR § 41-204 and 40 C.F.R. § 63.2515(c)]
344. The permittee must submit a pre-compliance report to request approval for any of the items in §63.2520(c)(1) through (7). Changes in this information must be submitted 60 days before the planned change is to be implemented. [8 CAR § 41-204 and 40 C.F.R. § 63.2520(c)]
345. The permittee must submit the notification of compliance status report no later than 150 days after the applicable compliance date specified in §63.2445. The notification of compliance status report must include the information in §63.2520(d)(2)(i) through (ix). [8 CAR § 41-204 and 40 C.F.R. § 63.2520(d)(1)]
346. The compliance report must contain the information specified in §63.2520(e)(1) through (10). The initial compliance report may be submitted according to the schedule given in §63.2520(b)(1) through (b)(4). Subsequent compliance reports will be submitted with the annual compliance certification and semiannual monitoring reports as allowed under §63.2520(b)(5). [8 CAR § 41-204 and 40 C.F.R. § 63.2520(e)]
347. Except as specified in §63.2520(e)(10)(ii), whenever a process change, or change in any of the information submitted in the notification of compliance status report or a previous compliance report is made, that is not within the scope of an existing operating scenario, the permittee must document the change in the compliance report. The notification must include all of the information in §63.2520(e)(10)(i)(A) through (C). [8 CAR § 41-204 and 40 C.F.R. § 63.2520(e)(10)(i)]
348. The permittee must submit a report 60 days before the scheduled implementation date of any of the changes identified below. [8 CAR § 41-204 and 40 C.F.R. § 63.2520(e)(10)(ii)]
- a. Any change to the information contained in the pre-compliance report.
 - b. Changes in the status of a control device from small to large.
 - c. Changes from Group 2 to Group 1 for any emission point except for batch process vents that meet the conditions specified in §63.2460(b)(6)(i).
349. The permittee must keep a schedule or log of operating scenarios for processes with batch vents from batch operations updated each time a different operating scenario is put into effect. The permittee must keep the records of each operating scenario as specified in §63.2525(b)(1) through (8). [8 CAR § 41-204, 40 C.F.R. §§ 63.2525(b) and (c)]
350. If the permittee chooses to control any vents to less than the percent reduction requirement, the permittee must retain the information specified in §63.2525(d)(I) and (2) for Group 1 batch process vents in compliance with a percent reduction emission limit in Subpart FFFF Table 2 – *Emission Limits and Work Practice Standards for Batch Process Vents*. [8 CAR § 41-204 and 40 C.F.R. § 63.2525(d)]
351. For any of the MON-affected process units, the permittee must record each time a safety device is opened to avoid unsafe conditions in accordance with §63.2450(s). [8 CAR § 41-204 and 40 C.F.R. § 63.2525(f)]

352. For any of the MON-affected process units with MON-required CPMS, the permittee must record the results of each CPMS calibration check and the maintenance performed, as specified in §63.2450(k)(1). [8 CAR § 41-204 and 40 C.F.R. § 63.2525(g)]
353. In the SSMP required by §63.6(e)(3), the permittee is not required to include Group 2 emission points, unless those emission points are used in an emissions average. The permittee does not use emissions averaging at this time. For equipment leaks, the SSMP requirement is limited to control devices and is optional for other equipment. [8 CAR § 41-204 and 40 C.F.R. § 63.2525(j)]

Closed Vent System Requirements for MON-required Control Devices

354. Each closed vent system must be designed and operated to collect the regulated material vapors from the emission point, and to route the collected vapors to a control device. Closed vent systems used for compliance must be operated at all times when emissions are vented to, or collected by, them. Except for equipment needed for safety purposes, the permittee must comply with the provisions of either §63.983(a)(3)(i) or (ii) for each closed vent system that contains bypass lines that could divert a vent stream to the atmosphere. The permittee must keep a record of the information specified in either §63.998(d)(1)(ii)(A) or (B), as applicable, for closed vent system bypass lines. [8 CAR § 41-204, 40 C.F.R. §§ 63.983(a)(1), (a)(2), and (a)(3)]
355. For closed vent systems collecting regulated material from a regulated source, the permittee must record the identification of all parts of the closed vent system, that are designated as unsafe or difficult to inspect, an explanation of why the equipment is unsafe or difficult to inspect, and the plan for inspecting the equipment required by §63.983(b)(2)(ii) or (iii). [8 CAR § 41-204, 40 C.F.R. §§ 63.983(b)(2) and 63.998(d)(1)(i)]
356. For all initial leak inspections, the instrument probe must be traversed around all potential leak interfaces as described in Method 21 of 40 CFR part 60, appendix A. Each closed vent system must be inspected according to the procedures specified in §63.983(c)(1)(i) through (vii). [8 CAR § 41-204, 40 C.F.R. §§ 63.983(c)(1) and (c)(2)]
357. If there are visible, audible, or olfactory indications of leaks at the time of the annual visual inspections required by §63.983(b)(1)(i)(B), the permittee must follow the procedure specified in either §63.983(d)(1)(i) or (ii). [8 CAR § 41-204 and 40 C.F.R. § 63.983(d)(1)]
358. Leaks, as indicated by an instrument reading greater than 500 parts per million by volume above background or by visual inspections, must be repaired as soon as practical, except as provided in §63.983(d)(3) which allows delay of repair for the reasons specified therein. Records must be generated as specified in §63.998(d)(1)(iii)(A) through (F) when a leak is detected. Records must be kept according to §63.998(d)(1)(iv) when no leak is detected. [8 CAR § 41-204 and 40 C.F.R. § 63.983(d)(2)]

Monitoring and Recordkeeping Requirements for Control Devices with Continuous Monitoring

359. The following sources – SN-AD-05, SN-16-18, and SN-21-01 were specifically identified as subject to the monitoring and recordkeeping requirements listed below. [8 CAR § 41-204 and 40 C.F.R. § 63.996(c)(1)]
360. When one CPMS is used as a backup to another, the permittee must report the results from the CPMS used to meet the monitoring requirements. If both such CPMS's are used during a particular reporting period, the permittee must report the results from each CPMS for the time period the instrument was relied upon to demonstrate compliance. [8 CAR § 41-204 and 40 C.F.R. § 63.996(b)(2)]
361. All monitoring equipment must be installed, calibrated, maintained, and operated according to manufacturer's specifications or other procedures that provide adequate assurance that the equipment will monitor accurately. [8 CAR § 41-204 and 40 C.F.R. § 63.996(c)(1)]
362. The permittee must maintain and operate each CPMS as specified in this section (§63.996(c)(2)), or in a relevant subpart, and in a manner consistent with good air pollution control practices. [8 CAR § 41-204 and 40 C.F.R. § 63.996(c)(2)]
- a. The permittee must ensure the immediate repair or replacement of CPMS parts to correct "routine" or otherwise predictable CPMS malfunctions. The necessary parts for routine repairs of the affected equipment must be readily available.
 - b. If under the referencing subpart, the permittee has developed a startup, shutdown, and malfunction plan, the plan is followed, and the CPMS is repaired immediately, this action must be recorded as specified in §63.998(c)(1)(ii)(E).
 - c. The Administrator's determination of whether acceptable operation and maintenance procedures are being used for the CPMS will be based on information that may include, but is not limited to, review of operation and maintenance procedures, operation and maintenance records as specified in §63.998(c)(1)(i) and (ii), manufacturer's recommendations and specifications, and inspection of the CPMS.
363. If the permittee conducts performance tests for this control device, all CPMSs must be installed, operational, and have verification of data before or after conducting performance tests. Verification of operational status includes completion of the manufacturer's written specifications or recommendations for installation, operation, and calibration of the system or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately. [8 CAR § 41-204 and 40 C.F.R. § 63.996(c)(3)]
364. All CPMS's must be installed such that representative measurements of parameters are obtained. [8 CAR § 41-204 and 40 C.F.R. § 63.996(c)(4)]
365. The permittee must continually operate all CPMSs when emissions are being routed to the monitored device, except for system breakdowns, repairs, maintenance periods, instrument adjustments, or checks to maintain precision and accuracy, calibration checks, and zero and span adjustments. [8 CAR § 41-204 and 40 C.F.R. § 63.996(c)(5)]

366. The permittee must establish a range for monitored parameters that indicates proper operation of the control or recovery device. In order to establish the range, the information required in §63.999(b)(3) must be submitted in the Notification of Compliance Status or the operating permit application or amendment. [8 CAR § 41-204 and 40 C.F.R. § 63.996(c)(6)]

367. The permittee may request approval to use alternatives to the continuous operating parameter monitoring and recordkeeping provisions listed in §63.988(c), §63.990(c), §63.993(c), §63.994(c), §63.998(a)(2) through (4), §63.998(c)(2) and (3), as specified in §63.999(d)(1).

In addition, the permittee may request approval to monitor a different parameter than those established or to set unique monitoring parameters if directed by §63.994(c)(2) or §63.995(c), as specified in §63.999(d)(2). [8 CAR § 41-204, 40 C.F.R. §§ 63.996(d)(1) and (d)(2)]

368. If the permittee conducts performance tests for this control device, the permittee must maintain records necessary to determine the conditions of performance tests performed pursuant to §63.988(b). [8 CAR § 41-204 and 40 C.F.R. § 63.998(a)(2)(i)]

369. Where Subpart SS requires a continuous record, the permittee must maintain a record of: [8 CAR § 41-204, 40 C.F.R. §§ 63.998(b)(1) and (b)(2)]

- a. Values measured at least once every 15 minutes or each measured value for systems which measure more frequently than once every 15 minutes or 15-minute block average values or once per minute if measured more frequently.
- b. Where data is collected from an automated continuous parameter monitoring system, the permittee may calculate and retain block hourly average values from each 15-minute block average period or from at least one measured value per minute if measured more frequently than once per minute, and discard all but the most recent three valid hours of continuous (15-minute or shorter) records, if the hourly averages do not exclude periods of CPMS breakdown or malfunction. An automated CPMS records the measured data and calculates the hourly averages through the use of a computerized data acquisition system.
- c. A record as required by an alternative approved under a referencing subpart.
- d. Monitoring data recorded during periods identified in paragraphs (b)(2)(i) and (ii) of this section must not be included in any average computed to determine compliance with an emission limit in a referencing subpart.

370. The permittee must record daily calculated average values of each parameter for each operating day and retain for 5 years. As an alternative, the permittee may record that all parameter values are within the determined range and retain this record for 5 years, rather than calculating and recording daily averages. As an additional alternative, the permittee may implement the recordkeeping requirements in §63.998(b)(5)(i) or (ii). If the permittee chooses the alternative in §63.998(b)(5), the permittee must retain each record required by §63.998(b)(5)(i) or (ii). [8 CAR § 41-204, 40 C.F.R. §§ 63.998(b)(3)(i), (b)(3)(ii), (b)(5), 63.998(c)(2)(i), and 63.998(c)(2)(ii)]

371. The permittee must record procedure used for calibrating the CPMSs. [8 CAR § 41-204 and 40 C.F.R. § 63.998(c)(1)(i)]
372. For a CPMSs used to comply with Subpart SS, the permittee must record the information specified in §63.998(c)(I)(ii)(A) through (H), as indicated in a referencing subpart. [8 CAR § 41-204 and 40 C.F.R. § 63.998(c)(1)(ii)]
373. The permittee must record the results of each calibration check and all maintenance performed on the CPMS as specified in §63.998(c)(I)(ii)(A). [8 CAR § 41-204 and 40 C.F.R. § 63.2450(k)(1)]
374. The permittee must maintain up-to-date, readily accessible records of periods of operation when the parameter boundaries are exceeded and the cause of these periods. [8 CAR § 41-204, 40 C.F.R. §§ 63.998(c)(2)(iii) and (d)(5)]
375. The permittee must record the occurrence and duration of each startup, shutdown, and malfunction (excess emissions) of process or air pollution control equipment. [8 CAR § 41-204 and 40 C.F.R. § 63.998(d)(3)(i)]
376. The permittee must record that the procedures in the source's startup, shutdown, and malfunction plan (SSMP) were followed and document actions taken that are not consistent with the plan for each startup, shutdown, and malfunction (excess emissions) occurrence. [8 CAR § 41-204 and 40 C.F.R. § 63.998(d)(3)(ii)]
377. The permittee is not allowed any excused excursions as described in 40 CFR 63 Subparts G and SS. [8 CAR § 41-204 and 40 C.F.R. § 63.2450(m)(3)]

ADMA Unit

The ADMA process unit produces alkyl amines and uses a caustic scrubber for emission control purposes. In one operating scenario, the scrubber receives a process vent stream from an absorber that is used to make HBr product. The vent stream sent to the scrubber during this scenario contains less than 50 ppmv HAP and is thus exempt. Therefore, the scrubber is not required for compliance with the MON during this scenario.

In the second operating scenario, emissions from the reactor are routed directly to the scrubber and these emissions are greater than 50 ppmv and are greater than 1000 lb/yr HCl/Cl₂. Therefore, the vent is subject to the requirements of Subpart FFFF Table 3 - *Emission Limits for Hydrogen Halide and Halogen HAP Emissions or HAP Metals Emissions from Process Vents* and the scrubber is required to comply with the MON during this operating scenario.

Specific Conditions

378. The permittee must determine and sum the uncontrolled hydrogen halide and halogen HAP emissions from each of the process vents within the process using the procedures specified in §63.1257(d)(2)(i) and/or (ii), as appropriate, for any process vents within a process emit hydrogen halide and halogen HAP. When §63.1257(d)(2)(ii)(E) requires documentation to be submitted in the pre-compliance report, it means the notification of compliance status report. [8 CAR § 41-204 and 40 C.F.R. § 63.2465(b)]
379. If collective uncontrolled hydrogen halide and halogen HAP emissions from the process vents within a process are greater than or equal to 1,000 pounds per year (lb/yr), the

- permittee must comply with §63.994, except as specified in §63.2465(c)(I) through (3). The permittee must meet each emission limit in Table 3 - *Emission Limits for Hydrogen Halide and Halogen HAP Emissions or HAP Metals Emissions from Process Vents* that apply and meet each applicable requirement in §63.2465(b) through (d). [8 CAR § 41-204, 40 C.F.R. §§ 63.2450(e)(3), 63.2465(a), and 63.2465(c)]
380. The permittee must determine if an emission stream is a halogenated vent stream, as defined in §63.2550, by calculating the mass emission rate of halogen atoms in accordance with §63.115(d)(2)(v). Alternatively, the permittee may elect to designate the emission stream as halogenated. [8 CAR § 41-204 and 40 C.F.R. § 63.2450(b)]
381. The permittee must meet the requirements of §63.994 and the requirements referenced therein for halogen reduction devices used to reduce hydrogen halide and halogen HAP emissions from halogenated vent streams. [8 CAR § 41-204 and 40 C.F.R. § 63.2450(e)(3)]
382. Halogen scrubbers and other halogen reduction devices must be operated at all times when emissions are vented to them. [8 CAR § 41-204 and 40 C.F.R. § 63.994(a)(2)]
383. When §63.994(b)(1) requires a performance test, the permittee may elect to conduct a design evaluation in accordance with §63.1257(a)(1). If the permittee chooses to conduct a performance test, the performance test will be conducted according to §63.994(b)(1). [8 CAR § 41-204 and 40 C.F.R. § 63.994(b)(1)]
384. The permittee must install a continuous pH monitoring device on the scrubber effluent. As an alternative to continuously measuring and recording pH as specified in §63.994(c)(1)(i) and §63.998(a)(2)(ii)(D), the permittee may elect to continuously monitor and record the caustic strength of the effluent. For halogen scrubbers used to control only batch process vents, the permittee may elect to monitor and record either the pH or the caustic strength of the scrubber effluent at least once per day. [8 CAR § 41-204 and 40 C.F.R. § 63.994(c)(1)(i)]
385. The permittee must locate a continuous liquid flow meter at the scrubber influent and determine gas stream flow using one of the procedures specified in §63.994(c)(1)(ii)(A) through (D). [8 CAR § 41-204 and 40 C.F.R. § 63.994(c)(1)(ii)]
386. For the ADMA scrubber (SN-AD-05), the permittee must comply with the Monitoring and Recordkeeping Requirements for Control Devices with Continuous Monitoring given in the general MON requirements section. [8 CAR § 41-204 and 40 C.F.R. § 63.996(c)(1)]

DMTDA Unit

The DMTDA process unit produces di-(methyl-thio)-toluene-diamine and dimethyl disulfide. During the dimethyl disulfide production scenario, no HAP is used therefore this operating scenario is not subject to the MON. The DMTDA production scenario is subject to the MON because it uses HAP.

The DMTDA production scenario is subject to the requirements for Group 2 continuous and batch process vents (TRE value > 5.0 for continuous process vents and emissions between 200 and 10,000 lb/yr for batch process vents). The DMTDA production scenario is also subject to

the equipment leak provisions and potentially subject to the process condenser requirements. The unit does not use any control devices. The proposed permit conditions are presented below.

Specific Conditions

387. For each continuous process vent, the permittee must either designate the vent as a Group 1 continuous process vent or determine the total resource effectiveness (TRE) index value as specified in §63.115(d), except as specified in §63.2455(b)(1) through (3). [8 CAR § 41-204 and 40 C.F.R. § 63.2455(b)]
388. If a process has batch process vents, as defined in §63.2550, the permittee must determine the group status of the batch process vents by determining and summing the uncontrolled organic HAP emissions from each of the batch process vents within the process using the procedures specified in §63.1257(d)(2)(i) and (ii), except as specified in §63.2460(b)(1) through (7). [8 CAR § 41-204 and 40 C.F.R. § 63.2460(b)]
389. The permittee may change from Group 2 to Group 1 in accordance with either §63.2460(b)(6)(i) or (ii) and must comply with the requirements of §63.2460 and submit the test report in the next compliance report. [8 CAR § 41-204 and 40 C.F.R. § 63.2460(b)(6)]
390. Process condensers, as defined in §63.2550(i), are not considered to be control devices for batch process vents. The permittee must determine whether a condenser is a control device for a batch process vent or a process condenser from which the uncontrolled HAP emissions are evaluated as part of the initial compliance demonstration for each MCPU and report the results with supporting rationale in the notification of compliance status report. [8 CAR § 41-204 and 40 C.F.R. § 63.2460(c)(1)]
391. If a process condenser is used for any boiling operations, the permittee must demonstrate that it is properly operated according to the procedures specified in §63.1257(d)(2)(i)(C)(4)(ii) and (d)(3)(iii)(B), and the demonstration must occur only during the boiling operation. As an alternative to measuring the exhaust gas temperature, as required by §63.1257(d)(3)(iii)(B), the permittee may elect to measure the liquid temperature in the receiver. [8 CAR § 41-204 and 40 C.F.R. § 63.2460(c)(2)(v)]
392. The permittee must meet the requirements of §63.2480 for equipment leaks. [8 CAR § 41-204 and 40 C.F.R. § 63.2480]
393. If the permittee documents in the notification of compliance status report that total uncontrolled organic HAP emissions from the batch process vents in an MCPU will be less than 1,000 lb/yr for the anticipated number of standard batches, then the permittee must keep records of the number of batches operated and calculate a daily rolling annual sum of batches operated no less frequently than monthly.

If the number of batches operated results in organic HAP emissions that exceed 1,000 lb/yr, the permittee must estimate emissions for the preceding 12 months based on the number of batches operated and the estimated emissions for a standard batch, and the permittee must begin recordkeeping as specified in §63.2525 (e)(4). After one year, the permittee may revert to recording only the number of batches if the number of batches

operated during the year results in less than 1,000 lb of organic HAP emissions. [8 CAR § 41-204 and 40 C.F.R. § 63.2525(e)(3)]

NC-12 Unit

There are two batch process vents at the NC-12 unit, and emissions from one of the process vents is less than 50 ppm (exempt) and the permittee will limit the other process vent to 1,000 lb/yr (Group 2). Otherwise, the NC-12 unit is not subject to any other MON requirements. NC-12 production unit has an alternate operating scenario where the NC-15 product is produced. As is the case with the NC-15 production unit, this operating scenario has one exempt process vent with less than 50 ppm and no other MON-affected emissions.

Specific Conditions

394. If any process vents within a process emit hydrogen halide and halogen HAP, the permittee must determine and sum the uncontrolled hydrogen halide and halogen HAP emissions from each of the process vents within the process using the procedures specified in §63.1257(d)(2)(i) and/or (ii), as appropriate. When §63.1257(d)(2)(ii)(E) requires documentation to be submitted in the pre-compliance report, it means the notification of compliance status report. [8 CAR § 41-204 and 40 C.F.R. § 63.2465(b)]
395. The permittee must keep records of the information specified below. [8 CAR § 41-204 and 40 C.F.R. § 63.2525(e)(4)]
 - a. The day each batch was completed and/or the operating hours per day for continuous operations with hydrogen halide and halogen emissions.
 - b. Whether each batch operated was considered a standard batch.
 - c. Estimated uncontrolled and controlled emissions for each batch that is considered to be a nonstandard batch.
 - d. The daily 365-day rolling summations of emissions, or alternative records that correlate to the emissions (e.g., number of batches), calculated no less frequently than monthly.

NC-15 Unit

There is a single batch process vent with emissions less than 50 ppm and this unit is exempt from the requirements for a batch process. However, since hydrogen chloride (HCl) is emitted the unit is subject to the requirement below.

Specific Conditions

396. If any process vents within a process emit hydrogen halide and halogen HAP, the permittee must determine and sum the uncontrolled hydrogen halide and halogen HAP emissions from each of the process vents within the process using the procedures specified in §63.1257(d)(2)(i) and/or (ii), as appropriate. When §63.1257(d)(2)(ii)(E) requires documentation to be submitted in the pre-compliance report, it means the notification of compliance status report. [8 CAR § 41-204 and 40 C.F.R. § 63.2465(b)]

NC-17 Unit

The continuous process vents, storage tanks, transfer racks, equipment leaks, wastewater, and heat exchanger equipment, if they exist, are covered under 40 CFR §63, Subpart F, G, and H – *National Emission Standards for Organic Hazardous Air Pollutants* (a.k.a. the HON).

Specific Conditions

397. If any process vents within a process emit hydrogen halide and halogen HAP, the permittee must determine and sum the uncontrolled hydrogen halide and halogen HAP emissions from each of the process vents within the process using the procedures specified in §63.1257(d)(2)(i) and/or (ii), as appropriate. When §63.1257(d)(2)(ii)(E) requires documentation to be submitted in the pre-compliance report, it means the notification of compliance status report. [8 CAR § 41-204 and 40 C.F.R. § 63.2465(b)]

NC-18 (BT-93W Process Only)

The only affected process at the NC-18 unit is the production of BT-93W. The BT-93W process contains combined emissions streams with both batch vents and continuous process vents. The permittee will comply with the emission limits and work practice standards for Group 1 batch process vents, based on the hierarchy given in §63.2450(c)(2) of the MON. The BT-93W process is also subject to the Subpart SS requirements for its incinerator control device.

Specific Conditions

398. The permittee must determine the applicable requirements based on the hierarchy presented in §63.2450(c)(2)(i) through (vi). For a combined stream, the applicable requirements are specified in the highest-listed paragraph in the hierarchy that applies to any of the individual streams that make up the combined stream. [8 CAR § 41-204 and 40 C.F.R. § 63.2450(c)(2)]
399. The permittee will comply with the requirements of Subpart FFFF Table 2 - *Emission Limits and Work Practice Standards for Batch Process Vents* and §63.2460 for Group 1 batch process vents, including applicable monitoring, recordkeeping, and reporting. Therefore, per §63.2450(c)(2), compliance with these requirements will demonstrate compliance with the requirements for the following types of emission sources: [8 CAR § 41-204 and 40 C.F.R. § 63.2450(c)(2)(i)]
- a. Continuous Process Vents
 - b. Transfer Operations
 - c. Waste Management Units handling Group 1 Wastewater Streams
 - d. Storage Tanks, and
 - e. Continuous Process Vents with Final Recovery Devices
400. The permittee must meet each emission limit in Subpart FFFF Table 2 - *Emission Limits and Work Practice Standards for Batch Process Vents* that apply and meet each applicable requirement specified in §63.2460(b) and (c). [8 CAR § 41-204 and 40 C.F.R. § 63.2460(a)]
401. The permittee must determine the group status of batch process vents, as defined in §63.2550, by determining and summing the uncontrolled organic HAP emissions from

- each of the batch process vents within the process using the procedures specified in §63.1257(d)(2)(i) and (ii), except as specified in §63.2460(b)(1) through (7). [8 CAR § 41-204 and 40 C.F.R. § 63.2460(b)]
402. Process condensers, as defined in §63.2550(i), are not considered to be control devices for batch process vents. The permittee must determine whether a condenser is a control device for a batch process vent or a process condenser from which the uncontrolled HAP emissions are evaluated as part of the initial compliance demonstration for each MCPU and report the results with supporting rationale in the notification of compliance status report. [8 CAR § 41-204 and 40 C.F.R. § 63.2460(c)(1)]
403. If a process condenser is used for any boiling operations, the permittee must demonstrate that it is properly operated according to the procedures specified in §63.1257(d)(2)(i)(C)(4)(ii) and (d)(3)(iii)(B), and the demonstration must occur only during the boiling operation. As an alternative to measuring the exhaust gas temperature, as required by §63.1257(d)(3)(iii)(B), the permittee may elect to measure the liquid temperature in the receiver. [8 CAR § 41-204 and 40 C.F.R. § 63.2460(c)(2)(v)]
404. To demonstrate initial compliance with a percent reduction emission limit in Subpart FFFF Table 2 - *Emission Limits and Work Practice Standards for Batch Process Vents*, the permittee must compare the sums of the controlled and uncontrolled emissions for the applicable Group 1 batch process vents within the process, and show that the specified reduction is met. [8 CAR § 41-204 and 40 C.F.R. § 63.2460(c)(2)(i)]
405. When the permittee conducts a performance test or design evaluation for a non-flare control device used to control emissions from batch process vents, the permittee must establish emission profiles and conduct the test under worst-case conditions according to §63.1257(b)(8), instead of under normal operating conditions as specified in §63.7(e)(1). The requirements in §63.997(e)(1)(i) and (iii) also do not apply for performance tests conducted to determine compliance with the emission limits for batch process vents. For references in §63.997(b)(1) to "methods specified in §63.997(e)" include the methods specified in §63.1257(b)(8). [8 CAR § 41-204 and 40 C.F.R. § 63.2460(c)(2)(ii)]
406. The permittee must conduct a subsequent performance test or compliance demonstration equivalent to an initial compliance demonstration within 180 days of a change in the worst case conditions. [8 CAR § 41-204 and 40 C.F.R. § 63.2460(c)(2)(vi)]
407. The permittee must establish operating limits under the conditions required for the initial compliance demonstration, except the permittee may elect to establish operating limit(s) for conditions other than those under which a performance test was conducted as specified in §63.2460(c)(3)(i) and, if applicable, §63.2460(c)(3)(ii). [8 CAR § 41-204 and 40 C.F.R. § 63.2460(c)(3)]
408. If flow to a control device could be intermittent, the permittee must install, calibrate, and operate a flow indicator at the inlet or outlet of the control device to identify periods of no flow. Periods of no flow may not be used in daily or block averages, and it may not be used in fulfilling a minimum data availability requirement. [8 CAR § 41-204 and 40 C.F.R. § 63.2460(c)(7)]

409. The permittee must meet the requirements of §63.982(c) and the requirements referenced therein, except when complying with §63.2485, if the permittee reduces organic HAP emissions by venting emissions through a closed-vent system to any combination of control devices (except a flare) or recovery devices. The permittee will comply with this requirement by compliance with the Closed Vent System Requirements given in the general MON requirements section. [8 CAR § 41-204 and 40 C.F.R. § 63.2450(e)(1)]
410. For the NC-18 incinerator, the permittee must comply with the Monitoring and Recordkeeping Requirements for Control Devices with Continuous Monitoring given in the general MON requirements section. [8 CAR § 41-204 and 40 C.F.R. § 63.996(c)(1)]
411. The permittee must comply with the requirements specified in §63.2450(g)(1) through (5) for performance tests. [8 CAR § 41-204 and 40 C.F.R. § 63.2450(g)]
412. The permittee may use either §63.2450(i)(1) or (i)(2) to correct for supplemental gas. [8 CAR § 41-204 and 40 C.F.R. § 63.2450(i)]
413. The permittee must operate incinerators at all times when emissions are vented to them. [8 CAR § 41-204 and 40 C.F.R. § 63.988(a)(2)]
414. The permittee must install a temperature monitoring device in the fire box or ductwork downstream of the fire box. [8 CAR § 41-204 and 40 C.F.R. § 63.988(c)(1)]
415. The permittee must maintain records necessary to determine the conditions of performance tests performed pursuant to §63.988(b) must be available upon request. [8 CAR § 41-204 and 40 C.F.R. § 63.998(a)(2)(i)]
416. Where the permittee seeks to demonstrate compliance with a percent reduction requirement or a parts per million by volume requirement using a non-flare combustion device the information specified below must be recorded. [8 CAR § 41-204 and 40 C.F.R. § 63.998(a)(2)(ii)(B)]
 - a. The fire box temperature averaged over full period of performance test.
 - b. The percent reduction of organic regulated material, if applicable, or TOC achieved by the incinerator determined as specified in §63.997(e)(2)(iv), as applicable, or the concentration of organic regulated material (parts per million by volume, by compound) determined as specified in §63.997(e)(2)(iii) at the outlet of the incinerator.
417. The permittee must meet each emission limit in Subpart FFFF Table 1 - *Emission Limits and Work Practice Standards for Continuous Process Vents* that applies to continuous process vents and meet each applicable requirement specified in §63.2455(b) through (c). Per §63.2450(c)(2), compliance with these requirements will be demonstrated per compliance with the requirements for batch process vents. [8 CAR § 41-204 and 40 C.F.R. § 63.2455(a)]
418. The permittee must meet each requirement in Subpart FFFF Table 6 - *Requirements for Equipment Leaks* that applies to equipment leaks, except as specified in §63.2480(b) through (d). [8 CAR § 41-204 and 40 C.F.R. § 63.2480(a)]

419. The permittee must meet each requirement in Subpart FFFF Table 7 - *Requirements for Wastewater Streams and Liquid Streams in Open Systems Within a MCPU* that applies to wastewater streams and liquid streams in open systems within a MCPU, except as specified in §63.2485(b) through (o). [8 CAR § 41-204 and 40 C.F.R. § 63.2485]
420. The permittee must comply with each requirement in Subpart FFFF Table 10 - *Work Practice Standards for Heat Exchange Systems* that apply to heat exchange systems, except as specified in §63.2490(b) and (c). [8 CAR § 41-204 and 40 C.F.R. § 63.2490(a)]

NC-21 Unit

The NC-21 unit is similar to the NC-18 unit. Like the NC-18 unit, NC-21 has combined emission streams (i.e., batch vents, continuous vents, and storage tanks), and the permittee will comply with the emission limits and work practice standards for Group 1 batch process vents, based on the hierarchy of the MON. The NC-21 unit is also subject to the Subpart SS requirements for its incinerator control device.

Specific Conditions

421. The permittee must determine the applicable requirements based on the hierarchy presented in §63.2450(c)(2)(i) through (vi). For a combined stream, the applicable requirements are specified in the highest-listed paragraph in the hierarchy that applies to any of the individual streams that make up the combined stream. [8 CAR § 41-204 and 40 C.F.R. § 63.2450(c)(2)]
422. The permittee will comply with the requirements of Subpart FFFF Table 2 - *Emission Limits and Work Practice Standards for Batch Process Vents* and §63.2460 for Group 1 batch process vents, including applicable monitoring, recordkeeping, and reporting. Therefore, per §63.2450(c)(2), compliance with these requirements will demonstrate compliance with the requirements for the following types of emission sources: [8 CAR § 41-204 and 40 C.F.R. § 63.2450(c)(2)(i)]
 - a. Continuous Process Vents
 - b. Transfer Operations
 - c. Waste Management Units handling Group I Wastewater Streams
 - d. Storage Tanks
 - e. Continuous Process Vents with Final Recovery Devices
423. The permittee must meet each emission limit in Subpart FFFF Table 2 - *Emission Limits and Work Practice Standards for Batch Process Vents* that apply and meet each applicable requirement specified in §63.2460(b) and (c). [8 CAR § 41-204 and 40 C.F.R. § 63.2460(a)]
424. The permittee must determine the group status of batch process vents, as defined in §63.2550, by determining and summing the uncontrolled organic HAP emissions from each of the batch process vents within the process using the procedures specified in

- §63.1257(d)(2)(i) and (ii), except as specified in §63.2460(b)(1) through (7). [8 CAR § 41-204 and 40 C.F.R. § 63.2460(b)]
425. Process condensers, as defined in §63.2550(i), are not considered to be control devices for batch process vents. The permittee must determine whether a condenser is a control device for a batch process vent or a process condenser from which the uncontrolled HAP emissions are evaluated as part of the initial compliance demonstration for each MCPU and report the results with supporting rationale in the notification of compliance status report. [8 CAR § 41-204 and 40 C.F.R. § 63.2460(c)(1)]
426. If a process condenser is used for any boiling operations, the permittee must demonstrate that it is properly operated according to the procedures specified in §63.1257(d)(2)(i)(C)(4)(ii) and (d)(3)(iii)(B), and the demonstration must occur only during the boiling operation. As an alternative to measuring the exhaust gas temperature, as required by §63.1257(d)(3)(iii)(B), the permittee may elect to measure the liquid temperature in the receiver. [8 CAR § 41-204 and 40 C.F.R. § 63.2460(c)(2)(v)]
427. To demonstrate initial compliance with a percent reduction emission limit in Subpart FFFF Table 2 – *Emission Limits and Work Practice Standards for Batch Process Vents*, the permittee must compare the sums of the controlled and uncontrolled emissions for the applicable Group 1 batch process vents within the process, and show that the specified reduction is met. [8 CAR § 41-204 and 40 C.F.R. § 63.2460(c)(2)(i)]
428. When the permittee conducts a performance test or design evaluation for a non-flare control device used to control emissions from batch process vents, the permittee must establish emission profiles and conduct the test under worst-case conditions according to §63.1257(b)(8), instead of under normal operating conditions as specified in §63.7(e)(1). The requirements in §63.997(e)(I)(i) and (iii) also do not apply for performance tests conducted to determine compliance with the emission limits for batch process vents. For references in §63.997(b)(1) to "methods specified in §63.997(e)" include the methods specified in §63.1257(b)(8). [8 CAR § 41-204 and 40 C.F.R. § 63.2460(c)(2)(ii)]
429. The permittee must conduct a subsequent performance test or compliance demonstration equivalent to an initial compliance demonstration within 180 days of a change in the worst case conditions. [8 CAR § 41-204 and 40 C.F.R. § 63.2460(c)(2)(vi)]
430. The permittee must establish operating limits under the conditions required for the initial compliance demonstration, except the permittee may elect to establish operating limit(s) for conditions other than those under which a performance test was conducted as specified in §63.2460(c)(3)(i) and, if applicable, §63.2460(c)(3)(ii). [8 CAR § 41-204 and 40 C.F.R. § 63.2460(c)(3)]
431. If flow to a control device could be intermittent, the permittee must install, calibrate, and operate a flow indicator at the inlet or outlet of the control device to identify periods of no flow. Periods of no flow may not be used in daily or block averages, and it may not be used in fulfilling a minimum data availability requirement. [8 CAR § 41-204 and 40 C.F.R. § 63.2460(c)(7)]
432. The permittee must meet the requirements of §63.982(c) and the requirements referenced therein, except when complying with §63.2485, if the permittee reduces organic HAP

- emissions by venting emissions through a closed-vent system to any combination of control devices (except a flare) or recovery devices. The permittee will comply with this requirement by compliance with the Closed Vent System Requirements given in the general MON requirements section. [8 CAR § 41-204 and 40 C.F.R. § 63.2450(e)(1)]
433. For the NC-21 incinerator, the permittee must comply with the Monitoring and Recordkeeping Requirements for Control Devices with Continuous Monitoring given in the general MON requirements section. [8 CAR § 41-204 and 40 C.F.R. § 63.996(c)(1)]
434. The permittee must comply with the requirements specified in §63.2450(g)(1) through (5) for performance tests. [8 CAR § 41-204 and 40 C.F.R. § 63.2450(g)]
435. The permittee may use either §63.2450(i)(1) or (i)(2) to correct for supplemental gas. [8 CAR § 41-204 and 40 C.F.R. § 63.2450(i)]
436. The permittee must operate incinerators at all times when emissions are vented to them. [8 CAR § 41-204 and 40 C.F.R. § 63.988(a)(2)]
437. The permittee must install a temperature monitoring device in the fire box or ductwork downstream of the fire box. [8 CAR § 41-204 and 40 C.F.R. § 63.988(c)(1)]
438. The permittee must maintain records necessary to determine the conditions of performance tests performed pursuant to §63.988(b) and must be available upon request. [8 CAR § 41-204 and 40 C.F.R. § 63.998(a)(2)(i)]
439. Where the permittee seeks to demonstrate compliance with a percent reduction requirement or a parts per million by volume requirement using a nonflare combustion device the information specified below must be recorded. [8 CAR § 41-204 and 40 C.F.R. § 63.998(a)(2)(ii)(B)]
- a. The fire box temperature averaged over full period of performance test.
 - b. The percent reduction of organic regulated material, if applicable, or TOC achieved by the incinerator determined as specified in §63.997(e)(2)(iv), as applicable, or the concentration of organic regulated material (parts per million by volume, by compound) determined as specified in §63.997(e)(2)(iii) at the outlet of the incinerator.
440. The permittee must meet each emission limit in Subpart FFFF Table 1 - *Emission Limits and Work Practice Standards for Continuous Process Vents* that applies to continuous process vents and meet each applicable requirement specified in §63.2455(b) through (c). Per §63.2450(c)(2), compliance with these requirements will be demonstrated per compliance with the requirements for batch process vents. [8 CAR § 41-204 and 40 C.F.R. § 63.2455(a)]
441. If, in the future, a scrubber is used at the NC-21 unit to comply with the requirements of Subpart FFFF Table 3 - *Emission Limits for Hydrogen Halide and Halogen HAP Emissions or HAP Metals Emissions from Process Vents*, then the permittee must comply with the MON requirements specifically applicable to hydrogen halide halogen HAP scrubbers given in proposed Conditions 2 through 9 in the ADMA section. [8 CAR § 41-204, 40 C.F.R. §§ 63.2450(e)(3), 63.2465(a), and 63.2465(c)]

442. The permittee must meet each emission limit in Subpart FFFF Table 4 - *Emission Limits for Storage Tanks* that applies to storage tanks and meet each applicable requirement specified in §63.2470(b) through (e). Per §63.2450(c)(2), compliance with these requirements will be demonstrated per compliance with the requirements for batch process vents. [8 CAR § 41-204 and 40 C.F.R. § 63.2470(a)]
443. For each surge control vessel or bottoms receiver that meets the capacity and vapor pressure thresholds for a Group 1 storage tank, the permittee must meet emission limits and work practice standards specified in Subpart FFFF Table 4 - *Emission Limits for Storage Tanks*. Per §63.2450(c)(2), compliance with these requirements will be demonstrated per compliance with the requirements for batch process vents. [8 CAR § 41-204 and 40 C.F.R. § 63.2450(r)]
444. If any process vents within a process emit hydrogen halide and halogen HAP, the permittee must determine and sum the uncontrolled hydrogen halide and halogen HAP emissions from each of the process vents within the process using the procedures specified in §63.1257(d)(2)(i) and/or (ii), as appropriate. When §63.1257(d)(2)(ii)(E) requires documentation to be submitted in the pre-compliance report, it means the notification of compliance status report. [8 CAR § 41-204 and 40 C.F.R. § 63.2465(b)]
445. The permittee must meet each requirement in Subpart FFFF Table 6 - *Requirements for Equipment Leaks* that applies to equipment leaks, except as specified in §63.2480(b) through (d). [8 CAR § 41-204 and 40 C.F.R. § 63.2480(a)]
446. The permittee must meet each requirement in Subpart FFFF Table 7 - *Requirements for Wastewater Streams and Liquid Streams in Open Systems Within an MCPU* that applies to wastewater streams and liquid streams in open systems within an MCPU, except as specified in §63.2485(b) through (o). [8 CAR § 41-204 and 40 C.F.R. § 63.2485]
447. The permittee must comply with each requirement in Subpart FFFF Table 10 - *Work Practice Standards for Heat Exchange Systems* that apply to heat exchange systems, except as specified in §63.2490(b) and (c). [8 CAR § 41-204 and 40 C.F.R. § 63.2490(a)]

NC-22 Unit

The NC-22 unit has four batch process vents with emissions less than 50 ppm and this unit is exempt from the requirements for a batch process. However, since hydrogen chloride (HCL) is emitted the unit is subject to the requirement below.

Specific Conditions

448. If any process vents within a process emit hydrogen halide and halogen HAP, the permittee must determine and sum the uncontrolled hydrogen halide and halogen HAP emissions from each of the process vents within the process using the procedures specified in §63.1257(d)(2)(i) and/or (ii), as appropriate. When §63.1257(d)(2)(ii)(E) requires documentation to be submitted in the pre-compliance report, it means the notification of compliance status report. [8 CAR § 41-204 and 40 C.F.R. § 63.2465(b)]
449. Due to the presence of methylene chloride, the NC-22 is potentially subject to the MON for organic HAP emissions. All batch process vents, continuous process vents, storage

vessels, wastewater streams, and transfer operations qualify as Group 2. Therefore, only recordkeeping and reporting requirements apply. The DMTDA unit has similar MON MACT applicability. Therefore, the NC-22 complies with the Specific Conditions 1 through 7 listed in the DMTDA MON MACT specific requirements. Specific Condition 6 is not applicable since no components in the NC-22 process contact materials with an organic HAP concentration greater than 5%. As applicable, the NC-22 unit also complies with Specific Conditions 1 through 16 in the list of Generally Applicable Subpart A and MON MACT requirements.

NC-23 Unit

The NC-23 unit contains either exempt continuous process vents or continuous process vents with a TRE greater than 5.0. Therefore, no MON control requirements apply. The batch process vents at this unit are Group 2. The storage tanks contain phenol which has a vapor pressure less than 1.0 psia. Therefore the storage tanks are Group 2.

Specific Conditions

450. For each continuous process vent, the permittee must either designate the vent as a Group 1 continuous process vent or determine the total resource effectiveness (TRE) index value as specified in §63.115(d), except as specified in §63.2455(b)(1) through (3). [8 CAR § 41-204 and 40 C.F.R. § 63.2455(b)]
451. If a process has batch process vents, as defined in §63.2550, the permittee must determine the group status of the batch process vents by determining and summing the uncontrolled organic HAP emissions from each of the batch process vents within the process using the procedures specified in §63.1257(d)(2)(i) and (ii), except as specified in §63.2460(b)(1) through (7). [8 CAR § 41-204 and 40 C.F.R. § 63.2460(b)]
452. The permittee may change from Group 2 to Group I in accordance with either §63.2460(b)(6)(i) or (ii) and must comply with the requirements of §63.2460 and submit the test report in the next compliance report. [8 CAR § 41-204 and 40 C.F.R. § 63.2460(b)(6)]
453. Process condensers, as defined in §63.2550(i), are not considered to be control devices for batch process vents. The permittee must determine whether a condenser is a control device for a batch process vent or a process condenser from which the uncontrolled HAP emissions are evaluated as part of the initial compliance demonstration for each MCPU and report the results with supporting rationale in the notification of compliance status report. [8 CAR § 41-204 and 40 C.F.R. § 63.2460(c)(1)]
454. If a process condenser is used for any boiling operations, the permittee must demonstrate that it is properly operated according to the procedures specified in §63.1257(d)(2)(i)(C)(4)(ii) and (d)(3)(iii)(B), and the demonstration must occur only during the boiling operation. The reference in §63.1257(d)(3)(iii)(B) to the alternative standard in §63.1254(c) means §63.2505. As an alternative to measuring the exhaust gas temperature, as required by §63.1257(d)(3)(iii)(B), the permittee may elect to measure the liquid temperature in the receiver. [8 CAR § 41-204 and 40 C.F.R. § 63.2460(c)(2)(v)]

455. The permittee must meet the requirements of §63.2480 for equipment leaks. [8 CAR § 41-204 and 40 C.F.R. § 63.2480]
456. The permittee must meet each requirement in Subpart FFFF Table 7 - *Requirements for Wastewater Streams and Liquid Streams in Open Systems Within an MCPU* that applies to wastewater streams and liquid streams in open systems within an MCPU, except as specified in §63.2485(b) through (o). [8 CAR § 41-204 and 40 C.F.R. § 63.2485]
457. If the permittee documents in the notification of compliance status report that total uncontrolled organic HAP emissions from the batch process vents in an MCPU will be less than 1,000 lb/yr for the anticipated number of standard batches, then the permittee must keep records of the number of batches operated and calculate a daily rolling annual sum of batches operated no less frequently than monthly. If the number of batches operated results in organic HAP emissions that exceed 1,000 lb/yr, the permittee must estimate emissions for the preceding 12 months based on the number of batches operated and the estimated emissions for a standard batch, and the permittee must begin recordkeeping as specified in §63.2525(e)(4). After 1 year, the permittee may revert to recording only the number of batches if the number of batches operated during the year results in less than 1,000 lb of organic HAP emissions. [8 CAR § 41-204 and 40 C.F.R. § 63.2525(e)(3)]

NC-24 Unit

The NC-24 unit has two continuous process vents with emissions less than 50 ppm and batch process vents with less than 200 lb/yr of HAP. Therefore, the NC-24 unit is exempt from the requirements for a batch process. However, since hydrogen chloride (HCl) is emitted the unit is subject to the requirement below.

Specific Conditions

458. If a process has batch process vents, as defined in §63.2550, the permittee must determine the group status of the batch process vents by determining and summing the uncontrolled organic HAP emissions from each of the batch process vents within the process using the procedures specified in §63.1257(d)(2)(i) and (ii), except as specified in §63.2460(b)(1) through (7). [8 CAR § 41-204 and 40 C.F.R. § 63.2460(b)]
- a. If any process vents within a process emit hydrogen halide and halogen HAP, the permittee must determine and sum the uncontrolled hydrogen halide and halogen HAP emissions from each of the process vents within the process using the procedures specified in §63.1257(d)(2)(i) and/or (ii), as appropriate. When §63.1257(d)(2)(ii)(E) requires documentation to be submitted in the pre-compliance report, it means the notification of compliance status report. [8 CAR § 41-204 and 40 C.F.R. § 63.2465(b)]

Brominated Flame Retardant Product Pilot Production

Source Description

Bromine is reacted with polystyrene in a solvent to produce brominated polystyrene. By-product hydrogen bromide is separated from the brominated polystyrene and recovered as hydrobromic acid. The brominated polystyrene is solidified and separated from the solvent. The solid product is washed and excess liquid is removed. Contaminants in the vent streams are removed using carbon filters. Pilot Vent 2 (SN-AL-02) is also controlled with a scrubber system. Hydrobromic acid and spent solvent are further processed by existing site equipment.

Specific Conditions

459. The permittee shall not exceed the emission rates set forth in the following table. The permittee shall demonstrate compliance with this condition by compliance with Specific Condition #461. [8 CAR § 41-401 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN	Description	Pollutant	lb/hr	tpy
AL-01	Pilot Plant Vent 1 (X-2643, X-2644)	VOC	2.9	0.1
AL-02	Pilot Plant Vent 2 (X-2651, X-2652)	VOC	0.1	0.4
AL-03	Pilot Plant Vent 3 (X-2645)	VOC	0.1	0.1
AL-04	Pilot Plant Vent 4 (X-2647, X-2648)	VOC	0.1	0.1
AL-05	Pilot Plant Vent 5 (X-2683, X-2684)	VOC	11.0	0.1

460. The permittee shall not exceed the emission rates set forth in the following table. The permittee shall demonstrate compliance with this condition by compliance with Specific Condition #461. [8 CAR § 40-701 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN	Description	Pollutant	lb/hr	tpy
AL-02	Pilot Plant Vent 2 (X-2651, X-2652)	Br ₂	2.51	0.07
		HBr	0.04	0.14
AL-03	Pilot Plant Vent 3 (X-2645)	Hydrazine	0.015	0.001

461. The permittee shall not exceed a throughput of 175,200 pounds of flame retardant product at the pilot plant per rolling 12 month period. [8 CAR § 41-605, 8 CAR § 40-904, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

462. The permittee shall maintain monthly records to demonstrate compliance with Specific Condition #461. The permittee shall update these records by the fifteenth day of the month following the month to which the records pertain. The twelve month rolling totals and each individual month's data shall be maintained on-site, made available to Division of Environmental Quality personnel upon request, and submitted in accordance with General Provision #7. [8 CAR § 41-605, 8 CAR § 40-904, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
463. The permittee shall install and operate a continuous flow monitor alarm at SN-AL-02, which shall indicate when the scrubber solution flow rate fails to meet the design flow rate of 4.5 gpm. Records of alarm incidents and corrective action shall be maintained on-site and made available to Division of Environmental Quality personnel upon request. [8 CAR § 40-904 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
464. The pilot plant is exempt from the provisions of 40 C.F.R. § 60 Subpart NNN except for the recordkeeping and reporting requirements in Specific Conditions #465 through #468. [8 CAR § 41-204 and 40 C.F.R. § 60.660(c)(5)]
465. Each owner or operator of an affected facility that seeks to comply with the requirements of this subpart by complying with the design production capacity provision in § 60.660(c)(5) shall keep up-to-date, readily accessible records of any change in equipment or process operation that increases the design production capacity of the process unit in which the affected facility is located. [8 CAR § 41-204 and 40 C.F.R. § 60.665(j)]
466. Each owner or operator that seeks to comply with the requirements of this subpart by complying with the requirements of § 60.660 (c)(4), (c)(5), or (c)(6) or § 60.662 shall submit to the Administrator semiannual reports of the following recorded information. The initial report shall be submitted within 6 months after the initial start-up date. [8 CAR § 41-204 and 40 C.F.R. § 60.665(l)]
467. Any change in equipment or process operation, as recorded under paragraph (j) of this section, that increases the design production capacity above the low capacity exemption level in § 60.660(c)(5) and the new capacity resulting from the change for the distillation process unit containing the affected facility. These must be reported as soon as possible after the change and no later than 180 days after the change. These reports may be submitted either in conjunction with semiannual reports or as a single separate report. A performance test must be completed within the same time period to obtain the vent stream flow rate, heating value, and ETOC. The performance test is subject to the requirements of § 60.8. The facility must begin compliance with the requirements set forth in § 60.660(d) or § 60.662. If the facility chooses to comply with § 60.662, the facility may qualify for an exemption in § 60.660(c)(4) or (6). [8 CAR § 41-204 and 40 C.F.R. § 60.665(l)(6)]

- 468. Each owner or operator that seeks to demonstrate compliance with § 60.660(c)(5) must submit to the Administrator an initial report detailing the design production capacity of the process unit. [8 CAR § 41-204 and 40 C.F.R. § 60.665(n)]
- 469. The pilot plant is exempt from the provisions of 40 C.F.R. § 60 Subpart RRR except for the recordkeeping and reporting requirements in Specific Conditions #470 through #473. [8 CAR § 41-204 and 40 C.F.R. § 60.700(c)(3)]
- 470. Each owner or operator of an affected facility that seeks to comply with the requirements of this subpart by complying with the design production capacity provision in § 60.700(c)(3) shall keep up-to-date, readily accessible records of any change in equipment or process operation that increases the design production capacity of the process unit in which the affected facility is located. [8 CAR § 41-204 and 40 C.F.R. § 60.705(i)]
- 471. Each owner or operator that seeks to comply with the requirements of this subpart by complying with the requirements of § 60.700 (c)(2), (c)(3), or (c)(4) or § 60.702 shall submit to the Administrator semiannual reports of the following recorded information. The initial report shall be submitted within 6 months after the initial start-up date. [8 CAR § 41-204 and 40 C.F.R. § 60.705(l)]
- 472. Any change in equipment or process operation, as recorded under paragraph (i) of this section, that increases the design production capacity above the low capacity exemption level in § 60.700(c)(3) and the new capacity resulting from the change for the reactor process unit containing the affected facility. These must be reported as soon as possible after the change and no later than 180 days after the change. These reports may be submitted either in conjunction with semiannual reports or as a single separate report. A performance test must be completed within the same time period to obtain the vent stream flow rate, heating value, and ETOC. The performance test is subject to the requirements of § 60.8. The facility must begin compliance with the requirements set forth in § 60.702 or § 60.700(d). If the facility chooses to comply with § 60.702, the facility may qualify for an exemption under § 60.700(c)(2), (4), or (8). [8 CAR § 41-204 and 40 C.F.R. § 60.705(l)(5)]
- 473. Each owner or operator that seeks to demonstrate compliance with § 60.700(c)(3) must submit to the Administrator an initial report detailing the design production capacity of the process unit. [8 CAR § 41-204 and 40 C.F.R. § 60.705(n)]
- 474. The permittee shall comply with the requirements of table 6 of 40 C.F.R. § 60 Subpart FFFF that applies to equipment leaks except as specified in Specific Conditions #475 through #477. [8 CAR § 41-204 and 40 C.F.R. § 63.2480(a)]
- 475. Except as specified in paragraphs (b)(6) and (7) of this section, if you comply with either subpart H or UU of this part, you may elect to comply with the provisions in paragraphs (b)(1) through (5) of this section as an alternative to the referenced provisions in subpart H or UU of this part. [8 CAR § 41-204 and 40 C.F.R. § 63.2480(b)]

- a. The requirements for pressure testing in § 63.178(b) or § 63.1036(b) may be applied to all processes, not just batch processes. [40 C.F.R. § 63.2480(b)(1)]
 - b. For the purposes of this subpart, pressure testing for leaks in accordance with § 63.178(b) or § 63.1036(b) is not required after reconfiguration of an equipment train if flexible hose connections are the only disturbed equipment. [40 C.F.R. § 63.2480(b)(2)]
 - c. For an existing source, you are not required to develop an initial list of identification numbers for connectors as would otherwise be required under § 63.1022(b)(1) or § 63.181(b)(1)(i). [40 C.F.R. § 63.2480(b)(3)]
 - d. For connectors in gas/vapor and light liquid service at an existing source, you may elect to comply with the requirements in § 63.169 or § 63.1029 for connectors in heavy liquid service, including all associated recordkeeping and reporting requirements, rather than the requirements of § 63.174 or § 63.1027. [40 C.F.R. § 63.2480(b)(4)]
 - e. Except as specified in paragraph (b)(6) of this section, for pumps in light liquid service in an MCPU that has no continuous process vents and is part of an existing source, you may elect to consider the leak definition that defines a leak to be 10,000 parts per million (ppm) or greater as an alternative to the values specified in § 63.1026(b)(2)(i) through (iii) or § 63.163(b)(2). [40 C.F.R. § 63.2480(b)(5)]
 - f. Beginning no later than the compliance dates specified in § 63.2445(h), paragraph (b)(5) of this section no longer applies. [40 C.F.R. § 63.2480(b)(6)]
 - g. For each piece of equipment that is subject to Table 6 to this subpart and is also subject to periodic monitoring with EPA Method 21 of 40 CFR part 60, appendix A-7, and is added to an affected source after December 17, 2019, or replaces equipment at an affected source after December 17, 2019, you must initially monitor for leaks within 30 days after August 12, 2020, or initial startup of the equipment, whichever is later. Equipment that is designated as unsafe- or difficult-to-monitor is not subject to this paragraph (b)(7). [40 C.F.R. § 63.2480(b)(7)]
476. Except as specified in paragraphs (c)(10) and (11) of this section, if you comply with 40 CFR part 65, subpart F, you may elect to comply with the provisions in paragraphs (c)(1) through (9) of this section as an alternative to the referenced provisions in 40 CFR part 65, subpart F. [8 CAR § 41-204 and 40 C.F.R. § 63.2480(c)]
- a. The requirements for pressure testing in § 65.117(b) may be applied to all processes, not just batch processes. [40 C.F.R. § 63.2480(c)(1)]
 - b. For the purposes of this subpart, pressure testing for leaks in accordance with § 65.117(b) is not required after reconfiguration of an equipment train if flexible hose connections are the only disturbed equipment. [40 C.F.R. § 63.2480(c)(2)]
 - c. For an existing source, you are not required to develop an initial list of identification numbers for connectors as would otherwise be required under § 65.103(b)(1). [40 C.F.R. § 63.2480(c)(3)]

- d. You may elect to comply with the monitoring and repair requirements specified in § 65.108(e)(3) as an alternative to the requirements specified in § 65.108(a) through (d) for any connectors at your affected source. [40 C.F.R. § 63.2480(c)(4)]
 - e. Except as specified in paragraph (c)(10) of this section, for pumps in light liquid service in an MCPU that has no continuous process vents and is part of an existing source, you may elect to consider the leak definition that defines a leak to be 10,000 ppm or greater as an alternative to the values specified in § 65.107(b)(2)(i) through (iii) of this chapter. [40 C.F.R. § 63.2480(c)(5)]
 - f. When 40 CFR part 65, subpart F refers to the implementation date specified in § 65.1(f), it means the compliance date specified in § 63.2445. [40 C.F.R. § 63.2480(c)(6)]
 - g. When §§ 65.105(f) and 65.117(d)(3) refer to § 65.4, it means § 63.2525. [40 C.F.R. § 63.2480(c)(7)]
 - h. When § 65.120(a) refers to § 65.5(d), it means § 63.2515. [40 C.F.R. § 63.2480(c)(8)]
 - i. When § 65.120(b) refers to § 65.5(e), it means § 63.2520. [40 C.F.R. § 63.2480(c)(9)]
 - j. Beginning no later than the compliance dates specified in § 63.2445(h), paragraph (c)(5) of this section no longer applies. [40 C.F.R. § 63.2480(c)(10)]
 - k. For each piece of equipment that is subject to Table 6 to this subpart and is also subject to periodic monitoring with EPA Method 21 of 40 CFR part 60, appendix A-7, and is added to an affected source after December 17, 2019, or replaces equipment at an affected source after December 17, 2019, you must initially monitor for leaks within 30 days after August 12, 2020, or initial startup of the equipment, whichever is later. Equipment that is designated as unsafe- or difficult-to-monitor is not subject to this paragraph (c)(11). [40 C.F.R. § 63.2480(c)(11)]
477. The provisions of this section do not apply to bench-scale processes, regardless of whether the processes are located at the same plant site as a process subject to the provisions of this subpart. [8 CAR § 41-204 and 40 C.F.R. § 63.2480(d)]

Albemarle Corporation - South Plant
Permit #: 0762-AOP-R35
AFIN: 14-00028

SECTION V: COMPLIANCE PLAN AND SCHEDULE

Albemarle Corporation - South Plant will continue to operate in compliance with those identified regulatory provisions. The facility will examine and analyze future rules and regulations that may apply and determine their applicability with any necessary action taken on a timely basis.

SECTION VI: PLANTWIDE CONDITIONS

1. The permittee shall notify the Director in writing within thirty (30) days after commencing construction, completing construction, first placing the equipment and/or facility in operation, and reaching the equipment and/or facility target production rate. [8 CAR § 41-604, 40 C.F.R. § 52 Subpart E, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
2. If the permittee fails to start construction within eighteen months or suspends construction for eighteen months or more, the Director may cancel all or part of this permit. [8 CAR § 41-310(b) and 40 C.F.R. § 52 Subpart E]
3. The permittee must test any equipment scheduled for testing, unless otherwise stated in the Specific Conditions of this permit or by any federally regulated requirements, within the following time frames: (1) new equipment or newly modified equipment within sixty (60) days of achieving the maximum production rate, but no later than 180 days after initial start up of the permitted source or (2) operating equipment according to the time frames set forth by the Division of Environmental Quality or within 180 days of permit issuance if no date is specified. The permittee must notify the Division of Environmental Quality of the scheduled date of compliance testing at least fifteen (15) business days in advance of such test. The permittee shall submit the compliance test results to the Division of Environmental Quality within sixty (60) calendar days after completing the testing. [8 CAR § 41-602 and/or 8 CAR § 40-902 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
4. The permittee must provide:
 - a. Sampling ports adequate for applicable test methods;
 - b. Safe sampling platforms;
 - c. Safe access to sampling platforms; and
 - d. Utilities for sampling and testing equipment.

[8 CAR § 41-602 and/or 8 CAR § 40-902 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
5. The permittee must operate the equipment, control apparatus and emission monitoring equipment within the design limitations. The permittee shall maintain the equipment in good condition at all times. [8 CAR § 41-203 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
6. This permit subsumes and incorporates all previously issued air permits for this facility. [8 CAR pt. 42 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

7. Unless otherwise specified in the permit, approval to construct any new major stationary source or a major modification subject to 40 C.F.R. § 52.21 shall become invalid if construction is not commenced within 18 months after receipt of such approval, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time. The Division of Environmental Quality may extend the 18-month period upon a satisfactory showing that an extension is justified. [8 CAR § 41-801 et seq. and 40 C.F.R. § 52 Subpart E]
8. The permittee shall submit, on a semiannual basis, a compliance certification statement for all emitted contaminants at all permitted storage vessels at the facility. The statement shall provide confirmation that all vessels have been operated in the manner outlined in the Title V permit application and subsequent submittals. A summary sheet of vessel parameters is included in Appendix B. Any deviation from submitted parameters, provided permitted emissions are not exceeded, shall be clearly documented with supporting calculations and attached to the statement. Any parameter deviations which will result in emission increases must be requested and permitted in advance. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]
9. For any source which this permit requires periodic emission calculations, and where worst-case operating parameters and throughput have not been exceeded during the recorded period, the permittee may substitute the following: 1) a photocopy of the original worst-case emission calculations originally submitted in the Title V application, and 2) a cover letter certifying that the submitted worst-case parameters and throughput have not been exceeded. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]
10. Any annual records or annual emission calculations required by this permit shall be based upon a 12-month rolling total. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]
11. The permittee shall conduct weekly observations of visible emissions for all sources assigned an opacity limit. For Sources SN: SL-01, SR-01, AD-16, AD-26, AD-32, AD-35, 15-14A, 15-14B, 15-21, 16-18, 16-20, 16-30, BH-01, BH-02, BH-03, BH-04, 21-01 and 21-05, compliance with opacity limits is demonstrated by burning natural gas as the sole fuel. The visible emission observations shall be used as a method of compliance verification for the opacity limits assigned. The observations shall be conducted by personnel familiar with the facility's visible emissions. If during the weekly observations, visible emissions are detected which appear to be in excess of the permitted opacity limit, the permittee shall:
 - a. Take immediate action to identify the cause of the visible emissions.
 - b. Implement all necessary corrective action.
 - c. Reassess the visible emissions after corrective action is taken.
 - i. If excessive visible emissions are still detected, an opacity reading shall be conducted in accordance with EPA Reference Method 9. This reading shall be conducted by personnel trained and certified in the reference

- method. If the opacity reading exceeds the permitted limit, further corrective measures shall be taken.
- ii. If no excessive visible emissions are detected, the incident shall be noted in the records as described below.

The permittee shall maintain records related to all visible emission observations and Method 9 Readings. The records shall be updated on an as-performed basis. The records shall be kept on-site and made available to Department personnel upon request. The records shall contain the following items:

- a. the date and time of each observation/reading.
- b. any observance of visible emissions appearing to be above permitted limits, or any Method 9 reading which indicates exceedance.
- c. the cause of any observed exceedance of opacity limits, corrective action taken, and results of the reassessment.
- d. The name of the person conducting the observation/reading.

[8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]

- 12. No record keeping or parametric monitoring shall be required for any permit condition during any period of time when an affected source is not in operation. The shutdown period for the source must be clearly indicated in any required records or reports. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]
- 13. Where no more stringent federal regulation applies, the permittee will be found in compliance with fugitive emissions limits in this permit when equipment in the affected unit is operated and maintained consistent with good industry practices, where no more stringent federal regulation applies (e.g., NSPS or MACT), and if the permittee calculates all fugitive emissions for each process area once every five years. The results of these calculations shall be summarized and included in each Title V renewal application. The fugitive emissions may be calculated using usage data (for ancillary chemicals, such as refrigerants and heat transfer fluids), monitoring data with EPA stratified factors, and EPA average SOCMF factors with component counts. Other methods may also be used if prior approval is received from the Department. [8 CAR § 41-605 and 40 C.F.R. § 52 Subpart E]
- 14. Any sources identified as subject to specific Subparts of 40 CFR Parts 60, 61, and 63 must also comply with all applicable requirements of the General Provisions contained in Subpart A of each respective Part. [8 CAR § 41-204 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
- 15. The permittee shall fully comply with all applicable requirements of the National Emission Standard for Asbestos. [8 CAR § 41-204 and 40 C.F.R. § 61 Subpart M]

16. For all processes proposed to be permitted at this facility, Albemarle may propose emission rate ranges in the air permit application. The upper end of these ranges may be significantly higher than the anticipated emissions from the affected sources. Provided no regulatory restrictions prevent the upper end of the proposed ranges from being incorporated into a final air permit, ADEQ shall state the ranges in the permit, and establish the upper ends as limits in the final air permit. Albemarle shall identify, in each application, sources it desires to be subject to this condition, and agrees to test each of these sources within ninety (90) days of permit issuance. Provided that the results of the testing, for each source, indicates that emissions are below the upper end of the established ranges, Albemarle may, at its discretion, submit an appropriate air permit application to establish emission rates reflecting the results of the testing. [8 CAR § 41-602 and 40 C.F.R. § 52 Subpart E]
17. The permittee shall comply with all emission rates in the permit, and show compliance through the required testing, operating parameters monitoring, or any other associated permit requirements.

In the event the initial stack test for any constituent at any new or modified source demonstrates that unanticipated emissions are present or exceed the applicable emission limitations, the permittee shall not be considered to be in violation of the permit limits, provided that:

- a. the permittee files an excess emission report which complies with the applicable requirements of Regulation 18 and/or Regulation 19;
- b. the permitted emission rates were established based on the published emission factors or industry-specific test data;
- c. the excess emissions do not exceed any threshold established in Regulation 18, or Regulation 19 for a de minimis change, the permittee submits an application for a minor modification of its permit within sixty (60) days of the filing of the excess emissions report; and
- d. the permittee pays permit fees based upon the modified emission rates from the date of initial operation of the new or modified source.

[Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

18. The permittee shall comply with all non-criteria emission rates in the permit and show compliance through the required testing, operating parameters monitoring, or any other associated permit requirements.

Certain emission rates listed in this permit were developed using estimates or published emission factors. For emission limits based on published emission factors or industry specific test data, a change in emission factors that affects the estimated emission rates shall not be considered a violation of the permit limits.

This condition does not apply to criteria pollutants or PM. This condition does not apply to pollutants for which test data is already available, or pollutant emission rates established to comply with an NSPS or NESHAP standard. This condition does not apply to sources constructed or modified before May 1, 2000.

[8 CAR § 40-701 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

19. Stack testing requirements may be waived for any source which has not operated at least 25% of the twelve-month period prior to a scheduled test. In order for this waiver to be applied, the permittee must submit a written request to the Department at least thirty days in advance of the scheduled test. The request must include records of operating hours for the source in question. [8 CAR § 41-602 and 40 C.F.R. § 52 Subpart E]
20. During any required stack testing event, the affected source shall be operated within 10 percent of the rated throughput capacity. If 90 percent of the rated throughput capacity cannot be achieved, the permittee shall thenceforth be limited to 10 percent above the actual tested throughput. [8 CAR § 41-602 and 40 C.F.R. § 52 Subpart E]
21. Where applicable, the permittee must prepare and implement a Startup, Shutdown, and Malfunction Plan (SSM). If the Department requests a review of the SSM, the permittee will make the SSM available for review. The permittee must keep a copy of the SSM at the source's location and retain all previous versions of the SSM plan for five years. [8 CAR § 41-204 and 40 C.F.R. § 63.6(e)(3)]
22. RESERVED
23. RESERVED

NESHAP DDDDD

24. The sources identified in the table below are affected sources subject to the requirements of 40 C.F.R. 63, Subpart DDDDD – *National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters*. For the purpose of the subpart these boiler are designated as an existing unit that belongs to the units designed to burn gas 1 fuels subcategory. The permittee shall comply with the subpart no later than January 31, 2016, except as provided in § 63.6(i). The applicable requirements include, but are not limited to the following: [8 CAR § 41-204 and 40 C.F.R. § 63 Subpart DDDDD]

Source No.	Boiler MACT Subcategory	Heat Input Capacity (MMBtu/hr)
SN-AD-16	63.7499 (I) Units designed to burn gas 1 fuels	3.55

Source No.	Boiler MACT Subcategory	Heat Input Capacity (MMBtu/hr)
SN-15-14A	63.7499 (I) Units designed to burn gas 1 fuels	2.15
SN-15-14B	63.7499 (I) Units designed to burn gas 1 fuels	2.15
SN-15-21	63.7499 (I) Units designed to burn gas 1 fuels	2.15
SN-16-20	63.7499 (I) Units designed to burn gas 1 fuels	4.4
SN-16-30	63.7499 (I) Units designed to burn gas 1 fuels	1.2
SN-BH-01	63.7499 (I) Units designed to burn gas 1 fuels	340
SN-BH-02	63.7499 (I) Units designed to burn gas 1 fuels	340
SN-21-05	63.7499 (I) Units designed to burn gas 1 fuels	13.5

Emission Limits, Operating Limits, Work Practice Standards and Monitoring Requirements

- d. Boilers and process heaters in the units designed to burn gas 1 fuels subcategory are not subject to the emission limits in Tables 1 and 2 or 11 through 13 or the operating limits in Table 4 to Subpart DDDDD. [8 CAR § 41-204 and 40 C.F.R. § 63.7500 (e)]
- e. The permittee shall complete an initial tune-up by following the procedures described in § 63.7510 (c) no later than January 31, 2016. [8 CAR § 41-204 and 40 C.F.R. § 63.7510 (e)]
- f. The permittee shall conduct a tune-up of the boiler or process heater annually (SN-BH-01, SN-BH-02, and SN-21-05) or every five years (SN-AD-16, SN-15-14A, SN-15-14B, SN-15-21, SN-16-20 and SN-16-30) in order to demonstrate continuous compliance. Each tune up shall include: [8 CAR § 41-204 and 40 C.F.R. § 63.7540 (a)(10)]
 - i. As applicable, inspect the burner, and clean or replace any components of the burner as necessary (you may perform the burner inspection any time prior to the tune-up or delay the burner inspection until the next scheduled unit shutdown). [8 CAR § 41-204 and 40 C.F.R. § 63.7540 (a)(10)(i)]
 - ii. Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available; [8 CAR § 41-204 and 40 C.F.R. § 63.7540 (a)(10)(ii)]

- iii. Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (you may delay the inspection until the next scheduled unit shutdown). Units that produce electricity for sale may delay the inspection until the first outage, not to exceed 36 months from the previous inspection; [8 CAR § 41-204 and 40 C.F.R. § 63.7540 (a)(10)(iii)]
- iv. Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NOX requirement to which the unit is subject; [8 CAR § 41-204 and 40 C.F.R. § 63.7540 (a)(10)(iv)]
- v. Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer; and [8 CAR § 41-204 and 40 C.F.R. § 63.7540 (a)(10)(v)]
- vi. Maintain on-site and submit, if requested by the Administrator, a report containing the information as follows: [8 CAR § 41-204 and 40 C.F.R. § 63.7540 (a)(10)(vi)]
 - A. The concentrations of CO in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler or process heater; [8 CAR § 41-204 and 40 C.F.R. § 63.7540 (a)(10)(vi)(A)]
 - B. A description of any corrective actions taken as a part of the tune-up; and [8 CAR § 41-204 and 40 C.F.R. § 63.7540 (a)(10)(vi)(B)]
 - C. The type and amount of fuel used over the 12 months prior to the tune-up, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel used by each unit. [8 CAR § 41-204 and 40 C.F.R. § 63.7540 (a)(10)(vi)(C)]
- g. The permittee must complete the one-time energy assessment specified in Table 3 to this subpart no later than January 31, 2016. [8 CAR § 41-204 and 40 C.F.R. § 63.7510 (e)]

Notifications

- h. The permittee submit to the Administrator all of the notifications in §§63.7(b) and (c), 63.8(e), (f)(4) and (6), and 63.9(b) through (h) that apply to you by the dates specified. [8 CAR § 41-204 and 40 C.F.R. § 63.7545 (a)]
- i. If you are not required to conduct an initial compliance demonstration as specified in §63.7530(a), the Notification of Compliance Status must only contain the information specified in paragraphs (e)(1) and (8) of this section and must be submitted within 60 days of January 31, 2016. [8 CAR § 41-204 and 40 C.F.R. § 63.7545 (e)]
- j. In addition to the information required in §63.9(h)(2), your notification of compliance status must include the following certification(s) of compliance, as applicable, and signed by a responsible official: [8 CAR § 41-204 and 40 C.F.R. § 63.7545 (e)(8)]
 - i. “This facility completed the required initial tune-up for all of the boilers and process heaters covered by 40 CFR part 63 subpart DDDDD at this site according to the procedures in §63.7540(a)(10)(i) through (vi).” [8 CAR § 41-204 and 40 C.F.R. § 63.7545 (e)(8)(i)]
 - ii. “This facility has had an energy assessment performed according to §63.7530(e).” [8 CAR § 41-204 and 40 C.F.R. § 63.7545 (e)(8)(ii)]

Reporting

- k. The permittee shall submit annual compliance reports in accordance with § 63.7550 and Table 9 to Subpart DDDDD. The permittee shall submit a compliance report with the information in 63.7550 (c)(5)(i) through (iii), (xiv), and (xvii). [8 CAR § 41-204 and 40 C.F.R. § 63.7550(a)]

Table 9 to Subpart DDDDD of Part 63—Reporting Requirements	
You must submit a ...	The report must contain ...
1. Compliance report	a. Information required in §63.7550(c)(1) through (5); and b. If there are no deviations from any emission limitation (emission limit and operating limit) that applies to you and there are no deviations from the requirements for work practice standards for periods of startup and shutdown in Table 3 to this subpart that apply to you, a statement that there were no deviations from the emission limitations and work practice standards during the reporting period. If there were no periods during which the CMSs, including continuous emissions monitoring system, continuous opacity monitoring system, and operating parameter monitoring systems, were out-of-control as specified in §63.8(c)(7), a

Table 9 to Subpart DDDDD of Part 63—Reporting Requirements	
You must submit a ...	The report must contain ...
	statement that there were no periods during which the CMSs were out-of-control during the reporting period; and
	c. If you have a deviation from any emission limitation (emission limit and operating limit) where you are not using a CMS to comply with that emission limit or operating limit, or a deviation from a work practice standard for periods of startup and shutdown, during the reporting period, the report must contain the information in §63.7550(d); and
	d. If there were periods during which the CMSs, including continuous emissions monitoring system, continuous opacity monitoring system, and operating parameter monitoring systems, were out-of-control as specified in §63.8(c)(7), or otherwise not operating, the report must contain the information in §63.7550(e)

Recordkeeping

- l. The permittee shall keep a copy of each notification and report that submitted to comply with Subpart DDDDD, including all documentation supporting any Initial Notification or Notification of Compliance Status or semiannual compliance report that you submitted, according to the requirements in §63.10(b)(2)(xiv). [8 CAR § 41-204 and 40 C.F.R. § 63.7555 (a)(1)]
- m. The permittee's records must be in a form suitable and readily available for expeditious review, according to §63.10(b)(1). [8 CAR § 41-204 and 40 C.F.R. § 63.7560(a)]
- n. As specified in §63.10(b)(1), the permittee shall keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. [8 CAR § 41-204 and 40 C.F.R. § 63.7560(b)]

SECTION VII: INSIGNIFICANT ACTIVITIES

The Division of Environmental Quality deems the following types of activities or emissions as insignificant on the basis of size, emission rate, production rate, or activity in accordance with Group A of the Insignificant Activities list found in 8 CAR pt. 40 and pt. 41 Appendix A. Group B insignificant activities may be listed but are not required to be listed in permits. Insignificant activity emission determinations rely upon the information submitted by the permittee in an application dated April 2, 2021, May 4, 2022, November 17, 2022, and July 14, 2023. [8 CAR § 42-204 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

	Description	Category
BR-05	Recovered Groundwater Storage Tank, T-3045	A13
BR-16	C-12 Olefin Storage (up to 10,000 gal total capacity)	A3
SL-03	Sulfinol Storage Sump (S-1901)	A3
SL-04	MDEA Storage Tank (T-5001)	A3
CB-10	Wash Water Tank	A13
CB-20	Formic Acid Storage Bins	A13
DE-05	Pressure Vessel	A13
AD-38	Alcohol Addition System	A13
AB-17	T-703 Ethylene Glycol Storage Tank	A3
TB-13	Refrigerant Storage Tank	A13
TB-26	Sulfuric Acid Storage Tank Alternate Use: Ethylene Glycol Storage	A3
TB-27	Refrigerant Storage Tank	A3
TB-36	Water Scrubber Tank	A3
TB-40	Raw Material Weigh Vessel	A13
TB-43	During NC-22 Scenario B and C	A13
TB-44	Heating System Expansion Tank	A13
--	Hot Water Tank, T-602	A13
16-09	EBTBP Ambient Dust Collector SF9398	A13
--	Ethylene Glycol Tanks, T-93952, T-9393, T-9351, T-9359, T-9392	A3
--	Hot Oil Expansion Tank / Heat Transfer fluid Tank, T-9354	A2
--	Hot Oil Surge Tank, D-3490	A13
BT-02	Purchased Brine Surge Tank, T-3017	A13
BT-03	Brine/Oil Separator OS-3002	A13
BT-04	Feed Brine Pump Suction Header Vent	A13
BT-05	Overflow Line Vent	A13
BT-06	Overflow Line Vent	A13
BT-07	Feed Brine Pump Suction Header Vent	A13
BT-08	Brine/Oil Separator Outlet Line Vent	A13
BT-09	Overflow Line Vent	A13

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Description		Category
BT-10	Brine/Oil Separator Outlet Line Vent (OS-3002)	A13
BT-14	Vacuum Pump Vent	A13
BT-15	Overflow Line Vent	A13
BT-18	Brine Underflow Line Vent	A13
BT-19	Brine Underflow Line Vent	A13
BT-20	Brine Underflow Line Vent	A13
BT-30	Brine Management Line Vent	A13
DM-04	Catalyst Loading	A13
DM-05	Stabilizer Hopper	A13
--	Solid Waste Vault No. 2	A13
--	Outfall 002 Bioreactor	A13
--	PSV-1 Sumps	A13
MS-09	Diesel fuel Storage Tanks (up to 10,000 gallons total capacity)	A3
MS-10	Gasoline Storage Tanks (up to 2,000 gallons total capacity)	A13
MS-11	Cooling Towers (Maintenance/Support Facilities)	A13
--	Drinking Water Treatment and Distribution	A13
--	Quality Control Laboratory	A5
DB-23	DPE Heavies Storage Tank	A3
--	200 gallon Hot Oil Tank (CP-6000-68)	A3
--	pH Adjustment Bag Dumping	A13
16-32	H ₂ SO ₄ Tank	A3
--	T-9358 H ₂ SO ₄ Tank	A3
21-05	D3680 Hot Oil Drain	A13
--	Hydrocyclone Tank (T-6630)	A13
--	Hydrocyclone Tank (T-6631)	A13
--	Central Vacuum	A13
--	Painting activities not related to the plant's primary business	B14
--	Welding activities not related to the plant's primary business	B14

SECTION VIII: GENERAL PROVISIONS

1. Any terms or conditions included in this permit which specify and reference Arkansas Pollution Control & Ecology Commission 8 CAR pt. 40 or the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 et seq.) as the sole origin of and authority for the terms or conditions are not required under the Clean Air Act or any of its applicable requirements, and are not federally enforceable under the Clean Air Act. Arkansas Pollution Control & Ecology Commission 8 CAR pt. 40 was adopted pursuant to the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 et seq.). Any terms or conditions included in this permit which specify and reference Arkansas Pollution Control & Ecology Commission 8 CAR pt. 40 or the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 et seq.) as the origin of and authority for the terms or conditions are enforceable under this Arkansas statute. [40 C.F.R. § 70.6(b)(2)]
2. This permit shall be valid for a period of five (5) years beginning on the date this permit becomes effective and ending five (5) years later. [40 C.F.R. § 70.6(a)(2) and 8 CAR § 42-601(2)]
3. The permittee must submit a complete application for permit renewal at least six (6) months before permit expiration. Permit expiration terminates the permittee's right to operate unless the permittee submitted a complete renewal application at least six (6) months before permit expiration. If the permittee submits a complete application, the existing permit will remain in effect until the Division of Environmental Quality takes final action on the renewal application. The Division of Environmental Quality will not necessarily notify the permittee when the permit renewal application is due. [8 CAR § 42-306]
4. Where an applicable requirement of the Clean Air Act, as amended, 42 U.S.C. 7401, et seq. (Act) is more stringent than an applicable requirement of regulations promulgated under Title IV of the Act, the permit incorporates both provisions into the permit, and the Director or the Administrator can enforce both provisions. [40 C.F.R. § 70.6(a)(1)(ii) and 8 CAR § 42-601(1)(C)]
5. The permittee must maintain the following records of monitoring information as required by this permit.
 - a. The date, place as defined in this permit, and time of sampling or measurements;
 - b. The date(s) analyses performed;
 - c. The company or entity performing the analyses;
 - d. The analytical techniques or methods used;
 - e. The results of such analyses; and
 - f. The operating conditions existing at the time of sampling or measurement.

[40 C.F.R. § 70.6(a)(3)(ii)(A) and 8 CAR § 42-601(3)(C)]

6. The permittee must retain the records of all required monitoring data and support information for at least five (5) years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. [40 C.F.R. § 70.6(a)(3)(ii)(B) and 8 CAR § 42-601(3)(C)(ii)]
7. The permittee must submit reports of all required monitoring every six (6) months. If the permit establishes no other reporting period, the reporting period shall end on the last day of the month six months after the issuance of the initial Title V permit and every six months thereafter. The report is due on the first day of the second month after the end of the reporting period. The first report due after issuance of the initial Title V permit shall contain six months of data and each report thereafter shall contain 12 months of data. The report shall contain data for all monitoring requirements in effect during the reporting period. If a monitoring requirement is not in effect for the entire reporting period, only those months of data in which the monitoring requirement was in effect are required to be reported. The report must clearly identify all instances of deviations from permit requirements. A responsible official as defined in 8 CAR § 42-104 must certify all required reports. The permittee will send the reports electronically using <https://portal.adeq.state.ar.us> or mail them to the address below:

Division of Environmental Quality
Office of Air Quality
ATTN: Compliance Inspector Supervisor
5301 Northshore Drive
North Little Rock, AR 72118-5317

[40 C.F.R. § 70.6(a)(3)(iii)(A) and 8 CAR § 42-601(3)(D)(i)]

8. The permittee shall report to the Division of Environmental Quality all deviations from permit requirements, including those attributable to upset conditions as defined in the permit.
 - a. For all upset conditions (as defined in 8 CAR § 41-501), the permittee will make an initial report to the Division of Environmental Quality by the next business day after the discovery of the occurrence. The initial report may be made by telephone and shall include:
 - i. The facility name and location;
 - ii. The process unit or emission source deviating from the permit limit;
 - iii. The permit limit, including the identification of pollutants, from which deviation occurs;
 - iv. The date and time the deviation started;
 - v. The duration of the deviation;

- vi. The emissions during the deviation;
- vii. The probable cause of such deviations;
- viii. Any corrective actions or preventive measures taken or being taken to prevent such deviations in the future; and
- ix. The name of the person submitting the report.

The permittee shall make a full report in writing to the Division of Environmental Quality within five (5) business days of discovery of the occurrence. The report must include, in addition to the information required by the initial report, a schedule of actions taken or planned to eliminate future occurrences and/or to minimize the amount the permit's limits were exceeded and to reduce the length of time the limits were exceeded. The permittee may submit a full report in writing (by facsimile, overnight courier, or other means) by the next business day after discovery of the occurrence, and the report will serve as both the initial report and full report.

- b. For all deviations, the permittee shall report such events in semi-annual reporting and annual certifications required in this permit. This includes all upset conditions reported in 8a above. The semi-annual report must include all the information as required by the initial and full reports required in 8a.

[8 CAR § 41-501, 8 CAR § 41-502, 8 CAR § 42-601(3)(D)(ii), and 40 C.F.R. § 70.6(a)(3)(iii)(B)]

- 9. If any provision of the permit or the application thereof to any person or circumstance is held invalid, such invalidity will not affect other provisions or applications hereof which can be given effect without the invalid provision or application, and to this end, provisions of this Rule are declared to be separable and severable. [40 C.F.R. § 70.6(a)(5), Rule 8 CAR § 42-601(5), and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
- 10. The permittee must comply with all conditions of this Part 70 permit. Any permit noncompliance with applicable requirements as defined in 8 CAR pt. 42 constitutes a violation of the Clean Air Act, as amended, 42 U.S.C. § 7401, et seq. and is grounds for enforcement action; for permit termination, revocation and reissuance, for permit modification; or for denial of a permit renewal application. [40 C.F.R. § 70.6(a)(6)(i) and 8 CAR § 42-601(6)(A)]
- 11. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity to maintain compliance with the conditions of this permit. [40 C.F.R. § 70.6(a)(6)(ii) and 8 CAR § 42-601(6)(B)]
- 12. The Division of Environmental Quality may modify, revoke, reopen and reissue the permit or terminate the permit for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, termination, or of a notification of

- planned changes or anticipated noncompliance does not stay any permit condition. [40 C.F.R. § 70.6(a)(6)(iii) and 8 CAR § 42-601(6)(C)]
13. This permit does not convey any property rights of any sort, or any exclusive privilege. [40 C.F.R. § 70.6(a)(6)(iv) and 8 CAR § 42-601(6)(D)]
 14. The permittee must furnish to the Director, within the time specified by the Director, any information that the Director may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee must also furnish to the Director copies of records required by the permit. For information the permittee claims confidentiality, the Division of Environmental Quality may require the permittee to furnish such records directly to the Director along with a claim of confidentiality. [40 C.F.R. § 70.6(a)(6)(v) and 8 CAR § 42-601(6)(E)]
 15. The permittee must pay all permit fees in accordance with the procedures established in 8 CAR pt. 12. [40 C.F.R. § 70.6(a)(7) and 8 CAR § 42-601(7)]
 16. No permit revision shall be required, under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes provided for elsewhere in this permit. [40 C.F.R. § 70.6(a)(8) and 8 CAR § 42-601(8)]
 17. If the permit allows different operating scenarios, the permittee shall, contemporaneously with making a change from one operating scenario to another, record in a log at the permitted facility a record of the operational scenario. [40 C.F.R. § 70.6(a)(9)(i) and 8 CAR § 42-601(9)(B)(i)]
 18. The Administrator and citizens may enforce under the Act all terms and conditions in this permit, including any provisions designed to limit a source's potential to emit, unless the Division of Environmental Quality specifically designates terms and conditions of the permit as being federally unenforceable under the Act or under any of its applicable requirements. [40 C.F.R. § 70.6(b) and 8 CAR § 42-602(a) and (b)]
 19. Any document (including reports) required by this permit pursuant to 40 C.F.R. § 70 must contain a certification by a responsible official as defined in 8 CAR § 42-104. [40 C.F.R. § 70.6(c)(1) and 8 CAR § 42-603(1)]
 20. The permittee must allow an authorized representative of the Division of Environmental Quality, upon presentation of credentials, to perform the following: [40 C.F.R. § 70.6(c)(2) and 8 CAR § 42-603(2)]
 - a. Enter upon the permittee's premises where the permitted source is located or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

- b. Have access to and copy, at reasonable times, any records required under the conditions of this permit;
 - c. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit; and
 - d. As authorized by the Act, sample or monitor at reasonable times substances or parameters for assuring compliance with this permit or applicable requirements.
- 21. The permittee shall submit a compliance certification with the terms and conditions contained in the permit, including emission limitations, standards, or work practices. The permittee must submit the compliance certification annually. If the permit establishes no other reporting period, the reporting period shall end on the last day of the anniversary month of the initial Title V permit. The report is due on the first day of the second month after the end of the reporting period. The permittee must also submit the compliance certification to the Administrator as well as to the Division of Environmental Quality. All compliance certifications required by this permit must include the following: [40 C.F.R. § 70.6(c)(5) and 8 CAR § 42-603(5)(B)(iii)]
 - a. The identification of each term or condition of the permit that is the basis of the certification;
 - b. The compliance status;
 - c. Whether compliance was continuous or intermittent;
 - d. The method(s) used for determining the compliance status of the source, currently and over the reporting period established by the monitoring requirements of this permit; and
 - e. Such other facts as the Division of Environmental Quality may require elsewhere in this permit or by § 114(a)(3) and § 504(b) of the Act.
- 22. Nothing in this permit will alter or affect the following: [8 CAR § 42-604(c)]
 - a. The provisions of Section 303 of the Act (emergency orders), including the authority of the Administrator under that section;
 - b. The liability of the permittee for any violation of applicable requirements prior to or at the time of permit issuance;
 - c. The applicable requirements of the acid rain program, consistent with § 408(a) of the Act; or
 - d. The ability of EPA to obtain information from a source pursuant to § 114 of the Act.
- 23. This permit authorizes only those pollutant emitting activities addressed in this permit. [Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
- 24. The permittee may request in writing and at least 15 days in advance of the deadline, an extension to any testing, compliance or other dates in this permit. No such extensions are authorized until the permittee receives written Division of Environmental Quality

approval. The Division of Environmental Quality may grant such a request, at its discretion in the following circumstances:

- a. Such an extension does not violate a federal requirement;
- b. The permittee demonstrates the need for the extension; and
- c. The permittee documents that all reasonable measures have been taken to meet the current deadline and documents reasons it cannot be met.

[8 CAR § 40-214(a), 8 CAR § 41-316(a), 8 CAR § 42-913(a), Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 52 Subpart E]

25. The permittee may request in writing and at least 30 days in advance, temporary emissions and/or testing that would otherwise exceed an emission rate, throughput requirement, or other limit in this permit. No such activities are authorized until the permittee receives written Division of Environmental Quality approval. Any such emissions shall be included in the facility's total emissions and reported as such. The Division of Environmental Quality may grant such a request, at its discretion under the following conditions:

- a. Such a request does not violate a federal requirement;
- b. Such a request is temporary in nature;
- c. Such a request will not result in a condition of air pollution;
- d. The request contains such information necessary for the Division of Environmental Quality to evaluate the request, including but not limited to, quantification of such emissions and the date/time such emission will occur;
- e. Such a request will result in increased emissions less than five tons of any individual criteria pollutant, one ton of any single HAP and 2.5 tons of total HAPs; and
- f. The permittee maintains records of the dates and results of such temporary emissions/testing.

[8 CAR § 40-214(b), 8 CAR § 41-316(b), 8 CAR § 42-913(b), Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 52 Subpart E]

26. The permittee may request in writing and at least 30 days in advance, an alternative to the specified monitoring in this permit. No such alternatives are authorized until the permittee receives written Division of Environmental Quality approval. The Division of Environmental Quality may grant such a request, at its discretion under the following conditions:

- a. The request does not violate a federal requirement;
- b. The request provides an equivalent or greater degree of actual monitoring to the current requirements; and
- c. Any such request, if approved, is incorporated in the next permit modification application by the permittee.

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[8 CAR § 40-214(c), 8 CAR § 41-316(c), 8 CAR § 42-913(c), Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 52 Subpart E]

27. Any credible evidence based on sampling, monitoring, and reporting may be used to determine violations of applicable emission limitations. [8 CAR § 40-901, 8 CAR § 41-601, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 52 Subpart E]

Appendix A

Applicable Federal Regulations

40 C.F.R. § 60 Subpart IIII

40 C.F.R. § 60 Subpart JJJJ

40 C.F.R. § 60 Subpart Dc

40 C.F.R. § 60 Subpart Kc

40 C.F.R. § 61 Subpart A

40 C.F.R. § 61 Subpart M

40 C.F.R. § 61 Subpart V

40 C.F.R. § 61 Subpart FF

40 C.F.R. § 63 Subpart A

40 C.F.R. § 63 Subpart F

40 C.F.R. § 63 Subpart G

40 C.F.R. § 63 Subpart H

40 C.F.R. § 63 Subpart SS

40 C.F.R. § 63 Subpart EEEE

40 C.F.R. § 63 Subpart FFFF

40 C.F.R. § 63 Subpart ZZZZ

40 C.F.R. § 63 Subpart DDDDD

40 C.F.R. § 82 Subpart A

40 C.F.R. § 82 Subpart E

40 C.F.R. § 82 Subpart F

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Title 40 —Protection of Environment

Chapter I —Environmental Protection Agency

Subchapter C —Air Programs

Part 60 —Standards of Performance for New Stationary Sources

Authority: 42 U.S.C. 7401 *et seq.*

Source: 36 FR 24877, Dec. 23, 1971, unless otherwise noted.

Subpart IIII Standards of Performance for Stationary Compression Ignition Internal
Combustion Engines

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Subpart IIII—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

Source: 71 FR 39172, July 11, 2006, unless otherwise noted.

WHAT THIS SUBPART COVERS

§ 60.4200 Am I subject to this subpart?

- (a) The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) and other persons as specified in paragraphs (a)(1) through (4) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator.
 - (1) Manufacturers of stationary CI ICE with a displacement of less than 30 liters per cylinder where the model year is:
 - (i) 2007 or later, for engines that are not fire pump engines;
 - (ii) The model year listed in Table 3 to this subpart or later model year, for fire pump engines.
 - (2) Owners and operators of stationary CI ICE that commence construction after July 11, 2005, where the stationary CI ICE are:
 - (i) Manufactured after April 1, 2006, and are not fire pump engines, or
 - (ii) Manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006.
 - (3) Owners and operators of any stationary CI ICE that are modified or reconstructed after July 11, 2005 and any person that modifies or reconstructs any stationary CI ICE after July 11, 2005.
 - (4) The provisions of § 60.4208 of this subpart are applicable to all owners and operators of stationary CI ICE that commence construction after July 11, 2005.
- (b) The provisions of this subpart are not applicable to stationary CI ICE being tested at a stationary CI ICE test cell/stand.
- (c) If you are an owner or operator of an area source subject to this subpart, you are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart applicable to area sources.
- (d) Stationary CI ICE may be eligible for exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C, except that owners and operators, as well as manufacturers, may be eligible to request an exemption for national security.
- (e) Owners and operators of facilities with CI ICE that are acting as temporary replacement units and that are located at a stationary source for less than 1 year and that have been properly certified as meeting the standards that would be applicable to such engine under the appropriate nonroad engine provisions, are not required to meet any other provisions under this subpart with regard to such engines.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37967, June 28, 2011; 86 FR 34357, June 29, 2021]

EMISSION STANDARDS FOR MANUFACTURERS

§ 60.4201 What emission standards must I meet for non-emergency engines if I am a stationary CI internal combustion engine manufacturer?

- (a) Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later non-emergency stationary CI ICE with a maximum engine power less than or equal to 2,237 kilowatt (KW) (3,000 horsepower (HP)) and a displacement of less than 10 liters per cylinder to the certification emission standards for new nonroad CI engines in 40 CFR 1039.101, 1039.102, 1039.104, 1039.105, 1039.107, and 1039.115 and 40 CFR part 1039, appendix I, as applicable, for all pollutants, for the same model year and maximum engine power.
- (b) Stationary CI internal combustion engine manufacturers must certify their 2007 through 2010 model year non-emergency stationary CI ICE with a maximum engine power greater than 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder to the emission standards in table 1 to this subpart, for all pollutants, for the same maximum engine power.
- (c) Stationary CI internal combustion engine manufacturers must certify their 2011 model year and later non-emergency stationary CI ICE with a maximum engine power greater than 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder to the certification emission standards for new nonroad CI engines in 40 CFR 1039.101, 40 CFR 1039.102, 40 CFR 1039.104, 40 CFR 1039.105, 40 CFR 1039.107, and 40 CFR 1039.115, as applicable, for all pollutants, for the same maximum engine power.
- (d) Stationary CI internal combustion engine manufacturers must certify the following non-emergency stationary CI ICE to the appropriate Tier 2 emission standards for new marine CI engines as described in 40 CFR part 1042, appendix I, for all pollutants, for the same displacement and rated power:
 - (1) Their 2007 model year through 2012 non-emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder;
 - (2) Their 2013 model year non-emergency stationary CI ICE with a maximum engine power greater than or equal to 3,700 KW (4,958 HP) and a displacement of greater than or equal to 10 liters per cylinder and less than 15 liters per cylinder; and
 - (3) Their 2013 model year non-emergency stationary CI ICE with a displacement of greater than or equal to 15 liters per cylinder and less than 30 liters per cylinder.
- (e) Stationary CI internal combustion engine manufacturers must certify the following non-emergency stationary CI ICE to the certification emission standards and other requirements for new marine CI engines in 40 CFR 1042.101, 40 CFR 1042.107, 40 CFR 1042.110, 40 CFR 1042.115, 40 CFR 1042.120, and 40 CFR 1042.145, as applicable, for all pollutants, for the same displacement and maximum engine power:
 - (1) Their 2013 model year non-emergency stationary CI ICE with a maximum engine power less than 3,700 KW (4,958 HP) and a displacement of greater than or equal to 10 liters per cylinder and less than 15 liters per cylinder; and
 - (2) Their 2014 model year and later non-emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder.

- (f) Notwithstanding the requirements in paragraphs (a) through (c) of this section, stationary non-emergency CI ICE identified in paragraphs (a) and (c) of this section may be certified to the provisions of 40 CFR part 1042 for commercial engines that are applicable for the engine's model year, displacement, power density, and maximum engine power if the engines will be used solely in either or both of the following locations:
 - (1) Remote areas of Alaska; and
 - (2) Marine offshore installations.
- (g) Notwithstanding the requirements in paragraphs (a) through (f) of this section, stationary CI internal combustion engine manufacturers are not required to certify reconstructed engines; however manufacturers may elect to do so. The reconstructed engine must be certified to the emission standards specified in paragraphs (a) through (e) of this section that are applicable to the model year, maximum engine power, and displacement of the reconstructed stationary CI ICE.
- (h) Stationary CI ICE certified to the standards in 40 CFR part 1039 and equipped with auxiliary emission control devices (AECs) as specified in 40 CFR 1039.665 must meet the Tier 1 certification emission standards for new nonroad CI engines in 40 CFR part 1039, appendix I, while the AEC is activated during a qualified emergency situation. A qualified emergency situation is defined in 40 CFR 1039.665. When the qualified emergency situation has ended and the AEC is deactivated, the engine must resume meeting the otherwise applicable emission standard specified in this section.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37967, June 28, 2011; 81 FR 44219, July 7, 2016; 86 FR 34357, June 29, 2021]

§ 60.4202 What emission standards must I meet for emergency engines if I am a stationary CI internal combustion engine manufacturer?

- (a) Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later emergency stationary CI ICE with a maximum engine power less than or equal to 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder that are not fire pump engines to the emission standards specified in paragraphs (a)(1) through (2) of this section.
 - (1) For engines with a maximum engine power less than 37 KW (50 HP):
 - (i) The Tier 2 emission standards for new nonroad CI engines for the appropriate rated power as described in 40 CFR part 1039, appendix I, for all pollutants and the smoke standards as specified in 40 CFR 1039.105 for model year 2007 engines; and
 - (ii) The certification emission standards for new nonroad CI engines in 40 CFR 1039.104, 40 CFR 1039.105, 40 CFR 1039.107, 40 CFR 1039.115, and table 2 to this subpart, for 2008 model year and later engines.
 - (2) For engines with a rated power greater than or equal to 37 KW (50 HP), the Tier 2 or Tier 3 emission standards for new nonroad CI engines for the same rated power as described in 40 CFR part 1039, appendix I, for all pollutants and the smoke standards as specified in 40 CFR 1039.105 beginning in model year 2007.
- (b) Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later emergency stationary CI ICE with a maximum engine power greater than 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder that are not fire pump engines to the emission standards specified in paragraphs (b)(1) through (2) of this section.

- (1) For 2007 through 2010 model years, the emission standards in table 1 to this subpart, for all pollutants, for the same maximum engine power.
 - (2) For 2011 model year and later, the Tier 2 emission standards as described in 40 CFR part 1039, appendix I, for all pollutants and the smoke standards as specified in 40 CFR 1039.105.
- (c) [Reserved]
- (d) Beginning with the model years in table 3 to this subpart, stationary CI internal combustion engine manufacturers must certify their fire pump stationary CI ICE to the emission standards in table 4 to this subpart, for all pollutants, for the same model year and NFPA nameplate power.
- (e) Stationary CI internal combustion engine manufacturers must certify the following emergency stationary CI ICE that are not fire pump engines to the appropriate Tier 2 emission standards for new marine CI engines as described in 40 CFR part 1042, appendix I, for all pollutants, for the same displacement and rated power:
- (1) Their 2007 model year through 2012 emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder;
 - (2) Their 2013 model year and later emergency stationary CI ICE with a maximum engine power greater than or equal to 3,700 KW (4,958 HP) and a displacement of greater than or equal to 10 liters per cylinder and less than 15 liters per cylinder;
 - (3) Their 2013 model year emergency stationary CI ICE with a displacement of greater than or equal to 15 liters per cylinder and less than 30 liters per cylinder; and
 - (4) Their 2014 model year and later emergency stationary CI ICE with a maximum engine power greater than or equal to 2,000 KW (2,682 HP) and a displacement of greater than or equal to 15 liters per cylinder and less than 30 liters per cylinder.
- (f) Stationary CI internal combustion engine manufacturers must certify the following emergency stationary CI ICE to the certification emission standards and other requirements applicable to Tier 3 new marine CI engines in 40 CFR 1042.101, 40 CFR 1042.107, 40 CFR 1042.115, 40 CFR 1042.120, and 40 CFR 1042.145, for all pollutants, for the same displacement and maximum engine power:
- (1) Their 2013 model year and later emergency stationary CI ICE with a maximum engine power less than 3,700 KW (4,958 HP) and a displacement of greater than or equal to 10 liters per cylinder and less than 15 liters per cylinder; and
 - (2) Their 2014 model year and later emergency stationary CI ICE with a maximum engine power less than 2,000 KW (2,682 HP) and a displacement of greater than or equal to 15 liters per cylinder and less than 30 liters per cylinder.
- (g) Notwithstanding the requirements in paragraphs (a) through (d) of this section, stationary emergency CI ICE identified in paragraphs (a) and (c) of this section may be certified to the provisions of 40 CFR part 1042 for commercial engines that are applicable for the engine's model year, displacement, power density, and maximum engine power if the engines will be used solely in either or both of the locations identified in paragraphs (g)(1) and (2) of this section. Engines that would be subject to the Tier 4 standards in 40 CFR part 1042 that are used solely in either or both of the locations identified in paragraphs (g)(1) and (2) of this section may instead continue to be certified to the previous tier of standards in 40 CFR part 1042. The previous tier is Tier 3 in most cases; however, the previous tier is Tier 2 if there are no Tier 3 standards specified for engines of a certain size or power rating.

- (1) Remote areas of Alaska; and
- (2) Marine offshore installations.
- (h) Notwithstanding the requirements in paragraphs (a) through (f) of this section, stationary CI internal combustion engine manufacturers are not required to certify reconstructed engines; however manufacturers may elect to do so. The reconstructed engine must be certified to the emission standards specified in paragraphs (a) through (f) of this section that are applicable to the model year, maximum engine power and displacement of the reconstructed emergency stationary CI ICE.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37968, June 28, 2011; 81 FR 44219, July 7, 2016; 86 FR 34358, June 29, 2021; 88 FR 4471, Jan. 24, 2023]

§ 60.4203 How long must my engines meet the emission standards if I am a manufacturer of stationary CI internal combustion engines?

Engines manufactured by stationary CI internal combustion engine manufacturers must meet the emission standards as required in §§ 60.4201 and 60.4202 during the certified emissions life of the engines.

[76 FR 37968, June 28, 2011]

EMISSION STANDARDS FOR OWNERS AND OPERATORS

§ 60.4204 What emission standards must I meet for non-emergency engines if I am an owner or operator of a stationary CI internal combustion engine?

- (a) Owners and operators of pre-2007 model year non-emergency stationary CI ICE with a displacement of less than 10 liters per cylinder must comply with the emission standards in table 1 to this subpart. Owners and operators of pre-2007 model year non-emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder must comply with the Tier 1 emission standards in 40 CFR part 1042, appendix I.
- (b) Owners and operators of 2007 model year and later non-emergency stationary CI ICE with a displacement of less than 30 liters per cylinder must comply with the emission standards for new CI engines in § 60.4201 for their 2007 model year and later stationary CI ICE, as applicable.
- (c) Owners and operators of non-emergency stationary CI engines with a displacement of greater than or equal to 30 liters per cylinder must meet the following requirements:
 - (1) For engines installed prior to January 1, 2012, limit the emissions of NO_x in the stationary CI internal combustion engine exhaust to the following:
 - (i) 17.0 grams per kilowatt-hour (g/KW-hr) (12.7 grams per horsepower-hr (g/HP-hr)) when maximum engine speed is less than 130 revolutions per minute (rpm);
 - (ii) $45 \cdot n^{-0.2}$ g/KW-hr ($34 \cdot n^{-0.2}$ g/HP-hr) when maximum engine speed is 130 or more but less than 2,000 rpm, where n is maximum engine speed; and
 - (iii) 9.8 g/KW-hr (7.3 g/HP-hr) when maximum engine speed is 2,000 rpm or more.
 - (2) For engines installed on or after January 1, 2012 and before January 1, 2016, limit the emissions of NO_x in the stationary CI internal combustion engine exhaust to the following:

- (i) 14.4 g/KW-hr (10.7 g/HP-hr) when maximum engine speed is less than 130 rpm;
 - (ii) $44 \cdot n^{-0.23}$ g/KW-hr ($33 \cdot n^{-0.23}$ g/HP-hr) when maximum engine speed is greater than or equal to 130 but less than 2,000 rpm and where n is maximum engine speed; and
 - (iii) 7.7 g/KW-hr (5.7 g/HP-hr) when maximum engine speed is greater than or equal to 2,000 rpm.
- (3) For engines installed on or after January 1, 2016, limit the emissions of NO_x in the stationary CI internal combustion engine exhaust to the following:
- (i) 3.4 g/KW-hr (2.5 g/HP-hr) when maximum engine speed is less than 130 rpm;
 - (ii) $9.0 \cdot n^{-0.20}$ g/KW-hr ($6.7 \cdot n^{-0.20}$ g/HP-hr) where n (maximum engine speed) is 130 or more but less than 2,000 rpm; and
 - (iii) 2.0 g/KW-hr (1.5 g/HP-hr) where maximum engine speed is greater than or equal to 2,000 rpm.
- (4) Reduce particulate matter (PM) emissions by 60 percent or more, or limit the emissions of PM in the stationary CI internal combustion engine exhaust to 0.15 g/KW-hr (0.11 g/HP-hr).
- (d) Owners and operators of non-emergency stationary CI ICE with a displacement of less than 30 liters per cylinder who conduct performance tests in-use must meet the not-to-exceed (NTE) standards as indicated in § 60.4212.
- (e) Owners and operators of any modified or reconstructed non-emergency stationary CI ICE subject to this subpart must meet the emission standards applicable to the model year, maximum engine power, and displacement of the modified or reconstructed non-emergency stationary CI ICE that are specified in paragraphs (a) through (d) of this section.
- (f) Owners and operators of stationary CI ICE certified to the standards in 40 CFR part 1039 and equipped with AECDs as specified in 40 CFR 1039.665 must meet the Tier 1 certification emission standards for new nonroad CI engines in 40 CFR part 1039, appendix I, while the AECD is activated during a qualified emergency situation. A qualified emergency situation is defined in 40 CFR 1039.665. When the qualified emergency situation has ended and the AECD is deactivated, the engine must resume meeting the otherwise applicable emission standard specified in this section.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37968, June 28, 2011; 81 FR 44219, July 7, 2016; 86 FR 34358, June 29, 2021]

§ 60.4205 What emission standards must I meet for emergency engines if I am an owner or operator of a stationary CI internal combustion engine?

- (a) Owners and operators of pre-2007 model year emergency stationary CI ICE with a displacement of less than 10 liters per cylinder that are not fire pump engines must comply with the emission standards in Table 1 to this subpart. Owners and operators of pre-2007 model year emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder that are not fire pump engines must comply with the Tier 1 emission standards in 40 CFR part 1042, appendix I.
- (b) Owners and operators of 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards for new nonroad CI engines in § 60.4202, for all pollutants, for the same model year and maximum engine power for their 2007 model year and later emergency stationary CI ICE.
- (c) Owners and operators of fire pump engines with a displacement of less than 30 liters per cylinder must comply with the emission standards in table 4 to this subpart, for all pollutants.

- (d) Owners and operators of emergency stationary CI engines with a displacement of greater than or equal to 30 liters per cylinder must meet the requirements in this section.
 - (1) For engines installed prior to January 1, 2012, limit the emissions of NO_x in the stationary CI internal combustion engine exhaust to the following:
 - (i) 17.0 g/KW-hr (12.7 g/HP-hr) when maximum engine speed is less than 130 rpm;
 - (ii) $45 \cdot n^{-0.2}$ g/KW-hr ($34 \cdot n^{-0.2}$ g/HP-hr) when maximum engine speed is 130 or more but less than 2,000 rpm, where n is maximum engine speed; and
 - (iii) 9.8 g/kW-hr (7.3 g/HP-hr) when maximum engine speed is 2,000 rpm or more.
 - (2) For engines installed on or after January 1, 2012, limit the emissions of NO_x in the stationary CI internal combustion engine exhaust to the following:
 - (i) 14.4 g/KW-hr (10.7 g/HP-hr) when maximum engine speed is less than 130 rpm;
 - (ii) $44 \cdot n^{-0.23}$ g/KW-hr ($33 \cdot n^{-0.23}$ g/HP-hr) when maximum engine speed is greater than or equal to 130 but less than 2,000 rpm and where n is maximum engine speed; and
 - (iii) 7.7 g/KW-hr (5.7 g/HP-hr) when maximum engine speed is greater than or equal to 2,000 rpm.
 - (3) Limit the emissions of PM in the stationary CI internal combustion engine exhaust to 0.40 g/KW-hr (0.30 g/HP-hr).
- (e) Owners and operators of emergency stationary CI ICE with a displacement of less than 30 liters per cylinder who conduct performance tests in-use must meet the NTE standards as indicated in § 60.4212.
- (f) Owners and operators of any modified or reconstructed emergency stationary CI ICE subject to this subpart must meet the emission standards applicable to the model year, maximum engine power, and displacement of the modified or reconstructed CI ICE that are specified in paragraphs (a) through (e) of this section.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37969, June 28, 2011; 86 FR 34358, June 29, 2021]

§ 60.4206 How long must I meet the emission standards if I am an owner or operator of a stationary CI internal combustion engine?

Owners and operators of stationary CI ICE must operate and maintain stationary CI ICE that achieve the emission standards as required in §§ 60.4204 and 60.4205 over the entire life of the engine.

[76 FR 37969, June 28, 2011]

FUEL REQUIREMENTS FOR OWNERS AND OPERATORS

§ 60.4207 What fuel requirements must I meet if I am an owner or operator of a stationary CI internal combustion engine subject to this subpart?

- (a) [Reserved]

- (b) Beginning October 1, 2010, owners and operators of stationary CI ICE subject to this subpart with a displacement of less than 30 liters per cylinder that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 1090.305 for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to October 1, 2010, may be used until depleted.
- (c) [Reserved]
- (d) Beginning June 1, 2012, owners and operators of stationary CI ICE subject to this subpart with a displacement of greater than or equal to 30 liters per cylinder must use diesel fuel that meets a maximum per-gallon sulfur content of 1,000 parts per million (ppm).
- (e) Stationary CI ICE that have a national security exemption under § 60.4200(d) are also exempt from the fuel requirements in this section.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37969, June 28, 2011; 78 FR 6695, Jan. 30, 2013; 85 FR 78463, Dec. 4, 2020]

OTHER REQUIREMENTS FOR OWNERS AND OPERATORS

§ 60.4208 What is the deadline for importing or installing stationary CI ICE produced in previous model years?

- (a) After December 31, 2008, owners and operators may not install stationary CI ICE (excluding fire pump engines) that do not meet the applicable requirements for 2007 model year engines.
- (b) After December 31, 2009, owners and operators may not install stationary CI ICE with a maximum engine power of less than 19 KW (25 HP) (excluding fire pump engines) that do not meet the applicable requirements for 2008 model year engines.
- (c) After December 31, 2014, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 19 KW (25 HP) and less than 56 KW (75 HP) that do not meet the applicable requirements for 2013 model year non-emergency engines.
- (d) After December 31, 2013, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 56 KW (75 HP) and less than 130 KW (175 HP) that do not meet the applicable requirements for 2012 model year non-emergency engines.
- (e) After December 31, 2012, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 130 KW (175 HP), including those above 560 KW (750 HP), that do not meet the applicable requirements for 2011 model year non-emergency engines.
- (f) After December 31, 2016, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 560 KW (750 HP) that do not meet the applicable requirements for 2015 model year non-emergency engines.
- (g) After December 31, 2018, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power greater than or equal to 600 KW (804 HP) and less than 2,000 KW (2,680 HP) and a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder that do not meet the applicable requirements for 2017 model year non-emergency engines.

- (h) In addition to the requirements specified in §§ 60.4201, 60.4202, 60.4204, and 60.4205, it is prohibited to import stationary CI ICE with a displacement of less than 30 liters per cylinder that do not meet the applicable requirements specified in paragraphs (a) through (g) of this section after the dates specified in paragraphs (a) through (g) of this section.
- (i) The requirements of this section do not apply to owners or operators of stationary CI ICE that have been modified, reconstructed, and do not apply to engines that were removed from one existing location and reinstalled at a new location.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37969, June 28, 2011]

§ 60.4209 What are the monitoring requirements if I am an owner or operator of a stationary CI internal combustion engine?

If you are an owner or operator, you must meet the monitoring requirements of this section. In addition, you must also meet the monitoring requirements specified in § 60.4211.

- (a) If you are an owner or operator of an emergency stationary CI internal combustion engine that does not meet the standards applicable to non-emergency engines, you must install a non-resettable hour meter prior to startup of the engine.
- (b) If you are an owner or operator of a stationary CI internal combustion engine equipped with a diesel particulate filter to comply with the emission standards in § 60.4204, the diesel particulate filter must be installed with a backpressure monitor that notifies the owner or operator when the high backpressure limit of the engine is approached.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37969, June 28, 2011]

COMPLIANCE REQUIREMENTS

§ 60.4210 What are my compliance requirements if I am a stationary CI internal combustion engine manufacturer?

- (a) Stationary CI internal combustion engine manufacturers must certify their stationary CI ICE with a displacement of less than 10 liters per cylinder to the emission standards specified in §§ 60.4201(a) through (c) and 60.4202(a), (b), and (d) using the certification procedures required in 40 CFR part 1039, subpart C, and must test their engines as specified in 40 CFR part 1039. For the purposes of this subpart, engines certified to the standards in Table 1 to this subpart shall be subject to the same certification procedures required for engines certified to the Tier 1 standards in 40 CFR part 1039, appendix I. For the purposes of this subpart, engines certified to the standards in Table 4 to this subpart shall be subject to the same certification procedures required for engines certified to the Tier 1 standards in 40 CFR part 1039, appendix I, except that engines with NFPA nameplate power of less than 37 KW (50 HP) certified to model year 2011 or later standards shall be subject to the same requirements as engines certified to the standards in 40 CFR part 1039.

- (b) Stationary CI internal combustion engine manufacturers must certify their stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder to the emission standards specified in §§ 60.4201(d) and (e) and 60.4202(e) and (f) using the certification procedures required in 40 CFR part 1042, subpart C, and must test their engines as specified in 40 CFR part 1042.
- (c) Stationary CI internal combustion engine manufacturers must meet the requirements of 40 CFR 1039.120, 1039.125, 1039.130, and 1039.135 and 40 CFR part 1068 for engines that are certified to the emission standards in 40 CFR part 1039. Stationary CI internal combustion engine manufacturers must meet the corresponding provisions of 40 CFR part 1042 for engines that would be covered by that part if they were nonroad (including marine) engines. Labels on such engines must refer to stationary engines, rather than or in addition to nonroad or marine engines, as appropriate. Stationary CI internal combustion engine manufacturers must label their engines according to paragraphs (c)(1) through (3) of this section.
 - (1) Stationary CI internal combustion engines manufactured from January 1, 2006 to March 31, 2006 (January 1, 2006 to June 30, 2006 for fire pump engines), other than those that are part of certified engine families under the nonroad CI engine regulations, must be labeled according to 40 CFR 1039.20.
 - (2) Stationary CI internal combustion engines manufactured from April 1, 2006 to December 31, 2006 (or, for fire pump engines, July 1, 2006 to December 31 of the year preceding the year listed in table 3 to this subpart) must be labeled according to paragraphs (c)(2)(i) through (iii) of this section:
 - (i) Stationary CI internal combustion engines that are part of certified engine families under the nonroad regulations must meet the labeling requirements for nonroad CI engines, but do not have to meet the labeling requirements in 40 CFR 1039.20.
 - (ii) Stationary CI internal combustion engines that meet Tier 1 requirements (or requirements for fire pumps) under this subpart, but do not meet the requirements applicable to nonroad CI engines must be labeled according to 40 CFR 1039.20. The engine manufacturer may add language to the label clarifying that the engine meets Tier 1 requirements (or requirements for fire pumps) of this subpart.
 - (iii) Stationary CI internal combustion engines manufactured after April 1, 2006 that do not meet Tier 1 requirements of this subpart, or fire pumps engines manufactured after July 1, 2006 that do not meet the requirements for fire pumps under this subpart, may not be used in the U.S. If any such engines are manufactured in the U.S. after April 1, 2006 (July 1, 2006 for fire pump engines), they must be exported or must be brought into compliance with the appropriate standards prior to initial operation. The export provisions of 40 CFR 1068.230 would apply to engines for export and the manufacturers must label such engines according to 40 CFR 1068.230.
 - (3) Stationary CI internal combustion engines manufactured after January 1, 2007 (for fire pump engines, after January 1 of the year listed in table 3 to this subpart, as applicable) must be labeled according to paragraphs (c)(3)(i) through (iii) of this section.
 - (i) Stationary CI internal combustion engines that meet the requirements of this subpart and the corresponding requirements for nonroad (including marine) engines of the same model year and HP must be labeled according to the provisions in 40 CFR part 1039 or 1042, as appropriate.

- (ii) Stationary CI internal combustion engines that meet the requirements of this subpart, but are not certified to the standards applicable to nonroad (including marine) engines of the same model year and HP must be labeled according to the provisions in 40 CFR part 1039 or 1042, as appropriate, but the words "stationary" must be included instead of "nonroad" or "marine" on the label. In addition, such engines must be labeled according to 40 CFR 1039.20.
- (iii) Stationary CI internal combustion engines that do not meet the requirements of this subpart must be labeled according to 40 CFR 1068.230 and must be exported under the provisions of 40 CFR 1068.230.
- (d) An engine manufacturer certifying an engine family or families to standards under this subpart that are identical to standards applicable under 40 CFR part 1039 or 1042 for that model year may certify any such family that contains both nonroad (including marine) and stationary engines as a single engine family and/or may include any such family containing stationary engines in the averaging, banking, and trading provisions applicable for such engines under those parts.
- (e) Manufacturers of engine families discussed in paragraph (d) of this section may meet the labeling requirements referred to in paragraph (c) of this section for stationary CI ICE by either adding a separate label containing the information required in paragraph (c) of this section or by adding the words "and stationary" after the word "nonroad" or "marine," as appropriate, to the label.
- (f) Starting with the model years shown in table 5 to this subpart, stationary CI internal combustion engine manufacturers must add a permanent label stating that the engine is for stationary emergency use only to each new emergency stationary CI internal combustion engine greater than or equal to 19 KW (25 HP) that meets all the emission standards for emergency engines in § 60.4202 but does not meet all the emission standards for non-emergency engines in § 60.4201. The label must be added according to the labeling requirements specified in 40 CFR 1039.135(b). Engine manufacturers must specify in the owner's manual that operation of emergency engines is limited to emergency operations and required maintenance and testing.
- (g) Manufacturers of fire pump engines may use the test cycle in table 6 to this subpart for testing fire pump engines and may test at the NFPA certified nameplate HP, provided that the engine is labeled as "Fire Pump Applications Only".
- (h) Engine manufacturers, including importers, may introduce into commerce uncertified engines or engines certified to earlier standards that were manufactured before the new or changed standards took effect until inventories are depleted, as long as such engines are part of normal inventory. For example, if the engine manufacturers' normal industry practice is to keep on hand a one-month supply of engines based on its projected sales, and a new tier of standards starts to apply for the 2009 model year, the engine manufacturer may manufacture engines based on the normal inventory requirements late in the 2008 model year, and sell those engines for installation. The engine manufacturer may not circumvent the provisions of § 60.4201 or § 60.4202 by stockpiling engines that are built before new or changed standards take effect. Stockpiling of such engines beyond normal industry practice is a violation of this subpart.
- (i) The replacement engine provisions of 40 CFR 1068.240 are applicable to stationary CI engines replacing existing equipment that is less than 15 years old.
- (j) Stationary CI ICE manufacturers may equip their stationary CI internal combustion engines certified to the emission standards in 40 CFR part 1039 with AECDs for qualified emergency situations according to the requirements of 40 CFR 1039.665. Manufacturers of stationary CI ICE equipped with AECDs as allowed by 40 CFR 1039.665 must meet all the requirements in 40 CFR 1039.665 that apply to manufacturers.

Manufacturers must document that the engine complies with the Tier 1 standard in 40 CFR part 1039, appendix I, when the AECD is activated. Manufacturers must provide any relevant testing, engineering analysis, or other information in sufficient detail to support such statement when applying for certification (including amending an existing certificate) of an engine equipped with an AECD as allowed by 40 CFR 1039.665.

- (k) Manufacturers of any size may certify their emergency stationary CI internal combustion engines under this section using assigned deterioration factors established by EPA, consistent with 40 CFR 1039.240 and 1042.240.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37969, June 28, 2011; 81 FR 44219, July 7, 2016; 86 FR 34358, June 29, 2021]

§ 60.4211 What are my compliance requirements if I am an owner or operator of a stationary CI internal combustion engine?

- (a) If you are an owner or operator and must comply with the emission standards specified in this subpart, you must do all of the following, except as permitted under paragraph (g) of this section:
 - (1) Operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions;
 - (2) Change only those emission-related settings that are permitted by the manufacturer; and
 - (3) Meet the requirements of 40 CFR part 1068, as they apply to you.
- (b) If you are an owner or operator of a pre-2007 model year stationary CI internal combustion engine and must comply with the emission standards specified in § 60.4204(a) or § 60.4205(a), or if you are an owner or operator of a CI fire pump engine that is manufactured prior to the model years in table 3 to this subpart and must comply with the emission standards specified in § 60.4205(c), you must demonstrate compliance according to one of the methods specified in paragraphs (b)(1) through (5) of this section.
 - (1) Purchasing an engine certified to emission standards for the same model year and maximum engine power as described in 40 CFR parts 1039 and 1042, as applicable. The engine must be installed and configured according to the manufacturer's specifications.
 - (2) Keeping records of performance test results for each pollutant for a test conducted on a similar engine. The test must have been conducted using the same methods specified in this subpart and these methods must have been followed correctly.
 - (3) Keeping records of engine manufacturer data indicating compliance with the standards.
 - (4) Keeping records of control device vendor data indicating compliance with the standards.
 - (5) Conducting an initial performance test to demonstrate compliance with the emission standards according to the requirements specified in § 60.4212, as applicable.
- (c) If you are an owner or operator of a 2007 model year and later stationary CI internal combustion engine and must comply with the emission standards specified in § 60.4204(b) or § 60.4205(b), or if you are an owner or operator of a CI fire pump engine that is manufactured during or after the model year that applies to your fire pump engine power rating in table 3 to this subpart and must comply with the emission standards specified in § 60.4205(c), you must comply by purchasing an engine certified to the emission standards in § 60.4204(b), or § 60.4205(b) or (c), as applicable, for the same model year and

maximum (or in the case of fire pumps, NFPA nameplate) engine power. The engine must be installed and configured according to the manufacturer's emission-related specifications, except as permitted in paragraph (g) of this section.

(d) If you are an owner or operator and must comply with the emission standards specified in § 60.4204(c) or § 60.4205(d), you must demonstrate compliance according to the requirements specified in paragraphs (d)(1) through (3) of this section.

(1) Conducting an initial performance test to demonstrate initial compliance with the emission standards as specified in § 60.4213.

(2) Establishing operating parameters to be monitored continuously to ensure the stationary internal combustion engine continues to meet the emission standards. The owner or operator must petition the Administrator for approval of operating parameters to be monitored continuously. The petition must include the information described in paragraphs (d)(2)(i) through (v) of this section.

(i) Identification of the specific parameters you propose to monitor continuously;

(ii) A discussion of the relationship between these parameters and NO_x and PM emissions, identifying how the emissions of these pollutants change with changes in these parameters, and how limitations on these parameters will serve to limit NO_x and PM emissions;

(iii) A discussion of how you will establish the upper and/or lower values for these parameters which will establish the limits on these parameters in the operating limitations;

(iv) A discussion identifying the methods and the instruments you will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments; and

(v) A discussion identifying the frequency and methods for recalibrating the instruments you will use for monitoring these parameters.

(3) For non-emergency engines with a displacement of greater than or equal to 30 liters per cylinder, conducting annual performance tests to demonstrate continuous compliance with the emission standards as specified in § 60.4213.

(e) If you are an owner or operator of a modified or reconstructed stationary CI internal combustion engine and must comply with the emission standards specified in § 60.4204(e) or § 60.4205(f), you must demonstrate compliance according to one of the methods specified in paragraphs (e)(1) or (2) of this section.

(1) Purchasing, or otherwise owning or operating, an engine certified to the emission standards in § 60.4204(e) or § 60.4205(f), as applicable.

(2) Conducting a performance test to demonstrate initial compliance with the emission standards according to the requirements specified in § 60.4212 or § 60.4213, as appropriate. The test must be conducted within 60 days after the engine commences operation after the modification or reconstruction.

(f) If you own or operate an emergency stationary ICE, you must operate the emergency stationary ICE according to the requirements in paragraphs (f)(1) through (3) of this section. In order for the engine to be considered an emergency stationary ICE under this subpart, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as

described in paragraphs (f)(1) through (3), is prohibited. If you do not operate the engine according to the requirements in paragraphs (f)(1) through (3), the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines.

- (1) There is no time limit on the use of emergency stationary ICE in emergency situations.
- (2) You may operate your emergency stationary ICE for the purpose specified in paragraph (f)(2)(i) of this section for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraph (f)(3) of this section counts as part of the 100 hours per calendar year allowed by this paragraph (f)(2).
 - (i) Emergency stationary ICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year.
- (ii)-(iii) [Reserved]
- (3) Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in paragraph (f)(2) of this section. Except as provided in paragraph (f)(3)(i) of this section, the 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.
 - (i) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:
 - (A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator;
 - (B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.
 - (C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.
 - (D) The power is provided only to the facility itself or to support the local transmission and distribution system.
 - (E) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

(ii) [Reserved]

- (g) If you do not install, configure, operate, and maintain your engine and control device according to the manufacturer's emission-related written instructions, or you change emission-related settings in a way that is not permitted by the manufacturer, you must demonstrate compliance as follows:
- (1) If you are an owner or operator of a stationary CI internal combustion engine with maximum engine power less than 100 HP, you must keep a maintenance plan and records of conducted maintenance to demonstrate compliance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, if you do not install and configure the engine and control device according to the manufacturer's emission-related written instructions, or you change the emission-related settings in a way that is not permitted by the manufacturer, you must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of such action.
 - (2) If you are an owner or operator of a stationary CI internal combustion engine greater than or equal to 100 HP and less than or equal to 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of startup, or within 1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after you change emission-related settings in a way that is not permitted by the manufacturer.
 - (3) If you are an owner or operator of a stationary CI internal combustion engine greater than 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of startup, or within 1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after you change emission-related settings in a way that is not permitted by the manufacturer. You must conduct subsequent performance testing every 8,760 hours of engine operation or 3 years, whichever comes first, thereafter to demonstrate compliance with the applicable emission standards.
- (h) The requirements for operators and prohibited acts specified in 40 CFR 1039.665 apply to owners or operators of stationary CI ICE equipped with AECDs for qualified emergency situations as allowed by 40 CFR 1039.665.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37970, June 28, 2011; 78 FR 6695, Jan. 30, 2013; 81 FR 44219, July 7, 2016; 86 FR 34359, June 29, 2021; 87 FR 48605, Aug. 10, 2022]

TESTING REQUIREMENTS FOR OWNERS AND OPERATORS

§ 60.4212 What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of less than 30 liters per cylinder?

Owners and operators of stationary CI ICE with a displacement of less than 30 liters per cylinder who conduct performance tests pursuant to this subpart must do so according to paragraphs (a) through (e) of this section.

- (a) The performance test must be conducted according to the in-use testing procedures in 40 CFR part 1039, subpart F, for stationary CI ICE with a displacement of less than 10 liters per cylinder, and according to 40 CFR part 1042, subpart F, for stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder. Alternatively, stationary CI ICE that are complying with Tier 2 or Tier 3 emission standards as described in 40 CFR part 1039, appendix I, or with Tier 2 emission standards as described in 40 CFR part 1042, appendix I, may follow the testing procedures specified in § 60.4213, as appropriate.
- (b) Exhaust emissions from stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR part 1039 must not exceed the not-to-exceed (NTE) standards for the same model year and maximum engine power as required in 40 CFR 1039.101(e) and 40 CFR 1039.102(g)(1), except as specified in 40 CFR 1039.104(d). This requirement starts when NTE requirements take effect for nonroad diesel engines under 40 CFR part 1039.
- (c) Exhaust emissions from stationary CI ICE subject to Tier 2 or Tier 3 emission standards as described in 40 CFR part 1039, appendix I, or Tier 2 emission standards as described in 40 CFR part 1042, appendix I, must not exceed the NTE numerical requirements, rounded to the same number of decimal places as the applicable standard, determined from the following equation:

$$\text{NTE requirement for each pollutant} = (1.25) \times (\text{STD}) \text{ (Eq. 1)}$$

Where:

STD = The standard specified for that pollutant in 40 CFR part 1039 or 1042, as applicable.

- (d) Exhaust emissions from stationary CI ICE that are complying with the emission standards for pre-2007 model year engines in § 60.4204(a), § 60.4205(a), or § 60.4205(c) must not exceed the NTE numerical requirements, rounded to the same number of decimal places as the applicable standard in § 60.4204(a), § 60.4205(a), or § 60.4205(c), determined from the equation in paragraph (c) of this section.

Where:

STD = The standard specified for that pollutant in § 60.4204(a), § 60.4205(a), or § 60.4205(c).

Alternatively, stationary CI ICE that are complying with the emission standards for pre-2007 model year engines in § 60.4204(a), § 60.4205(a), or § 60.4205(c) may follow the testing procedures specified in § 60.4213, as appropriate.

- (e) Exhaust emissions from stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR part 1042 must not exceed the NTE standards for the same model year and maximum engine power as required in 40 CFR 1042.101(c).

[71 FR 39172, July 11, 2006, as amended at 76 FR 37971, June 28, 2011; 86 FR 34359, June 29, 2021]

§ 60.4213 What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of greater than or equal to 30 liters per cylinder?

Owners and operators of stationary CI ICE with a displacement of greater than or equal to 30 liters per cylinder must conduct performance tests according to paragraphs (a) through (f) of this section.

- (a) Each performance test must be conducted according to the requirements in § 60.8 and under the specific conditions that this subpart specifies in table 7. The test must be conducted within 10 percent of 100 percent peak (or the highest achievable) load.
- (b) You may not conduct performance tests during periods of startup, shutdown, or malfunction, as specified in § 60.8(c).
- (c) You must conduct three separate test runs for each performance test required in this section, as specified in § 60.8(f). Each test run must last at least 1 hour.
- (d) To determine compliance with the percent reduction requirement, you must follow the requirements as specified in paragraphs (d)(1) through (3) of this section.
 - (1) You must use Equation 2 of this section to determine compliance with the percent reduction requirement:

$$\frac{C_i - C_o}{C_i} \times 100 = R \quad (\text{Eq. 2})$$

Where:

C_i = concentration of NO_x or PM at the control device inlet,

C_o = concentration of NO_x or PM at the control device outlet, and

R = percent reduction of NO_x or PM emissions.

- (2) You must normalize the NO_x or PM concentrations at the inlet and outlet of the control device to a dry basis and to 15 percent oxygen (O_2) using Equation 3 of this section, or an equivalent percent carbon dioxide (CO_2) using the procedures described in paragraph (d)(3) of this section.

$$C_{\text{adj}} = C_d \frac{5.9}{20.9 - \% \text{ O}_2} \quad (\text{Eq. 3})$$

Where:

C_{adj} = Calculated NO_x or PM concentration adjusted to 15 percent O_2 .

C_d = Measured concentration of NO_x or PM, uncorrected.

5.9 = 20.9 percent O_2 –15 percent O_2 , the defined O_2 correction value, percent.

$\% \text{O}_2$ = Measured O_2 concentration, dry basis, percent.

- (3) If pollutant concentrations are to be corrected to 15 percent O_2 and CO_2 concentration is measured in lieu of O_2 concentration measurement, a CO_2 correction factor is needed. Calculate the CO_2 correction factor as described in paragraphs (d)(3)(i) through (iii) of this section.

- (i) Calculate the fuel-specific F_o value for the fuel burned during the test using values obtained from Method 19, Section 5.2, and the following equation:

$$F_o = \frac{0.209 F_d}{F_c} \quad (\text{Eq. 4})$$

Where:

F_o = Fuel factor based on the ratio of O_2 volume to the ultimate CO_2 volume produced by the fuel at zero percent excess air.

0.209 = Fraction of air that is O_2 , percent/100.

F_d = Ratio of the volume of dry effluent gas to the gross calorific value of the fuel from Method 19, dsm^3/J ($\text{dscf}/10^6 \text{ Btu}$).

F_c = Ratio of the volume of CO_2 produced to the gross calorific value of the fuel from Method 19, dsm^3/J ($\text{dscf}/10^6 \text{ Btu}$).

- (ii) Calculate the CO_2 correction factor for correcting measurement data to 15 percent O_2 , as follows:

$$X_{CO_2} = \frac{5.9}{F_o} \quad (\text{Eq. 5})$$

Where:

X_{CO_2} = CO_2 correction factor, percent.

5.9 = 20.9 percent O_2 -15 percent O_2 , the defined O_2 correction value, percent.

- (iii) Calculate the NO_x and PM gas concentrations adjusted to 15 percent O_2 using CO_2 as follows:

$$C_{adj} = C_d \frac{X_{CO_2}}{\%CO_2} \quad (\text{Eq. 6})$$

Where:

C_{adj} = Calculated NO_x or PM concentration adjusted to 15 percent O_2 .

C_d = Measured concentration of NO_x or PM, uncorrected.

$\%CO_2$ = Measured CO_2 concentration, dry basis, percent.

- (e) To determine compliance with the NO_x mass per unit output emission limitation, convert the concentration of NO_x in the engine exhaust using Equation 7 of this section:

$$ER = \frac{C_d \times 1.912 \times 10^{-3} \times Q \times T}{\text{KW-hour}} \quad (\text{Eq. 7})$$

Where:

ER = Emission rate in grams per KW-hour.

C_d = Measured NO_x concentration in ppm.

1.912×10^{-3} = Conversion constant for ppm NO_x to grams per standard cubic meter at 25 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meter per hour.

T = Time of test run, in hours.

KW-hour = Brake work of the engine, in KW-hour.

- (f) To determine compliance with the PM mass per unit output emission limitation, convert the concentration of PM in the engine exhaust using Equation 8 of this section:

$$ER = \frac{C_{adj} \times Q \times T}{\text{KW-hour}} \quad (\text{Eq. 8})$$

Where:

ER = Emission rate in grams per KW-hour.

C_{adj} = Calculated PM concentration in grams per standard cubic meter.

Q = Stack gas volumetric flow rate, in standard cubic meter per hour.

T = Time of test run, in hours.

KW-hour = Energy output of the engine, in KW.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37971, June 28, 2011]

NOTIFICATION, REPORTS, AND RECORDS FOR OWNERS AND OPERATORS

§ 60.4214 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary CI internal combustion engine?

- (a) Owners and operators of non-emergency stationary CI ICE that are greater than 2,237 KW (3,000 HP), or have a displacement of greater than or equal to 10 liters per cylinder, or are pre-2007 model year engines that are greater than 130 KW (175 HP) and not certified, must meet the requirements of paragraphs (a)(1) and (2) of this section.

- (1) Submit an initial notification as required in § 60.7(a)(1). The notification must include the information in paragraphs (a)(1)(i) through (v) of this section. Beginning on February 26, 2025, submit the notification electronically according to paragraph (g) of this section.
 - (i) Name and address of the owner or operator;
 - (ii) The address of the affected source;
 - (iii) Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement;
 - (iv) Emission control equipment; and
 - (v) Fuel used.
- (2) Keep records of the information in paragraphs (a)(2)(i) through (iv) of this section.
 - (i) All notifications submitted to comply with this subpart and all documentation supporting any notification.
 - (ii) Maintenance conducted on the engine.
 - (iii) If the stationary CI internal combustion is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards.
 - (iv) If the stationary CI internal combustion is not a certified engine, documentation that the engine meets the emission standards.
- (b) If the stationary CI internal combustion engine is an emergency stationary internal combustion engine, the owner or operator is not required to submit an initial notification. Starting with the model years in table 5 to this subpart, if the emergency engine does not meet the standards applicable to non-emergency engines in the applicable model year, the owner or operator must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner must record the time of operation of the engine and the reason the engine was in operation during that time.
- (c) If the stationary CI internal combustion engine is equipped with a diesel particulate filter, the owner or operator must keep records of any corrective action taken after the backpressure monitor has notified the owner or operator that the high backpressure limit of the engine is approached.
- (d) If you own or operate an emergency stationary CI ICE with a maximum engine power more than 100 HP that operates for the purpose specified in § 60.4211(f)(3)(i), you must submit an annual report according to the requirements in paragraphs (d)(1) through (3) of this section.
 - (1) The report must contain the following information:
 - (i) Company name and address where the engine is located.
 - (ii) Date of the report and beginning and ending dates of the reporting period.
 - (iii) Engine site rating and model year.
 - (iv) Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place.
 - (v)-(vi) [Reserved]

- (vii) Hours spent for operation for the purposes specified in § 60.4211(f)(3)(i), including the date, start time, and end time for engine operation for the purposes specified in § 60.4211(f)(3)(i). The report must also identify the entity that dispatched the engine and the situation that necessitated the dispatch of the engine.
- (2) The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year.
- (3) The annual report must be submitted electronically using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (<https://cdx.epa.gov/>). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the written report must be submitted to the Administrator at the appropriate address listed in § 60.4. Beginning on February 26, 2025, submit annual report electronically according to paragraph (g) of this section.
- (e) Owners or operators of stationary CI ICE equipped with AECDs pursuant to the requirements of 40 CFR 1039.665 must report the use of AECDs as required by 40 CFR 1039.665(e).
- (f) Beginning on February 26, 2025, within 60 days after the date of completing each performance test required by this subpart, you must submit the results of the performance test required under this section following the procedures specified in paragraphs (f)(1) and (2) of this section.
 - (1) **Data collected using test methods supported by the EPA's Electronic Reporting Tool (ERT) as listed on the EPA's ERT website (<https://www.epa.gov/electronic-reporting-air-emissions/electronic-reporting-tool-ert>) at the time of the test.** Submit the results of the performance test to the EPA via the Compliance and Emissions Data Reporting Interface (CEDRI), according to paragraph (g) of this section. The data must be submitted in a file format generated using the EPA's ERT. Alternatively, you may submit an electronic file consistent with the extensible markup language (XML) schema listed on the EPA's ERT website.
 - (2) **Data collected using test methods that are not supported by the EPA's ERT as listed on the EPA's ERT website at the time of the test.** The results of the performance test must be included as an attachment in the ERT or an alternate electronic file consistent with the XML schema listed on the EPA's ERT website. Submit the ERT generated package or alternative file to the EPA via CEDRI according to paragraph (g) of this section.
- (g) If you are required to submit notifications or reports following the procedure specified in this paragraph (g), you must submit notifications or reports to the EPA via the Compliance and Emissions Data Reporting Interface (CEDRI), which can be accessed through the EPA's Central Data Exchange (CDX) (<https://cdx.epa.gov/>). The EPA will make all the information submitted through CEDRI available to the public without further notice to you. Do not use CEDRI to submit information you claim as CBI. Although we do not expect persons to assert a claim of CBI, if you wish to assert a CBI claim for some of the information in the report or notification, you must submit a complete file in the format specified in this subpart, including information claimed to be CBI, to the EPA following the procedures in paragraphs (g)(1) and (2) of this section. Clearly mark the part or all of the information that you claim to be CBI. Information not marked as CBI may be authorized for public release without prior notice. Information marked as CBI will not be disclosed except in accordance with procedures set forth in 40 CFR part 2. All CBI claims must be asserted at the time of submission. Anything submitted using CEDRI cannot later be claimed CBI. Furthermore, under CAA section 114(c), emissions data is not entitled to confidential treatment, and the

EPA is required to make emissions data available to the public. Thus, emissions data will not be protected as CBI and will be made publicly available. You must submit the same file submitted to the CBI office with the CBI omitted to the EPA via the EPA's CDX as described earlier in this paragraph (g).

- (1) The preferred method to receive CBI is for it to be transmitted electronically using email attachments, File Transfer Protocol, or other online file sharing services. Electronic submissions must be transmitted directly to the OAQPS CBI Office at the email address oaqpscbi@epa.gov, and as described in paragraph (g) of this section, should include clear CBI markings. ERT files should be flagged to the attention of the Group Leader, Measurement Policy Group; all other files should be flagged to the attention of the Stationary Compression Ignition Internal Combustion Engine Sector Lead. If assistance is needed with submitting large electronic files that exceed the file size limit for email attachments, and if you do not have your own file sharing service, please email oaqpscbi@epa.gov to request a file transfer link.
 - (2) If you cannot transmit the file electronically, you may send CBI information through the postal service to the following address: OAQPS Document Control Officer (C404-02), OAQPS, U.S. Environmental Protection Agency, 109 T.W. Alexander Drive, P.O. Box 12055, Research Triangle Park, North Carolina 27711. ERT files should be sent to the attention of the Group Leader, Measurement Policy Group, and all other files should be sent to the attention of the Stationary Compression Ignition Internal Combustion Engine Sector Lead. The mailed CBI material should be double wrapped and clearly marked. Any CBI markings should not show through the outer envelope.
- (h) If you are required to electronically submit a report through CEDRI in the EPA's CDX, you may assert a claim of EPA system outage for failure to timely comply with that reporting requirement. To assert a claim of EPA system outage, you must meet the requirements outlined in paragraphs (h)(1) through (7) of this section.
- (1) You must have been or will be precluded from accessing CEDRI and submitting a required report within the time prescribed due to an outage of either the EPA's CEDRI or CDX systems.
 - (2) The outage must have occurred within the period of time beginning five business days prior to the date that the submission is due.
 - (3) The outage may be planned or unplanned.
 - (4) You must submit notification to the Administrator in writing as soon as possible following the date you first knew, or through due diligence should have known, that the event may cause or has caused a delay in reporting.
 - (5) You must provide to the Administrator a written description identifying:
 - (i) The date(s) and time(s) when CDX or CEDRI was accessed and the system was unavailable;
 - (ii) A rationale for attributing the delay in reporting beyond the regulatory deadline to EPA system outage;
 - (iii) A description of measures taken or to be taken to minimize the delay in reporting; and
 - (iv) The date by which you propose to report, or if you have already met the reporting requirement at the time of the notification, the date you reported.
 - (6) The decision to accept the claim of EPA system outage and allow an extension to the reporting deadline is solely within the discretion of the Administrator.

- (7) In any circumstance, the report must be submitted electronically as soon as possible after the outage is resolved.
- (i) If you are required to electronically submit a report through CEDRI in the EPA's CDX, you may assert a claim of force majeure for failure to timely comply with that reporting requirement. To assert a claim of force majeure, you must meet the requirements outlined in paragraphs (i)(1) through (5) of this section.
 - (1) You may submit a claim if a force majeure event is about to occur, occurs, or has occurred or there are lingering effects from such an event within the period of time beginning five business days prior to the date the submission is due. For the purposes of this section, a force majeure event is defined as an event that will be or has been caused by circumstances beyond the control of the affected facility, its contractors, or any entity controlled by the affected facility that prevents you from complying with the requirement to submit a report electronically within the time period prescribed. Examples of such events are acts of nature (e.g., hurricanes, earthquakes, or floods), acts of war or terrorism, or equipment failure or safety hazard beyond the control of the affected facility (e.g., large scale power outage).
 - (2) You must submit notification to the Administrator in writing as soon as possible following the date you first knew, or through due diligence should have known, that the event may cause or has caused a delay in reporting.
 - (3) You must provide to the Administrator:
 - (i) A written description of the force majeure event;
 - (ii) A rationale for attributing the delay in reporting beyond the regulatory deadline to the force majeure event;
 - (iii) A description of measures taken or to be taken to minimize the delay in reporting; and
 - (iv) The date by which you propose to report, or if you have already met the reporting requirement at the time of the notification, the date you reported.
 - (4) The decision to accept the claim of force majeure and allow an extension to the reporting deadline is solely within the discretion of the Administrator.
 - (5) In any circumstance, the reporting must occur as soon as possible after the force majeure event occurs.
- (j) Any records required to be maintained by this subpart that are submitted electronically via the EPA's CEDRI may be maintained in electronic format. This ability to maintain electronic copies does not affect the requirement for facilities to make records, data, and reports available upon request to a delegated air agency or the EPA as part of an on-site compliance evaluation.

[71 FR 39172, July 11, 2006, as amended at 78 FR 6696, Jan. 30, 2013; 81 FR 44219, July 7, 2016; 87 FR 48606, Aug. 10, 2022; 89 FR 70512, Aug. 30, 2024]

SPECIAL REQUIREMENTS

§ 60.4215 What requirements must I meet for engines used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands?

- (a) Stationary CI ICE with a displacement of less than 30 liters per cylinder that are used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands are required to meet the applicable emission standards in §§ 60.4202 and 60.4205.
- (b) Stationary CI ICE that are used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands are not required to meet the fuel requirements in § 60.4207.
- (c) Stationary CI ICE with a displacement of greater than or equal to 30 liters per cylinder that are used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands are required to meet the following emission standards:
 - (1) For engines installed prior to January 1, 2012, limit the emissions of NO_x in the stationary CI internal combustion engine exhaust to the following:
 - (i) 17.0 g/KW-hr (12.7 g/HP-hr) when maximum engine speed is less than 130 rpm;
 - (ii) $45 \cdot n^{-0.2}$ g/KW-hr ($34 \cdot n^{-0.2}$ g/HP-hr) when maximum engine speed is 130 or more but less than 2,000 rpm, where n is maximum engine speed; and
 - (iii) 9.8 g/KW-hr (7.3 g/HP-hr) when maximum engine speed is 2,000 rpm or more.
 - (2) For engines installed on or after January 1, 2012, limit the emissions of NO_x in the stationary CI internal combustion engine exhaust to the following:
 - (i) 14.4 g/KW-hr (10.7 g/HP-hr) when maximum engine speed is less than 130 rpm;
 - (ii) $44 \cdot n^{-0.23}$ g/KW-hr ($33 \cdot n^{-0.23}$ g/HP-hr) when maximum engine speed is greater than or equal to 130 but less than 2,000 rpm and where n is maximum engine speed; and
 - (iii) 7.7 g/KW-hr (5.7 g/HP-hr) when maximum engine speed is greater than or equal to 2,000 rpm.
 - (3) Limit the emissions of PM in the stationary CI internal combustion engine exhaust to 0.40 g/KW-hr (0.30 g/HP-hr).

[71 FR 39172, July 11, 2006, as amended at 76 FR 37971, June 28, 2011]

§ 60.4216 What requirements must I meet for engines used in Alaska?

- (a) Prior to December 1, 2010, owners and operators of stationary CI ICE with a displacement of less than 30 liters per cylinder located in areas of Alaska not accessible by the FAHS should refer to 40 CFR part 69 to determine the diesel fuel requirements applicable to such engines.
- (b) Except as indicated in paragraph (c) of this section, manufacturers, owners and operators of stationary CI ICE with a displacement of less than 10 liters per cylinder located in remote areas of Alaska may meet the requirements of this subpart by manufacturing and installing engines meeting the Tier 2 or Tier 3 emission standards described in 40 CFR part 1042 for the same model year, displacement, and maximum engine power, as appropriate, rather than the otherwise applicable requirements of 40 CFR part 1039, as indicated in §§ 60.4201(f) and 60.4202(g).

- (c) Manufacturers, owners, and operators of stationary CI ICE that are located in remote areas of Alaska may choose to meet the applicable emission standards for emergency engines in §§ 60.4202 and 60.4205, and not those for non-emergency engines in §§ 60.4201 and 60.4204, except that for 2014 model year and later nonemergency CI ICE, the owner or operator of any such engine must have that engine certified as meeting at least the Tier 3 PM standards identified in appendix I of 40 CFR part 1039 or in 40 CFR 1042.101.
- (d) The provisions of § 60.4207 do not apply to owners and operators of pre-2014 model year stationary CI ICE subject to this subpart that are located in remote areas of Alaska.
- (e) The provisions of § 60.4208(a) do not apply to owners and operators of stationary CI ICE subject to this subpart that are located in areas of Alaska not accessible by the FAHS until after December 31, 2009.
- (f) The provisions of this section and § 60.4207 do not prevent owners and operators of stationary CI ICE subject to this subpart that are located in remote areas of Alaska from using fuels mixed with used lubricating oil, in volumes of up to 1.75 percent of the total fuel. The sulfur content of the used lubricating oil must be less than 200 parts per million. The used lubricating oil must meet the on-specification levels and properties for used oil in 40 CFR 279.11.

[76 FR 37971, June 28, 2011, as amended at 81 FR 44219, July 7, 2016; 86 FR 34359, June 29, 2021]

§ 60.4217 What emission standards must I meet if I am an owner or operator of a stationary internal combustion engine using special fuels?

Owners and operators of stationary CI ICE that do not use diesel fuel may petition the Administrator for approval of alternative emission standards, if they can demonstrate that they use a fuel that is not the fuel on which the manufacturer of the engine certified the engine and that the engine cannot meet the applicable standards required in § 60.4204 or § 60.4205 using such fuels and that use of such fuel is appropriate and reasonably necessary, considering cost, energy, technical feasibility, human health and environmental, and other factors, for the operation of the engine.

[76 FR 37972, June 28, 2011]

GENERAL PROVISIONS

§ 60.4218 What General Provisions and confidential information provisions apply to me?

- (a) Table 8 to this subpart shows which parts of the General Provisions in §§ 60.1 through 60.19 apply to you.
- (b) The provisions of 40 CFR 1068.10 and 1068.11 apply for engine manufacturers. For others, the general confidential business information (CBI) provisions apply as described in 40 CFR part 2.

[88 FR 4471, Jan. 24, 2023]

DEFINITIONS

§ 60.4219 What definitions apply to this subpart?

As used in this subpart, all terms not defined herein shall have the meaning given them in the CAA and in subpart A of this part.

Alaska Railbelt Grid means the service areas of the six regulated public utilities that extend from Fairbanks to Anchorage and the Kenai Peninsula. These utilities are Golden Valley Electric Association; Chugach Electric Association; Matanuska Electric Association; Homer Electric Association; Anchorage Municipal Light & Power; and the City of Seward Electric System.

Certified emissions life means the period during which the engine is designed to properly function in terms of reliability and fuel consumption, without being remanufactured, specified as a number of hours of operation or calendar years, whichever comes first. The values for certified emissions life for stationary CI ICE with a displacement of less than 10 liters per cylinder are given in 40 CFR 1039.101(g). The values for certified emissions life for stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder are given in 40 CFR 1042.101(e).

Combustion turbine means all equipment, including but not limited to the turbine, the fuel, air, lubrication and exhaust gas systems, control systems (except emissions control equipment), and any ancillary components and sub-components comprising any simple cycle combustion turbine, any regenerative/recuperative cycle combustion turbine, the combustion turbine portion of any cogeneration cycle combustion system, or the combustion turbine portion of any combined cycle steam/electric generating system.

Compression ignition means relating to a type of stationary internal combustion engine that is not a spark ignition engine.

Date of manufacture means one of the following things:

- (1) For freshly manufactured engines and modified engines, date of manufacture means the date the engine is originally produced.
- (2) For reconstructed engines, date of manufacture means the date the engine was originally produced, except as specified in paragraph (3) of this definition.
- (3) Reconstructed engines are assigned a new date of manufacture if the fixed capital cost of the new and refurbished components exceeds 75 percent of the fixed capital cost of a comparable entirely new facility. An engine that is produced from a previously used engine block does not retain the date of manufacture of the engine in which the engine block was previously used if the engine is produced using all new components except for the engine block. In these cases, the date of manufacture is the date of reconstruction or the date the new engine is produced.

Diesel fuel means any liquid obtained from the distillation of petroleum with a boiling point of approximately 150 to 360 degrees Celsius. One commonly used form is number 2 distillate oil.

Diesel particulate filter means an emission control technology that reduces PM emissions by trapping the particles in a flow filter substrate and periodically removes the collected particles by either physical action or by oxidizing (burning off) the particles in a process called regeneration.

Emergency stationary internal combustion engine means any stationary reciprocating internal combustion engine that meets all of the criteria in paragraphs (1) through (3) of this definition. All emergency stationary ICE must comply with the requirements specified in § 60.4211(f) in order to be considered emergency stationary ICE. If the engine does not comply with the requirements specified in § 60.4211(f), then it is not considered to be an emergency stationary ICE under this subpart.

- (1) The stationary ICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary ICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary ICE used to pump water in the case of fire or flood, etc.
- (2) The stationary ICE is operated under limited circumstances for situations not included in paragraph (1) of this definition, as specified in § 60.4211(f).
- (3) The stationary ICE operates as part of a financial arrangement with another entity in situations not included in paragraph (1) of this definition only as allowed in § 60.4211(f)(3)(i).

Engine manufacturer means the manufacturer of the engine. See the definition of "manufacturer" in this section.

Fire pump engine means an emergency stationary internal combustion engine certified to NFPA requirements that is used to provide power to pump water for fire suppression or protection.

Freshly manufactured engine means an engine that has not been placed into service. An engine becomes freshly manufactured when it is originally produced.

Installed means the engine is placed and secured at the location where it is intended to be operated.

Manufacturer has the meaning given in section 216(1) of the Act. In general, this term includes any person who manufactures a stationary engine for sale in the United States or otherwise introduces a new stationary engine into commerce in the United States. This includes importers who import stationary engines for sale or resale.

Maximum engine power means maximum engine power as defined in 40 CFR 1039.801.

Model year means the calendar year in which an engine is manufactured (see "date of manufacture"), except as follows:

- (1) Model year means the annual new model production period of the engine manufacturer in which an engine is manufactured (see "date of manufacture"), if the annual new model production period is different than the calendar year and includes January 1 of the calendar year for which the model year is named. It may not begin before January 2 of the previous calendar year and it must end by December 31 of the named calendar year.
- (2) For an engine that is converted to a stationary engine after being placed into service as a nonroad or other non-stationary engine, model year means the calendar year or new model production period in which the engine was manufactured (see "date of manufacture").

Other internal combustion engine means any internal combustion engine, except combustion turbines, which is not a reciprocating internal combustion engine or rotary internal combustion engine.

Reciprocating internal combustion engine means any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work.

Remote areas of Alaska means areas of Alaska that meet either paragraph (1) or (2) of this definition.

- (1) Areas of Alaska that are not accessible by the Federal Aid Highway System (FAHS).
- (2) Areas of Alaska that meet all of the following criteria:

- (i) The only connection to the FAHS is through the Alaska Marine Highway System, or the stationary CI ICE operation is within an isolated grid in Alaska that is not connected to the statewide electrical grid referred to as the Alaska Railbelt Grid.
- (ii) At least 10 percent of the power generated by the stationary CI ICE on an annual basis is used for residential purposes.
- (iii) The generating capacity of the source is less than 12 megawatts, or the stationary CI ICE is used exclusively for backup power for renewable energy.

Rotary internal combustion engine means any internal combustion engine which uses rotary motion to convert heat energy into mechanical work.

Spark ignition means relating to a gasoline, natural gas, or liquefied petroleum gas fueled engine or any other type of engine with a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation. Dual-fuel engines in which a liquid fuel (typically diesel fuel) is used for CI and gaseous fuel (typically natural gas) is used as the primary fuel at an annual average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis are spark ignition engines.

Stationary internal combustion engine means any internal combustion engine, except combustion turbines, that converts heat energy into mechanical work and is not mobile. Stationary ICE differ from mobile ICE in that a stationary internal combustion engine is not a nonroad engine as defined at 40 CFR 1068.30 (excluding paragraph (2)(ii) of that definition), and is not used to propel a motor vehicle, aircraft, or a vehicle used solely for competition. Stationary ICE include reciprocating ICE, rotary ICE, and other ICE, except combustion turbines.

Subpart means 40 CFR part 60, subpart IIII.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37972, June 28, 2011; 78 FR 6696, Jan. 30, 2013; 81 FR 44219, July 7, 2016; 86 FR 34360, June 29, 2021; 87 FR 48606, Aug. 10, 2022]

Table 1 to Subpart IIII of Part 60—Emission Standards for Stationary Pre-2007 Model Year Engines With a Displacement of <10 Liters per Cylinder and 2007-2010 Model Year Engines >2,237 KW (3,000 HP) and With a Displacement of <10 Liters per Cylinder

[AS STATED IN §§ 60.4201(B), 60.4202(B), 60.4204(A), AND 60.4205(A), YOU MUST COMPLY WITH THE FOLLOWING EMISSION STANDARDS]

Maximum engine power	Emission standards for stationary pre-2007 model year engines with a displacement of <10 liters per cylinder and 2007-2010 model year engines >2,237 KW (3,000 HP) and with a displacement of <10 liters per cylinder in g/KW-hr (g/HP-hr)				
	NMHC + NO _x	HC	NO _x	CO	PM
KW<8	10.5 (7.8)			8.0 (6.0)	1.0 (0.75)

Maximum engine power	Emission standards for stationary pre-2007 model year engines with a displacement of <10 liters per cylinder and 2007-2010 model year engines >2,237 KW (3,000 HP) and with a displacement of <10 liters per cylinder in g/KW-hr (g/HP-hr)				
	NMHC + NO _x	HC	NO _x	CO	PM
(HP<11)					
8≤KW<19 (11≤HP<25)	9.5 (7.1)			6.6 (4.9)	0.80 (0.60)
19≤KW<37 (25≤HP<50)	9.5 (7.1)			5.5 (4.1)	0.80 (0.60)
37≤KW<56 (50≤HP<75)			9.2 (6.9)		
56≤KW<75 (75≤HP<100)			9.2 (6.9)		
75≤KW<130 (100≤HP<175)			9.2 (6.9)		
130≤KW<225 (175≤HP<300)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
225≤KW<450 (300≤HP<600)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
450≤KW≤560 (600≤HP≤750)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
KW>560 (HP>750)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)

Table 2 to Subpart IIII of Part 60—Emission Standards for 2008 Model Year and Later Emergency Stationary CI ICE <37 KW (50 HP) With a Displacement of <10 Liters per Cylinder

[AS STATED IN § 60.4202(A)(1), YOU MUST COMPLY WITH THE FOLLOWING EMISSION STANDARDS]

Engine power	Emission standards for 2008 model year and later emergency stationary CI ICE <37 KW (50 HP) with a displacement of <10 liters per cylinder in g/KW-hr (g/HP-hr)			
	Model year(s)	NO _x + NMHC	CO	PM
KW<8 (HP<11)	2008 +	7.5 (5.6)	8.0 (6.0)	0.40 (0.30)
8≤KW<19 (11≤HP<25)	2008 +	7.5 (5.6)	6.6 (4.9)	0.40 (0.30)

Engine power	Emission standards for 2008 model year and later emergency stationary CI ICE <37 KW (50 HP) with a displacement of <10 liters per cylinder in g/KW-hr (g/HP-hr)			
	Model year(s)	NO _x + NMHC	CO	PM
19≤KW<37 (25≤HP<50)	2008 +	7.5 (5.6)	5.5 (4.1)	0.30 (0.22)

Table 3 to Subpart IIII of Part 60—Certification Requirements for Stationary Fire Pump Engines

AS STATED IN § 60.4202(d), YOU MUST CERTIFY NEW STATIONARY FIRE PUMP ENGINES BEGINNING WITH THE FOLLOWING MODEL YEARS:

Engine power	Starting model year engine manufacturers must certify new stationary fire pump engines according to § 60.4202(d) ¹
KW<75 (HP<100)	2011
75≤KW<130 (100≤HP<175)	2010
130≤KW≤560 (175≤HP≤750)	2009
KW>560 (HP>750)	2008

¹ Manufacturers of fire pump stationary CI ICE with a maximum engine power greater than or equal to 37 kW (50 HP) and less than 450 KW (600 HP) and a rated speed of greater than 2,650 revolutions per minute (rpm) are not required to certify such engines until three model years following the model year indicated in this Table 3 for engines in the applicable engine power category.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37972, June 28, 2011]

Table 4 to Subpart IIII of Part 60—Emission Standards for Stationary Fire Pump Engines

[AS STATED IN §§ 60.4202(D) AND 60.4205(C), YOU MUST COMPLY WITH THE FOLLOWING EMISSION STANDARDS FOR STATIONARY FIRE PUMP ENGINES]

Maximum engine power	Model year(s)	Emission standards for stationary fire pump engines in g/KW-hr (g/HP-hr)		
		NMHC + NO _x	CO	PM
KW<8 (HP<11)	2010 and earlier	10.5 (7.8)	8.0 (6.0)	1.0 (0.75)
KW<8 (HP<11)	2011 +	7.5 (5.6)	8.0 (6.0)	0.40 (0.30)
8≤KW<19 (11≤HP<25)	2010 and earlier	9.5 (7.1)	6.6 (4.9)	0.80 (0.60)
8≤KW<19 (11≤HP<25)	2011 +	7.5 (5.6)	6.6 (4.9)	0.40 (0.30)
19≤KW<37 (25≤HP<50)	2010 and earlier	9.5 (7.1)	5.5 (4.1)	0.80 (0.60)
19≤KW<37 (25≤HP<50)	2011 +	7.5 (5.6)	5.5 (4.1)	0.30 (0.22)
37≤KW<56 (50≤HP<75)	2010 and earlier	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
37≤KW<56 (50≤HP<75)	2011 + ¹	4.7 (3.5)	5.0 (3.7)	0.40 (0.30)
56≤KW<75 (75≤HP<100)	2010 and earlier	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
56≤KW<75 (75≤HP<100)	2011 + ¹	4.7 (3.5)	5.0 (3.7)	0.40 (0.30)
75≤KW<130 (100≤HP<175)	2009 and earlier	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
75≤KW<130 (100≤HP<175)	2010 + ²	4.0 (3.0)	5.0 (3.7)	0.30 (0.22)
130≤KW<225 (175≤HP<300)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
130≤KW<225 (175≤HP<300)	2009 + ³	4.0 (3.0)	3.5 (2.6)	0.20 (0.15)
225≤KW<450	2008 and	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)

¹ For model years 2011-2013, manufacturers, owners and operators of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 revolutions per minute (rpm) may comply with the emission limitations for 2010 model year engines.

² For model years 2010-2012, manufacturers, owners and operators of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 rpm may comply with the emission limitations for 2009 model year engines.

³ In model years 2009-2011, manufacturers of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 rpm may comply with the emission limitations for 2008 model year engines.

Maximum engine power	Model year(s)	Emission standards for stationary fire pump engines in g/KW-hr (g/HP-hr)		
		NMHC + NO _x	CO	PM
(300≤HP<600) 225≤KW<450 (300≤HP<600) 450≤KW≤560 (600≤HP≤750) 450≤KW≤560 (600≤HP≤750) KW>560 (HP>750) KW>560 (HP>750)	earlier 2009 + ³ 2008 and earlier 2009 + 2007 and earlier 2008 +	 4.0 (3.0) 10.5 (7.8) 4.0 (3.0) 10.5 (7.8) 6.4 (4.8)	 3.5 (2.6) 3.5 (2.6) 3.5 (2.6) 3.5 (2.6) 3.5 (2.6)	 0.20 (0.15) 0.54 (0.40) 0.20 (0.15) 0.54 (0.40) 0.20 (0.15)

¹ For model years 2011-2013, manufacturers, owners and operators of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 revolutions per minute (rpm) may comply with the emission limitations for 2010 model year engines.

² For model years 2010-2012, manufacturers, owners and operators of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 rpm may comply with the emission limitations for 2009 model year engines.

³ In model years 2009-2011, manufacturers of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 rpm may comply with the emission limitations for 2008 model year engines.

[89 FR 70513, Aug. 30, 2024]

Table 5 to Subpart IIII of Part 60—Labeling and Recordkeeping Requirements for New Stationary Emergency Engines

[YOU MUST COMPLY WITH THE LABELING REQUIREMENTS IN § 60.4210(F) AND THE RECORDKEEPING REQUIREMENTS IN § 60.4214(B) FOR NEW EMERGENCY STATIONARY CI ICE BEGINNING IN THE FOLLOWING MODEL YEARS:]

Engine power	Starting model year
19≤KW<56 (25≤HP<75)	2013
56≤KW<130 (75≤HP<175)	2012
KW≥130 (HP≥175)	2011

Table 6 to Subpart IIII of Part 60—Optional 3-Mode Test Cycle for Stationary Fire Pump Engines

[AS STATED IN § 60.4210(G), MANUFACTURERS OF FIRE PUMP ENGINES MAY USE THE FOLLOWING TEST CYCLE FOR TESTING FIRE PUMP ENGINES:]

Mode No.	Engine speed ¹	Torque (percent) ²	Weighting factors
1	Rated	100	0.30
2	Rated	75	0.50
3	Rated	50	0.20

¹ Engine speed: ± 2 percent of point.

² Torque: NFPA certified nameplate HP for 100 percent point. All points should be ± 2 percent of engine percent load value.

Table 7 to Subpart IIII of Part 60—Requirements for Performance Tests for Stationary CI ICE With a Displacement of ≥ 30 Liters per Cylinder

As stated in § 60.4213, you must comply with the following requirements for performance tests for stationary CI ICE with a displacement of ≥ 30 liters per cylinder:

Each	Complying with the requirement to	You must	Using	According to the following requirements
1. Stationary CI internal combustion engine with a displacement of ≥ 30 liters per cylinder	a. Reduce NO _x emissions by 90 percent or more;	i. Select the sampling port location and number/location of traverse points at the inlet and outlet of the control device;		(a) For NO _x , O ₂ , and moisture measurement, ducts ≤ 6 inches in diameter may be sampled at a single point located at the duct centroid and ducts > 6 and ≤ 12 inches in diameter may be sampled at 3 traverse points located at 16.7, 50.0, and 83.3% of the measurement line ('3-point long line'). If the duct is > 12 inches in diameter and the sampling port location meets the two and half-diameter criterion of Section 11.1.1 of Method 1 of 40 CFR part 60, appendix A-1, the duct may be sampled at '3-point long line'; otherwise, conduct the stratification

Each	Complying with the requirement to	You must	Using	According to the following requirements
		ii. Measure O₂ at the inlet and outlet of the control device; iii. If necessary, measure moisture content at the inlet and outlet of the control device; and iv. Measure NO_x at the inlet and outlet of the control device.	(1) Method 3, 3A, or 3B of 40 CFR part 60, appendix A-2 (2) Method 4 of 40 CFR part 60, appendix A-3, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03 (incorporated by reference, see § 60.17) (3) Method 7E of 40 CFR part 60, appendix A-4, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03 (incorporated by reference, see § 60.17)	testing and select sampling points according to Section 8.1.2 of Method 7E of 40 CFR part 60, appendix A-4. (b) Measurements to determine O₂ concentration must be made at the same time as the measurements for NO_x concentration. (c) Measurements to determine moisture content must be made at the same time as the measurements for NO_x concentration. (d) NO_x concentration must be at 15 percent O₂, dry basis. Results of this test consist of the average of the three 1-hour or longer runs. (a) For NO_x, O₂, and moisture measurement, ducts ≤6 inches in diameter may be sampled at a single point located at the duct centroid and ducts >6 and ≤12 inches in diameter may be sampled at 3
	b. Limit the concentration of NO _x in the stationary CI internal combustion	i. Select the sampling port location and number/ location of traverse		

Each	Complying with the requirement to	You must	Using	According to the following requirements
	engine exhaust.	points at the exhaust of the stationary internal combustion engine; ii. Determine the O₂ concentration of the stationary internal combustion engine exhaust at the sampling port location; iii. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and iv. Measure NO_x at the exhaust of	(1) Method 3, 3A, or 3B of 40 CFR part 60, appendix A-2 (2) Method 4 of 40 CFR part 60, appendix A-3, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03 (incorporated by reference, see § 60.17) (3) Method 7E of 40 CFR part 60,	traverse points located at 16.7, 50.0, and 83.3% of the measurement line ('3-point long line'). If the duct is >12 inches in diameter <i>and</i> the sampling port location meets the two and half-diameter criterion of Section 11.1.1 of Method 1 of 40 CFR part 60, appendix A-1, the duct may be sampled at '3-point long line'; otherwise, conduct the stratification testing and select sampling points according to Section 8.1.2 of Method 7E of 40 CFR part 60, appendix A-4. (b) Measurements to determine O₂ concentration must be made at the same time as the measurement for NO_x concentration. (c) Measurements to determine moisture content must be made at the same time as the measurement for NO_x concentration. (d) NO_x concentration must be at 15 percent O₂, dry basis. Results of this test consist of the average of the

Each	Complying with the requirement to	You must	Using	According to the following requirements
		the stationary internal combustion engine; if using a control device, the sampling site must be located at the outlet of the control device.	appendix A-4, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03 (incorporated by reference, see § 60.17)	three 1-hour or longer runs.
	c. Reduce PM emissions by 60 percent or more	i. Select the sampling port location and the number of traverse points; ii. Measure O ₂ at the inlet and outlet of the control device; iii. If necessary, measure moisture content at the inlet and outlet of the control device; and iv. Measure PM at the inlet and outlet of the control device.	(1) Method 1 or 1A of 40 CFR part 60, appendix A-1 (2) Method 3, 3A, or 3B of 40 CFR part 60, appendix A-2 (3) Method 4 of 40 CFR part 60, appendix A-3 (4) Method 5 of 40 CFR part 60, appendix A-3	(a) Sampling sites must be located at the inlet and outlet of the control device. (b) Measurements to determine O ₂ concentration must be made at the same time as the measurements for PM concentration. (c) Measurements to determine and moisture content must be made at the same time as the measurements for PM concentration. (d) PM concentration must be at 15 percent O ₂ , dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
	d. Limit the	i. Select the	(1) Method 1	(a) If using a control device, the

Each	Complying with the requirement to	You must	Using	According to the following requirements
	concentration of PM in the stationary CI internal combustion engine exhaust	sampling port location and the number of traverse points; ii. Determine the O₂ concentration of the stationary internal combustion engine exhaust at the sampling port location; iii. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and iv. Measure PM at the exhaust of the stationary internal combustion engine.	or 1A of 40 CFR part 60, appendix A-1 (2) Method 3, 3A, or 3B of 40 CFR part 60, appendix A-2 (3) Method 4 of 40 CFR part 60, appendix A-3 (4) Method 5 of 40 CFR part 60, appendix A-3	sampling site must be located at the outlet of the control device. (b) Measurements to determine O₂ concentration must be made at the same time as the measurements for PM concentration. (c) Measurements to determine moisture content must be made at the same time as the measurements for PM concentration. (d) PM concentration must be at 15 percent O₂, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.

[79 FR 11251, Feb. 27, 2014]

Table 8 to Subpart IIII of Part 60—Applicability of General Provisions to Subpart IIII

[AS STATED IN § 60.4218, YOU MUST COMPLY WITH THE FOLLOWING APPLICABLE GENERAL PROVISIONS:]

General Provisions citation	Subject of citation	Applies to subpart	Explanation
§ 60.1	General applicability of the General Provisions	Yes	Additional terms defined in § 60.4219.
§ 60.2	Definitions	Yes	
§ 60.3	Units and abbreviations	Yes	
§ 60.4	Address	Yes	
§ 60.5	Determination of construction or modification	Yes	
§ 60.6	Review of plans	Yes	Except that § 60.7 only applies as specified in § 60.4214(a).
§ 60.7	Notification and Recordkeeping	Yes	
§ 60.8	Performance tests	Yes	Except that § 60.8 only applies to stationary CI ICE with a displacement of (≥30 liters per cylinder and engines that are not certified.
§ 60.9	Availability of information	Yes	Requirements are specified in subpart IIII.
§ 60.10	State Authority	Yes	
§ 60.11	Compliance with standards and maintenance requirements	No	
§ 60.12	Circumvention	Yes	Except that § 60.13 only applies to stationary CI ICE with a displacement of (≥30 liters per cylinder.
§ 60.13	Monitoring requirements	Yes	
§ 60.14	Modification	Yes	
§ 60.15	Reconstruction	Yes	
§ 60.16	Priority list	Yes	
§ 60.17	Incorporations by reference	Yes	Requirements are specified in subpart IIII.
§ 60.18	General control device requirements	No	
§ 60.19	General notification and reporting	Yes	

General Provisions citation	Subject of citation	Applies to subpart	Explanation
	requirements		

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Title 40 —Protection of Environment

Chapter I —Environmental Protection Agency

Subchapter C —Air Programs

Part 60 —Standards of Performance for New Stationary Sources

Authority: 42 U.S.C. 7401 *et seq.*

Source: 36 FR 24877, Dec. 23, 1971, unless otherwise noted.

Subpart JJJJ Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

What This Subpart Covers

§ 60.4230 Am I subject to this subpart?

Emission Standards for Manufacturers

§ 60.4231 What emission standards must I meet if I am a manufacturer of stationary SI internal combustion engines or equipment containing such engines?

§ 60.4232 How long must my engines meet the emission standards if I am a manufacturer of stationary SI internal combustion engines?

Emission Standards for Owners and Operators

§ 60.4233 What emission standards must I meet if I am an owner or operator of a stationary SI internal combustion engine?

§ 60.4234 How long must I meet the emission standards if I am an owner or operator of a stationary SI internal combustion engine?

Other Requirements for Owners and Operators

§ 60.4235 What fuel requirements must I meet if I am an owner or operator of a stationary SI gasoline fired internal combustion engine subject to this subpart?

§ 60.4236 What is the deadline for importing or installing stationary SI ICE produced in previous model years?

§ 60.4237 What are the monitoring requirements if I am an owner or operator of an emergency stationary SI internal combustion engine?

Compliance Requirements for Manufacturers

§ 60.4238 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines ≤19 KW (25 HP) or a manufacturer of equipment containing such engines?

§ 60.4239 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines >19 KW (25 HP) that use gasoline or a manufacturer of equipment containing such engines?

§ 60.4240 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines >19 KW (25 HP) that are rich burn engines that use LPG or a manufacturer of equipment containing such engines?

§ 60.4241 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines participating in the voluntary certification program or a manufacturer of equipment containing such engines?

§ 60.4242 What other requirements must I meet if I am a manufacturer of stationary SI internal combustion engines or equipment containing stationary SI internal combustion engines or a manufacturer of equipment containing such engines?

Compliance Requirements for Owners and Operators

§ 60.4243 What are my compliance requirements if I am an owner or operator of a stationary SI internal combustion engine?

Testing Requirements for Owners and Operators

§ 60.4244 What test methods and other procedures must I use if I am an owner or operator of a stationary SI internal combustion engine?

Notification, Reports, and Records for Owners and Operators

§ 60.4245 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary SI internal combustion engine?

General Provisions

§ 60.4246 What General Provisions and confidential information provisions apply to me?

Mobile Source Provisions

§ 60.4247 What parts of the mobile source provisions apply to me if I am a manufacturer of stationary SI internal combustion engines or a manufacturer of equipment containing such engines?

Definitions

§ 60.4248 What definitions apply to this subpart?

Table 1 to Subpart JJJJ of Part 60

NO_x, CO, and VOC Emission Standards for Stationary Non-Emergency SI Engines ≥100 HP (Except Gasoline and Rich Burn LPG), Stationary SI Landfill/Digester Gas Engines, and Stationary Emergency Engines >25 HP

Table 2 to Subpart JJJJ of Part 60

Requirements for Performance Tests

Table 3 to Subpart JJJJ of Part 60

Applicability of General Provisions to Subpart JJJJ

Table 4 to Subpart JJJJ of Part 60

Applicability of Mobile Source Provisions for Manufacturers Participating in the Voluntary Certification Program and Certifying Stationary SI ICE to Emission Standards in Table 1 of Subpart JJJJ

Subpart JJJJ—Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

Source: 73 FR 3591, Jan. 18, 2008, unless otherwise noted.

WHAT THIS SUBPART COVERS

§ 60.4230 Am I subject to this subpart?

- (a) The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary spark ignition (SI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (6) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator.
 - (1) Manufacturers of stationary SI ICE with a maximum engine power less than or equal to 19 kilowatt (KW) (25 horsepower (HP)) that are manufactured on or after July 1, 2008.
 - (2) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are gasoline fueled or that are rich burn engines fueled by liquefied petroleum gas (LPG), where the date of manufacture is:
 - (i) On or after July 1, 2008; or
 - (ii) On or after January 1, 2009, for emergency engines.
 - (3) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are not gasoline fueled and are not rich burn engines fueled by LPG, where the manufacturer participates in the voluntary manufacturer certification program described in this subpart and where the date of manufacture is:
 - (i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP);
 - (ii) On or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP;
 - (iii) On or after July 1, 2008, for engines with a maximum engine power less than 500 HP; or
 - (iv) On or after January 1, 2009, for emergency engines.
 - (4) Owners and operators of stationary SI ICE that commence construction after June 12, 2006, where the stationary SI ICE are manufactured:
 - (i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP);
 - (ii) on or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP;
 - (iii) on or after July 1, 2008, for engines with a maximum engine power less than 500 HP; or

- (iv) on or after January 1, 2009, for emergency engines with a maximum engine power greater than 19 KW (25 HP).
- (5) Owners and operators of stationary SI ICE that are modified or reconstructed after June 12, 2006, and any person that modifies or reconstructs any stationary SI ICE after June 12, 2006.
- (6) The provisions of § 60.4236 of this subpart are applicable to all owners and operators of stationary SI ICE that commence construction after June 12, 2006.
- (b) The provisions of this subpart are not applicable to stationary SI ICE being tested at an engine test cell/stand.
- (c) If you are an owner or operator of an area source subject to this subpart, you are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart as applicable.
- (d) For the purposes of this subpart, stationary SI ICE using alcohol-based fuels are considered gasoline engines.
- (e) Stationary SI ICE may be eligible for exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C (or the exemptions described in 40 CFR parts 1048 and 1054, for engines that would need to be certified to standards in those parts), except that owners and operators, as well as manufacturers, may be eligible to request an exemption for national security.
- (f) Owners and operators of facilities with internal combustion engines that are acting as temporary replacement units and that are located at a stationary source for less than 1 year and that have been properly certified as meeting the standards that would be applicable to such engine under the appropriate nonroad engine provisions, are not required to meet any other provisions under this subpart with regard to such engines.

[73 FR 3591, Jan. 18, 2008, as amended at 76 FR 37972, June 28, 2011; 86 FR 34360, June 29, 2021]

EMISSION STANDARDS FOR MANUFACTURERS

§ 60.4231 What emission standards must I meet if I am a manufacturer of stationary SI internal combustion engines or equipment containing such engines?

- (a) Stationary SI internal combustion engine manufacturers must certify their stationary SI ICE with a maximum engine power less than or equal to 19 KW (25 HP) manufactured on or after July 1, 2008 to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 1054, as follows:

If engine displacement is . . .	and manufacturing dates are . . .	the engine must meet the following non-handheld emission standards identified in 40 CFR part 1054 and related requirements:
(1) Below 225	July 1, 2008 to	Phase 2.

If engine displacement is . . .	and manufacturing dates are . . .	the engine must meet the following non-handheld emission standards identified in 40 CFR part 1054 and related requirements:
cc	December 31, 2011	
(2) Below 225 cc	January 1, 2012 or later	Phase 3.
(3) At or above 225 cc	July 1, 2008 to December 31, 2010	Phase 2.
(4) At or above 225 cc	January 1, 2011 or later	Phase 3.

- (b) Stationary SI internal combustion engine manufacturers must certify their stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) (except emergency stationary ICE with a maximum engine power greater than 25 HP and less than 130 HP) that use gasoline and that are manufactured on or after the applicable date in § 60.4230(a)(2), or manufactured on or after the applicable date in § 60.4230(a)(4) for emergency stationary ICE with a maximum engine power greater than or equal to 130 HP, to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 1048. Stationary SI internal combustion engine manufacturers must certify their emergency stationary SI ICE with a maximum engine power greater than 25 HP and less than 130 HP that use gasoline and that are manufactured on or after the applicable date in § 60.4230(a)(4) to the Phase 1 emission standards in 40 CFR part 1054, appendix I, applicable to class II engines, and other requirements for new nonroad SI engines in 40 CFR part 1054. Stationary SI internal combustion engine manufacturers may certify their stationary SI ICE with a maximum engine power less than or equal to 30 KW (40 HP) with a total displacement less than or equal to 1,000 cubic centimeters (cc) that use gasoline to the certification emission standards and other requirements as appropriate for new nonroad SI engines in 40 CFR part 1054.
- (c) Stationary SI internal combustion engine manufacturers must certify their stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) (except emergency stationary ICE with a maximum engine power greater than 25 HP and less than 130 HP) that are rich burn engines that use LPG and that are manufactured on or after the applicable date in § 60.4230(a)(2), or manufactured on or after the applicable date in § 60.4230(a)(4) for emergency stationary ICE with a maximum engine power greater than or equal to 130 HP, to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 1048. Stationary SI internal combustion engine manufacturers must certify their emergency stationary SI ICE greater than 25 HP and less than 130 HP that are rich burn engines that use LPG and that are manufactured on or after the applicable date in § 60.4230(a)(4) to the Phase 1 emission standards in 40 CFR part 1054, appendix I, applicable to class II engines, and other requirements for new nonroad SI engines in 40 CFR part 1054. Stationary SI internal combustion engine manufacturers may certify their stationary SI ICE with a maximum engine power less than or equal to 30 KW (40 HP) with a total displacement less than or equal to 1,000 cc that are rich burn engines that use LPG to the certification emission standards and other requirements as appropriate for new nonroad SI engines in 40 CFR part 1054.

- (d) Stationary SI internal combustion engine manufacturers who choose to certify their stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) and less than 75 KW (100 HP) (except gasoline and rich burn engines that use LPG and emergency stationary ICE with a maximum engine power greater than 25 HP and less than 130 HP) under the voluntary manufacturer certification program described in this subpart must certify those engines to the certification emission standards for new nonroad SI engines in 40 CFR part 1048. Stationary SI internal combustion engine manufacturers who choose to certify their emergency stationary SI ICE greater than 25 HP and less than 130 HP (except gasoline and rich burn engines that use LPG), must certify those engines to the Phase 1 emission standards in 40 CFR part 1054, appendix I, applicable to class II engines, for new nonroad SI engines in 40 CFR part 1054. Stationary SI internal combustion engine manufacturers may certify their stationary SI ICE with a maximum engine power less than or equal to 30 KW (40 HP) with a total displacement less than or equal to 1,000 cc (except gasoline and rich burn engines that use LPG) to the certification emission standards and other requirements as appropriate for new nonroad SI engines in 40 CFR part 1054. For stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) and less than 75 KW (100 HP) (except gasoline and rich burn engines that use LPG and emergency stationary ICE with a maximum engine power greater than 25 HP and less than 130 HP) manufactured prior to January 1, 2011, manufacturers may choose to certify these engines to the standards in Table 1 to this subpart applicable to engines with a maximum engine power greater than or equal to 100 HP and less than 500 HP.
- (e) Stationary SI internal combustion engine manufacturers who choose to certify their stationary SI ICE with a maximum engine power greater than or equal to 75 KW (100 HP) (except gasoline and rich burn engines that use LPG) under the voluntary manufacturer certification program described in this subpart must certify those engines to the emission standards in Table 1 to this subpart. Stationary SI internal combustion engine manufacturers may certify their stationary SI ICE with a maximum engine power greater than or equal to 75 KW (100 HP) that are lean burn engines that use LPG to the certification emission standards for new nonroad SI engines in 40 CFR part 1048. For stationary SI ICE with a maximum engine power greater than or equal to 100 HP (75 KW) and less than 500 HP (373 KW) manufactured prior to January 1, 2011, and for stationary SI ICE with a maximum engine power greater than or equal to 500 HP (373 KW) manufactured prior to July 1, 2010, manufacturers may choose to certify these engines to the certification emission standards for new nonroad SI engines in 40 CFR part 1048 applicable to engines that are not severe duty engines.
- (f) Manufacturers of equipment containing stationary SI internal combustion engines meeting the provisions of 40 CFR part 1054 must meet the provisions of 40 CFR part 1060, to the extent they apply to equipment manufacturers.
- (g) Notwithstanding the requirements in paragraphs (a) through (c) of this section, stationary SI internal combustion engine manufacturers are not required to certify reconstructed engines; however manufacturers may elect to do so. The reconstructed engine must be certified to the emission standards specified in paragraphs (a) through (e) of this section that are applicable to the model year, maximum engine power and displacement of the reconstructed stationary SI ICE.

[73 FR 3591, Jan. 18, 2008, as amended at 73 FR 59175, Oct. 8, 2008; 76 FR 37973, June 28, 2011; 78 FR 6697, Jan. 30, 2013; 86 FR 34360, June 29, 2021]

§ 60.4232 How long must my engines meet the emission standards if I am a manufacturer of stationary SI internal combustion engines?

Engines manufactured by stationary SI internal combustion engine manufacturers must meet the emission standards as required in § 60.4231 during the certified emissions life of the engines.

EMISSION STANDARDS FOR OWNERS AND OPERATORS

§ 60.4233 What emission standards must I meet if I am an owner or operator of a stationary SI internal combustion engine?

- (a) Owners and operators of stationary SI ICE with a maximum engine power less than or equal to 19 KW (25 HP) manufactured on or after July 1, 2008, must comply with the emission standards in § 60.4231(a) for their stationary SI ICE.
- (b) Owners and operators of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) manufactured on or after the applicable date in § 60.4230(a)(4) that use gasoline must comply with the emission standards in § 60.4231(b) for their stationary SI ICE.
- (c) Owners and operators of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) manufactured on or after the applicable date in § 60.4230(a)(4) that are rich burn engines that use LPG must comply with the emission standards in § 60.4231(c) for their stationary SI ICE.
- (d) Owners and operators of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) and less than 75 KW (100 HP) (except gasoline and rich burn engines that use LPG) must comply with the emission standards for field testing in 40 CFR 1048.101(c) for their non-emergency stationary SI ICE and with the emission standards in Table 1 to this subpart for their emergency stationary SI ICE. Owners and operators of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) and less than 75 KW (100 HP) manufactured prior to January 1, 2011, that were certified to the standards in Table 1 to this subpart applicable to engines with a maximum engine power greater than or equal to 100 HP and less than 500 HP, may optionally choose to meet those standards.
- (e) Owners and operators of stationary SI ICE with a maximum engine power greater than or equal to 75 KW (100 HP) (except gasoline and rich burn engines that use LPG) must comply with the emission standards in Table 1 to this subpart for their stationary SI ICE. For owners and operators of stationary SI ICE with a maximum engine power greater than or equal to 100 HP (except gasoline and rich burn engines that use LPG) manufactured prior to January 1, 2011 that were certified to the certification emission standards in 40 CFR part 1048 applicable to engines that are not severe duty engines, if such stationary SI ICE was certified to a carbon monoxide (CO) standard above the standard in Table 1 to this subpart, then the owners and operators may meet the CO certification (not field testing) standard for which the engine was certified.
- (f) Owners and operators of any modified or reconstructed stationary SI ICE subject to this subpart must meet the requirements as specified in paragraphs (f)(1) through (5) of this section.
 - (1) Owners and operators of stationary SI ICE with a maximum engine power less than or equal to 19 KW (25 HP), that are modified or reconstructed after June 12, 2006, must comply with emission standards in § 60.4231(a) for their stationary SI ICE. Engines with a date of manufacture prior to July 1, 2008 must comply with the emission standards specified in § 60.4231(a) applicable to engines manufactured on July 1, 2008.

- (2) Owners and operators of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are gasoline engines and are modified or reconstructed after June 12, 2006, must comply with the emission standards in § 60.4231(b) for their stationary SI ICE. Engines with a date of manufacture prior to July 1, 2008 (or January 1, 2009 for emergency engines) must comply with the emission standards specified in § 60.4231(b) applicable to engines manufactured on July 1, 2008 (or January 1, 2009 for emergency engines).
- (3) Owners and operators of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are rich burn engines that use LPG, that are modified or reconstructed after June 12, 2006, must comply with the same emission standards as those specified in § 60.4231(c). Engines with a date of manufacture prior to July 1, 2008 (or January 1, 2009 for emergency engines) must comply with the emission standards specified in § 60.4231(c) applicable to engines manufactured on July 1, 2008 (or January 1, 2009 for emergency engines).
- (4) Owners and operators of stationary SI natural gas and lean burn LPG engines with a maximum engine power greater than 19 KW (25 HP), that are modified or reconstructed after June 12, 2006, must comply with the same emission standards as those specified in paragraph (d) or (e) of this section, except that such owners and operators of non-emergency engines and emergency engines greater than or equal to 130 HP must meet a nitrogen oxides (NO_x) emission standard of 3.0 grams per HP-hour (g/HP-hr), a CO emission standard of 4.0 g/HP-hr (5.0 g/HP-hr for non-emergency engines less than 100 HP), and a volatile organic compounds (VOC) emission standard of 1.0 g/HP-hr, or a NO_x emission standard of 250 ppmvd at 15 percent oxygen (O₂), a CO emission standard 540 ppmvd at 15 percent O₂ (675 ppmvd at 15 percent O₂ for non-emergency engines less than 100 HP), and a VOC emission standard of 86 ppmvd at 15 percent O₂, where the date of manufacture of the engine is:
 - (i) Prior to July 1, 2007, for non-emergency engines with a maximum engine power greater than or equal to 500 HP (except lean burn natural gas engines and LPG engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP);
 - (ii) Prior to July 1, 2008, for non-emergency engines with a maximum engine power less than 500 HP;
 - (iii) Prior to January 1, 2009, for emergency engines;
 - (iv) Prior to January 1, 2008, for non-emergency lean burn natural gas engines and LPG engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP.
- (5) Owners and operators of stationary SI landfill/digester gas ICE engines with a maximum engine power greater than 19 KW (25 HP), that are modified or reconstructed after June 12, 2006, must comply with the same emission standards as those specified in paragraph (e) of this section for stationary landfill/digester gas engines. Engines with maximum engine power less than 500 HP and a date of manufacture prior to July 1, 2008 must comply with the emission standards specified in paragraph (e) of this section for stationary landfill/digester gas ICE with a maximum engine power less than 500 HP manufactured on July 1, 2008. Engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines greater than or equal to 500 HP and less than 1,350 HP) and a date of manufacture prior to July 1, 2007 must comply with the emission standards specified in paragraph (e) of this section for stationary landfill/digester gas ICE with a maximum engine power greater than or equal to 500 HP (except lean burn engines greater than or equal to 500 HP and less than 1,350 HP) manufactured on July 1, 2007. Lean burn engines greater than or equal to 500 HP and less than 1,350 HP with a date of manufacture prior to January 1, 2008 must comply

with the emission standards specified in paragraph (e) of this section for stationary landfill/digester gas ICE that are lean burn engines greater than or equal to 500 HP and less than 1,350 HP and manufactured on January 1, 2008.

- (g) Owners and operators of stationary SI wellhead gas ICE engines may petition the Administrator for approval on a case-by-case basis to meet emission standards no less stringent than the emission standards that apply to stationary emergency SI engines greater than 25 HP and less than 130 HP due to the presence of high sulfur levels in the fuel, as specified in Table 1 to this subpart. The request must, at a minimum, demonstrate that the fuel has high sulfur levels that prevent the use of aftertreatment controls and also that the owner has reasonably made all attempts possible to obtain an engine that will meet the standards without the use of aftertreatment controls. The petition must request the most stringent standards reasonably applicable to the engine using the fuel.
- (h) Owners and operators of stationary SI ICE that are required to meet standards that reference 40 CFR 1048.101 must, if testing their engines in use, meet the standards in that section applicable to field testing, except as indicated in paragraph (e) of this section.

[73 FR 3591, Jan. 18, 2008, as amended at 76 FR 37973, June 28, 2011]

§ 60.4234 How long must I meet the emission standards if I am an owner or operator of a stationary SI internal combustion engine?

Owners and operators of stationary SI ICE must operate and maintain stationary SI ICE that achieve the emission standards as required in § 60.4233 over the entire life of the engine.

OTHER REQUIREMENTS FOR OWNERS AND OPERATORS

§ 60.4235 What fuel requirements must I meet if I am an owner or operator of a stationary SI gasoline fired internal combustion engine subject to this subpart?

Owners and operators of stationary SI ICE subject to this subpart that use gasoline must use gasoline that meets the per gallon sulfur limit in 40 CFR 1090.205.

[73 FR 3591, Jan. 18, 2008, as amended at 85 FR 78463, Dec. 4, 2020]

§ 60.4236 What is the deadline for importing or installing stationary SI ICE produced in previous model years?

- (a) After July 1, 2010, owners and operators may not install stationary SI ICE with a maximum engine power of less than 500 HP that do not meet the applicable requirements in § 60.4233.
- (b) After July 1, 2009, owners and operators may not install stationary SI ICE with a maximum engine power of greater than or equal to 500 HP that do not meet the applicable requirements in § 60.4233, except that lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP that do not meet the applicable requirements in § 60.4233 may not be installed after January 1, 2010.
- (c) For emergency stationary SI ICE with a maximum engine power of greater than 19 KW (25 HP), owners and operators may not install engines that do not meet the applicable requirements in § 60.4233 after January 1, 2011.

- (d) In addition to the requirements specified in §§ 60.4231 and 60.4233, it is prohibited to import stationary SI ICE less than or equal to 19 KW (25 HP), stationary rich burn LPG SI ICE, and stationary gasoline SI ICE that do not meet the applicable requirements specified in paragraphs (a), (b), and (c) of this section, after the date specified in paragraph (a), (b), and (c) of this section.
- (e) The requirements of this section do not apply to owners and operators of stationary SI ICE that have been modified or reconstructed, and they do not apply to engines that were removed from one existing location and reinstalled at a new location.

§ 60.4237 What are the monitoring requirements if I am an owner or operator of an emergency stationary SI internal combustion engine?

- (a) Starting on July 1, 2010, if the emergency stationary SI internal combustion engine that is greater than or equal to 500 HP that was built on or after July 1, 2010, does not meet the standards applicable to non-emergency engines, the owner or operator must install a non-resettable hour meter.
- (b) Starting on January 1, 2011, if the emergency stationary SI internal combustion engine that is greater than or equal to 130 HP and less than 500 HP that was built on or after January 1, 2011, does not meet the standards applicable to non-emergency engines, the owner or operator must install a non-resettable hour meter.
- (c) If you are an owner or operator of an emergency stationary SI internal combustion engine that is less than 130 HP, was built on or after July 1, 2008, and does not meet the standards applicable to non-emergency engines, you must install a non-resettable hour meter upon startup of your emergency engine.

COMPLIANCE REQUIREMENTS FOR MANUFACTURERS

§ 60.4238 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines ≤19 KW (25 HP) or a manufacturer of equipment containing such engines?

Stationary SI internal combustion engine manufacturers who are subject to the emission standards specified in § 60.4231(a) must certify their stationary SI ICE using the certification and testing procedures required in 40 CFR part 1054, subparts C and F. Manufacturers of equipment containing stationary SI internal combustion engines meeting the provisions of 40 CFR part 1054 must meet the provisions of 40 CFR part 1060, subpart C, to the extent they apply to equipment manufacturers.

[86 FR 34361, June 29, 2021]

§ 60.4239 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines >19 KW (25 HP) that use gasoline or a manufacturer of equipment containing such engines?

Stationary SI internal combustion engine manufacturers who are subject to the emission standards specified in § 60.4231(b) must certify their stationary SI ICE using the certification procedures required in 40 CFR part 1048, subpart C, and must test their engines as specified in that part. Stationary SI internal combustion engine manufacturers who certify their stationary SI ICE with a maximum engine power less than or equal to 30 KW (40 HP) with a total displacement less than or equal to 1,000 cc to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 1054, and manufacturers of stationary SI emergency engines that are greater than 25 HP and less than 130 HP who meet the Phase 1 emission standards in 40 CFR part

1054, appendix I, applicable to class II engines, must certify their stationary SI ICE using the certification and testing procedures required in 40 CFR part 1054, subparts C and F. Manufacturers of equipment containing stationary SI internal combustion engines meeting the provisions of 40 CFR part 1054 must meet the provisions of 40 CFR part 1060, subpart C, to the extent they apply to equipment manufacturers.

[86 FR 34361, June 29, 2021]

§ 60.4240 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines >19 KW (25 HP) that are rich burn engines that use LPG or a manufacturer of equipment containing such engines?

Stationary SI internal combustion engine manufacturers who are subject to the emission standards specified in § 60.4231(c) must certify their stationary SI ICE using the certification procedures required in 40 CFR part 1048, subpart C, and must test their engines as specified in that part. Stationary SI internal combustion engine manufacturers who certify their stationary SI ICE with a maximum engine power less than or equal to 30 KW (40 HP) with a total displacement less than or equal to 1,000 cc to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 1054, and manufacturers of stationary SI emergency engines that are greater than 25 HP and less than 130 HP who meet the Phase 1 emission standards in 40 CFR part 1054, appendix I, applicable to class II engines, must certify their stationary SI ICE using the certification and testing procedures required in 40 CFR part 1054, subparts C and F. Manufacturers of equipment containing stationary SI internal combustion engines meeting the provisions of 40 CFR part 1054 must meet the provisions of 40 CFR part 1060, subpart C, to the extent they apply to equipment manufacturers.

[86 FR 34361, June 29, 2021]

§ 60.4241 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines participating in the voluntary certification program or a manufacturer of equipment containing such engines?

- (a) Manufacturers of stationary SI internal combustion engines with a maximum engine power greater than 19 KW (25 HP) that do not use gasoline and are not rich burn engines that use LPG can choose to certify their engines to the emission standards in § 60.4231(d) or (e), as applicable, under the voluntary certification program described in this subpart. Manufacturers who certify their engines under the voluntary certification program must meet the requirements as specified in paragraphs (b) through (g) of this section. In addition, manufacturers of stationary SI internal combustion engines who choose to certify their engines under the voluntary certification program, must also meet the requirements as specified in § 60.4247. Manufacturers of stationary SI internal combustion engines who choose not to certify their engines under this section must notify the ultimate purchaser that testing requirements apply as described in § 60.4243(b)(2); manufacturers must keep a copy of this notification for five years after shipping each engine and make those documents available to EPA upon request.
- (b) Manufacturers of engines other than those certified to standards in 40 CFR part 1054 must certify their stationary SI ICE using the certification procedures required in 40 CFR part 1048, subpart C, and must follow the same test procedures that apply to Large SI nonroad engines under 40 CFR part 1048, but must use the D-1 cycle of International Organization for Standardization 8178-4: 1996(E) (incorporated by reference, see § 60.17) or the test cycle requirements specified in Table 3 to 40 CFR 1048.505, except that Table 3 of 40 CFR 1048.505 applies to high load engines only. Manufacturers of any size may certify their stationary emergency engines at or above 130 hp using assigned deterioration factors established by

EPA, consistent with 40 CFR 1048.240. Stationary SI internal combustion engine manufacturers who certify their stationary SI ICE with a maximum engine power less than or equal to 30 KW (40 HP) with a total displacement less than or equal to 1,000 cc to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 1054, and manufacturers of emergency engines that are greater than 25 HP and less than 130 HP who meet the Phase 1 standards in 40 CFR part 1054, appendix I, applicable to class II engines, must certify their stationary SI ICE using the certification and testing procedures required in 40 CFR part 1054, subparts C and F. Manufacturers of equipment containing stationary SI internal combustion engines meeting the provisions of 40 CFR part 1054 must meet the provisions of 40 CFR part 1060, subpart C, to the extent they apply to equipment manufacturers.

- (c) Certification of stationary SI ICE to the emission standards specified in § 60.4231(d) or (e), as applicable, is voluntary, but manufacturers who decide to certify are subject to all of the requirements indicated in this subpart with regard to the engines included in their certification. Manufacturers must clearly label their stationary SI engines as certified or non-certified engines.
- (d) Manufacturers of natural gas fired stationary SI ICE who conduct voluntary certification of stationary SI ICE to the emission standards specified in § 60.4231(d) or (e), as applicable, must certify their engines for operation using fuel that meets the definition of pipeline-quality natural gas. The fuel used for certifying stationary SI natural gas engines must meet the definition of pipeline-quality natural gas as described in § 60.4248. In addition, the manufacturer must provide information to the owner and operator of the certified stationary SI engine including the specifications of the pipeline-quality natural gas to which the engine is certified and what adjustments the owner or operator must make to the engine when installed in the field to ensure compliance with the emission standards.
- (e) Manufacturers of stationary SI ICE that are lean burn engines fueled by LPG who conduct voluntary certification of stationary SI ICE to the emission standards specified in § 60.4231(d) or (e), as applicable, must certify their engines for operation using fuel that meets the specifications in 40 CFR 1065.720.
- (f) Manufacturers may certify their engines for operation using gaseous fuels in addition to pipeline-quality natural gas; however, the manufacturer must specify the properties of that fuel and provide testing information showing that the engine will meet the emission standards specified in § 60.4231(d) or (e), as applicable, when operating on that fuel. The manufacturer must also provide instructions for configuring the stationary engine to meet the emission standards on fuels that do not meet the pipeline-quality natural gas definition. The manufacturer must also provide information to the owner and operator of the certified stationary SI engine regarding the configuration that is most conducive to reduced emissions where the engine will be operated on gaseous fuels with different quality than the fuel that it was certified to.
- (g) A stationary SI engine manufacturer may certify an engine family solely to the standards applicable to landfill/digester gas engines as specified in § 60.4231(d) or (e), as applicable, but must certify their engines for operation using landfill/digester gas and must add a permanent label stating that the engine is for use only in landfill/digester gas applications. The label must be added according to the labeling requirements specified in 40 CFR 1048.135(b).
- (h) For purposes of this subpart, when calculating emissions of volatile organic compounds, emissions of formaldehyde should not be included.
- (i) For engines being certified to the voluntary certification standards in Table 1 of this subpart, the VOC measurement shall be made by following the procedures in 40 CFR part 1065, subpart C, to determine the total NMHC emissions. As an alternative, manufacturers may measure ethane, as well as methane, for excluding such levels from the total VOC measurement.

[73 FR 3591, Jan. 18, 2008, as amended at 73 FR 59176, Oct. 8, 2008; 76 FR 37974, June 28, 2011; 86 FR 34361, June 29, 2021]

§ 60.4242 What other requirements must I meet if I am a manufacturer of stationary SI internal combustion engines or equipment containing stationary SI internal combustion engines or a manufacturer of equipment containing such engines?

- (a) Stationary SI internal combustion engine manufacturers must meet the provisions of 40 CFR parts 1048, 1054, and 1068, as applicable, except that engines certified pursuant to the voluntary certification procedures in § 60.4241 are subject only to the provisions indicated in § 60.4247 and are permitted to provide instructions to owners and operators allowing for deviations from certified configurations, if such deviations are consistent with the provisions of § 60.4241(c) through (f). Manufacturers of equipment containing stationary SI internal combustion engines meeting the provisions of 40 CFR part 1054 must meet the provisions of 40 CFR part 1060, as applicable. Labels on engines certified to 40 CFR part 1048 must refer to stationary engines, rather than or in addition to nonroad engines, as appropriate.
- (b) An engine manufacturer certifying an engine family or families to standards under this subpart that are identical to standards identified in 40 CFR part 1048 or 1054 for that model year may certify any such family that contains both nonroad and stationary engines as a single engine family and/or may include any such family containing stationary engines in the averaging, banking and trading provisions applicable for such engines under those parts. This paragraph (b) also applies to equipment or component manufacturers certifying to standards under 40 CFR part 1060.
- (c) Manufacturers of engine families certified to 40 CFR part 1048 may meet the labeling requirements referred to in paragraph (a) of this section for stationary SI ICE by either adding a separate label containing the information required in paragraph (a) of this section or by adding the words "and stationary" after the word "nonroad" to the label.
- (d) For all engines manufactured on or after January 1, 2011, and for all engines with a maximum engine power greater than 25 HP and less than 130 HP manufactured on or after July 1, 2008, a stationary SI engine manufacturer that certifies an engine family solely to the standards applicable to emergency engines must add a permanent label stating that the engines in that family are for emergency use only. The label must be added according to the labeling requirements specified in 40 CFR 1048.135(b).
- (e) All stationary SI engines subject to mandatory certification that do not meet the requirements of this subpart must be labeled and exported according to 40 CFR 1068.230. Manufacturers of stationary engines with a maximum engine power greater than 25 HP that are not certified to standards and other requirements under 40 CFR part 1048 are subject to the labeling provisions of 40 CFR 1048.20 pertaining to excluded stationary engines.
- (f) For manufacturers of gaseous-fueled stationary engines required to meet the warranty provisions in 40 CFR 1054.120, we may establish an hour-based warranty period equal to at least the certified emissions life of the engines (in engine operating hours) if we determine that these engines are likely to operate for a number of hours greater than the applicable useful life within 24 months. We will not approve an alternate warranty under this paragraph (f) for nonroad engines. An alternate warranty period approved under this paragraph (f) will be the specified number of engine operating hours or two years, whichever comes first. The engine manufacturer shall request this alternate warranty period in its application for certification or in an earlier submission. We may approve an alternate warranty period for an engine family subject to the following conditions:
 - (1) The engines must be equipped with non-resettable hour meters.

- (2) The engines must be designed to operate for a number of hours substantially greater than the applicable certified emissions life.
- (3) The emission-related warranty for the engines may not be shorter than any published warranty offered by the manufacturer without charge for the engines. Similarly, the emission-related warranty for any component shall not be shorter than any published warranty offered by the manufacturer without charge for that component.

[86 FR 34362, June 29, 2021]

COMPLIANCE REQUIREMENTS FOR OWNERS AND OPERATORS

§ 60.4243 What are my compliance requirements if I am an owner or operator of a stationary SI internal combustion engine?

- (a) If you are an owner or operator of a stationary SI internal combustion engine that is manufactured after July 1, 2008, and must comply with the emission standards specified in § 60.4233(a) through (c), you must comply by purchasing an engine certified to the emission standards in § 60.4231(a) through (c), as applicable, for the same engine class and maximum engine power. In addition, you must meet one of the requirements specified in (a)(1) and (2) of this section.
 - (1) If you operate and maintain the certified stationary SI internal combustion engine and control device according to the manufacturer's emission-related written instructions, you must keep records of conducted maintenance to demonstrate compliance, but no performance testing is required if you are an owner or operator. You must also meet the requirements as specified in 40 CFR part 1068, subparts A through D, as they apply to you. If you adjust engine settings according to and consistent with the manufacturer's instructions, your stationary SI internal combustion engine will not be considered out of compliance.
 - (2) If you do not operate and maintain the certified stationary SI internal combustion engine and control device according to the manufacturer's emission-related written instructions, your engine will be considered a non-certified engine, and you must demonstrate compliance according to (a)(2)(i) through (iii) of this section, as appropriate.
 - (i) If you are an owner or operator of a stationary SI internal combustion engine less than 100 HP, you must keep a maintenance plan and records of conducted maintenance to demonstrate compliance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions, but no performance testing is required if you are an owner or operator.
 - (ii) If you are an owner or operator of a stationary SI internal combustion engine greater than or equal to 100 HP and less than or equal to 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test within 1 year of engine startup to demonstrate compliance.
 - (iii) If you are an owner or operator of a stationary SI internal combustion engine greater than 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air

pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test within 1 year of engine startup and conduct subsequent performance testing every 8,760 hours or 3 years, whichever comes first, thereafter to demonstrate compliance.

- (b) If you are an owner or operator of a stationary SI internal combustion engine and must comply with the emission standards specified in § 60.4233(d) or (e), you must demonstrate compliance according to one of the methods specified in paragraphs (b)(1) and (2) of this section.
 - (1) Purchasing an engine certified according to procedures specified in this subpart, for the same model year and demonstrating compliance according to one of the methods specified in paragraph (a) of this section.
 - (2) Purchasing a non-certified engine and demonstrating compliance with the emission standards specified in § 60.4233(d) or (e) and according to the requirements specified in § 60.4244, as applicable, and according to paragraphs (b)(2)(i) and (ii) of this section.
 - (i) If you are an owner or operator of a stationary SI internal combustion engine greater than 25 HP and less than or equal to 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test to demonstrate compliance.
 - (ii) If you are an owner or operator of a stationary SI internal combustion engine greater than 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test and conduct subsequent performance testing every 8,760 hours or 3 years, whichever comes first, thereafter to demonstrate compliance.
- (c) If you are an owner or operator of a stationary SI internal combustion engine that must comply with the emission standards specified in § 60.4233(f), you must demonstrate compliance according paragraph (b)(2)(i) or (ii) of this section, except that if you comply according to paragraph (b)(2)(i) of this section, you demonstrate that your non-certified engine complies with the emission standards specified in § 60.4233(f).
- (d) If you own or operate an emergency stationary ICE, you must operate the emergency stationary ICE according to the requirements in paragraphs (d)(1) through (3) of this section. In order for the engine to be considered an emergency stationary ICE under this subpart, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (d)(1) through (3), is prohibited. If you do not operate the engine according to the requirements in paragraphs (d)(1) through (3), the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines.
 - (1) There is no time limit on the use of emergency stationary ICE in emergency situations.
 - (2) You may operate your emergency stationary ICE for the purpose specified in paragraph (d)(2)(i) of this section for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraph (d)(3) of this section counts as part of the 100 hours per calendar year allowed by this paragraph (d)(2).

- (i) Emergency stationary ICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year.

(ii)-(iii) [Reserved]

- (3) Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in paragraph (d)(2) of this section. Except as provided in paragraph (d)(3)(i) of this section, the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

- (i) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:
 - (A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator;
 - (B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.
 - (C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.
 - (D) The power is provided only to the facility itself or to support the local transmission and distribution system.
 - (E) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

(ii) [Reserved]

- (e) Owners and operators of stationary SI natural gas fired engines may operate their engines using propane for a maximum of 100 hours per year as an alternative fuel solely during emergency operations, but must keep records of such use. If propane is used for more than 100 hours per year in an engine that is not certified to the emission standards when using propane, the owners and operators are required to conduct a performance test to demonstrate compliance with the emission standards of § 60.4233.
- (f) If you are an owner or operator of a stationary SI internal combustion engine that is less than or equal to 500 HP and you purchase a non-certified engine or you do not operate and maintain your certified stationary SI internal combustion engine and control device according to the manufacturer's written emission-related instructions, you are required to perform initial performance testing as indicated in this

section, but you are not required to conduct subsequent performance testing unless the stationary engine undergoes rebuild, major repair or maintenance. Engine rebuilding means to overhaul an engine or to otherwise perform extensive service on the engine (or on a portion of the engine or engine system). For the purpose of this paragraph (f), perform extensive service means to disassemble the engine (or portion of the engine or engine system), inspect and/or replace many of the parts, and reassemble the engine (or portion of the engine or engine system) in such a manner that significantly increases the service life of the resultant engine.

- (g) It is expected that air-to-fuel ratio controllers will be used with the operation of three-way catalysts/non-selective catalytic reduction. The AFR controller must be maintained and operated appropriately in order to ensure proper operation of the engine and control device to minimize emissions at all times.
- (h) If you are an owner/operator of an stationary SI internal combustion engine with maximum engine power greater than or equal to 500 HP that is manufactured after July 1, 2007 and before July 1, 2008, and must comply with the emission standards specified in sections 60.4233(b) or (c), you must comply by one of the methods specified in paragraphs (h)(1) through (h)(4) of this section.
 - (1) Purchasing an engine certified according to 40 CFR part 1048. The engine must be installed and configured according to the manufacturer's specifications.
 - (2) Keeping records of performance test results for each pollutant for a test conducted on a similar engine. The test must have been conducted using the same methods specified in this subpart and these methods must have been followed correctly.
 - (3) Keeping records of engine manufacturer data indicating compliance with the standards.
 - (4) Keeping records of control device vendor data indicating compliance with the standards.
- (i) If you are an owner or operator of a modified or reconstructed stationary SI internal combustion engine and must comply with the emission standards specified in § 60.4233(f), you must demonstrate compliance according to one of the methods specified in paragraphs (i)(1) or (2) of this section.
 - (1) Purchasing, or otherwise owning or operating, an engine certified to the emission standards in § 60.4233(f), as applicable.
 - (2) Conducting a performance test to demonstrate initial compliance with the emission standards according to the requirements specified in § 60.4244. The test must be conducted within 60 days after the engine commences operation after the modification or reconstruction.

[73 FR 3591, Jan. 18, 2008, as amended at 76 FR 37974, June 28, 2011; 78 FR 6697, Jan. 30, 2013; 86 FR 34362, June 29, 2021; 87 FR 48606, Aug. 10, 2022]

TESTING REQUIREMENTS FOR OWNERS AND OPERATORS

§ 60.4244 What test methods and other procedures must I use if I am an owner or operator of a stationary SI internal combustion engine?

Owners and operators of stationary SI ICE who conduct performance tests must follow the procedures in paragraphs (a) through (f) of this section.

- (a) Each performance test must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and according to the requirements in § 60.8 and under the specific conditions that are specified by Table 2 to this subpart.
- (b) You may not conduct performance tests during periods of startup, shutdown, or malfunction, as specified in § 60.8(c). If your stationary SI internal combustion engine is non-operational, you do not need to startup the engine solely to conduct a performance test; however, you must conduct the performance test immediately upon startup of the engine.
- (c) You must conduct three separate test runs for each performance test required in this section, as specified in § 60.8(f). Each test run must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and last at least 1 hour.
- (d) To determine compliance with the NO_x mass per unit output emission limitation, convert the concentration of NO_x in the engine exhaust using Equation 1 of this section:

$$ER = \frac{C_d \times 1.912 \times 10^{-1} \times Q \times T}{HP - hr} \quad (Eq. 1)$$

Where:

ER = Emission rate of NO_x in g/HP-hr.

C_d = Measured NO_x concentration in parts per million by volume (ppmv).

1.912 × 10⁻³ = Conversion constant for ppm NO_x to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meter per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, horsepower-hour (HP-hr).

- (e) To determine compliance with the CO mass per unit output emission limitation, convert the concentration of CO in the engine exhaust using Equation 2 of this section:

$$ER = \frac{C_d \times 1.164 \times 10^{-1} \times Q \times T}{HP - hr} \quad (Eq. 2)$$

Where:

ER = Emission rate of CO in g/HP-hr.

C_d = Measured CO concentration in ppmv.

1.164 × 10⁻³ = Conversion constant for ppm CO to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meters per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, in HP-hr.

- (f) For purposes of this subpart, when calculating emissions of VOC, emissions of formaldehyde should not be included. To determine compliance with the VOC mass per unit output emission limitation, convert the concentration of VOC in the engine exhaust using Equation 3 of this section:

$$ER = \frac{C_d \times 1.833 \times 10^{-3} \times Q \times T}{HP-hr} \quad (Eq. 3)$$

Where:

ER = Emission rate of VOC in g/HP-hr.

C_d = VOC concentration measured as propane in ppmv.

1.833×10^{-3} = Conversion constant for ppm VOC measured as propane, to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meters per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, in HP-hr.

- (g) If the owner/operator chooses to measure VOC emissions using either Method 18 of 40 CFR part 60, appendix A, or Method 320 of 40 CFR part 63, appendix A, then it has the option of correcting the measured VOC emissions to account for the potential differences in measured values between these methods and Method 25A. The results from Method 18 and Method 320 can be corrected for response factor differences using Equations 4 and 5 of this section. The corrected VOC concentration can then be placed on a propane basis using Equation 6 of this section.

$$RF_i = \frac{C_{vi}}{C_{Ai}} \quad (Eq. 4)$$

Where:

RF_i = Response factor of compound i when measured with EPA Method 25A.

C_{Mi} = Measured concentration of compound i in ppmv as carbon.

C_{Ai} = True concentration of compound i in ppmv as carbon.

$$C_{Mi} = RF_i \times C_{Ai} \quad (Eq. 5)$$

Where:

$C_{i\text{corr}}$ = Concentration of compound i corrected to the value that would have been measured by EPA Method 25A, ppmv as carbon.

$C_{i\text{meas}}$ = Concentration of compound i measured by EPA Method 320, ppmv as carbon.

$$C_{\text{Peq}} = 0.6098 \times C_{i\text{corr}} \quad (\text{Eq. 6})$$

Where:

C_{Peq} = Concentration of compound i in mg of propane equivalent per DSCM.

NOTIFICATION, REPORTS, AND RECORDS FOR OWNERS AND OPERATORS

§ 60.4245 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary SI internal combustion engine?

Owners or operators of stationary SI ICE must meet the following notification, reporting and recordkeeping requirements.

- (a) Owners and operators of all stationary SI ICE must keep records of the information in paragraphs (a)(1) through (4) of this section.
 - (1) All notifications submitted to comply with this subpart and all documentation supporting any notification.
 - (2) Maintenance conducted on the engine.
 - (3) If the stationary SI internal combustion engine is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards and information as required in 40 CFR parts 1048, 1054, and 1060, as applicable.
 - (4) If the stationary SI internal combustion engine is not a certified engine or is a certified engine operating in a non-certified manner and subject to § 60.4243(a)(2), documentation that the engine meets the emission standards.
- (b) For all stationary SI emergency ICE greater than or equal to 500 HP manufactured on or after July 1, 2010, that do not meet the standards applicable to non-emergency engines, the owner or operator of must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. For all stationary SI emergency ICE greater than or equal to 130 HP and less than 500 HP manufactured on or after July 1, 2011 that do not meet the standards applicable to non-emergency engines, the owner or operator of must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. For all stationary SI emergency ICE greater than 25 HP and less than 130 HP manufactured on or after July 1, 2008, that do not meet the standards applicable to non-emergency engines, the owner or operator of must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation.

- (c) Owners and operators of stationary SI ICE greater than or equal to 500 HP that have not been certified by an engine manufacturer to meet the emission standards in § 60.4231 must submit an initial notification as required in § 60.7(a)(1). The notification must include the information in paragraphs (c)(1) through (5) of this section. Beginning on February 26, 2025 submit the notification electronically according to paragraph (g) of this section.
 - (1) Name and address of the owner or operator;
 - (2) The address of the affected source;
 - (3) Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement;
 - (4) Emission control equipment; and
 - (5) Fuel used.
- (d) Owners and operators of stationary SI ICE that are subject to performance testing must submit a copy of each performance test as conducted in § 60.4244 within 60 days after the test has been completed. Performance test reports using EPA Method 18, EPA Method 320, or ASTM D6348-03 (incorporated by reference—see 40 CFR 60.17) to measure VOC require reporting of all QA/QC data. For Method 18, report results from sections 8.4 and 11.1.1.4; for Method 320, report results from sections 8.6.2, 9.0, and 13.0; and for ASTM D6348-03 report results of all QA/QC procedures in Annexes 1-7. Beginning on February 26, 2025, performance tests must be reported electronically according to paragraph (f) of this section.
- (e) If you own or operate an emergency stationary SI ICE with a maximum engine power more than 100 HP that operates for the purpose specified in § 60.4243(d)(3)(i), you must submit an annual report according to the requirements in paragraphs (e)(1) through (3) of this section.
 - (1) The report must contain the following information:
 - (i) Company name and address where the engine is located.
 - (ii) Date of the report and beginning and ending dates of the reporting period.
 - (iii) Engine site rating and model year.
 - (iv) Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place.
 - (v)-(vi) [Reserved]
 - (vii) Hours spent for operation for the purposes specified in § 60.4243(d)(3)(i), including the date, start time, and end time for engine operation for the purposes specified in § 60.4243(d)(3)(i). The report must also identify the entity that dispatched the engine and the situation that necessitated the dispatch of the engine.
 - (2) The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year.
 - (3) The annual report must be submitted electronically using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (<https://cdx.epa.gov/>). However, if the reporting form specific to this subpart is

not available in CEDRI at the time that the report is due, the written report must be submitted to the Administrator at the appropriate address listed in § 60.4. Beginning on February 26, 2025, submit annual report electronically according to paragraph (g) of this section.

- (f) Beginning on February 26, 2025, within 60 days after the date of completing each performance test, you must submit the results following the procedures specified in paragraph (g) of this section. Data collected using test methods that are supported by the EPA's Electronic Reporting Tool (ERT) as listed on the EPA's ERT website (<https://www.epa.gov/electronic-reporting-air-emissions/electronic-reporting-tool-ert>) at the time of the test must be submitted in a file format generated using the EPA's ERT. Alternatively, you may submit an electronic file consistent with the extensible markup language (XML) schema listed on the EPA's ERT website. Data collected using test methods that are not supported by the EPA's ERT as listed on the EPA's ERT website at the time of the test must be included as an attachment in the ERT or an alternate electronic file.
- (g) If you are required to submit notifications or reports following the procedure specified in this paragraph (g), you must submit notifications or reports to the EPA via the Compliance and Emissions Data Reporting Interface (CEDRI), which can be accessed through the EPA's Central Data Exchange (CDX) (<https://cdx.epa.gov/>). The EPA will make all the information submitted through CEDRI available to the public without further notice to you. Do not use CEDRI to submit information you claim as CBI. Although we do not expect persons to assert a claim of CBI, if you wish to assert a CBI claim for some of the information in the report or notification, you must submit a complete file in the format specified in this subpart, including information claimed to be CBI, to the EPA following the procedures in paragraphs (g)(1) and (2) of this section. Clearly mark the part or all of the information that you claim to be CBI. Information not marked as CBI may be authorized for public release without prior notice. Information marked as CBI will not be disclosed except in accordance with procedures set forth in 40 CFR part 2. All CBI claims must be asserted at the time of submission. Anything submitted using CEDRI cannot later be claimed CBI. Furthermore, under CAA section 114(c), emissions data is not entitled to confidential treatment, and the EPA is required to make emissions data available to the public. Thus, emissions data will not be protected as CBI and will be made publicly available. You must submit the same file submitted to the CBI office with the CBI omitted to the EPA via the EPA's CDX as described earlier in this paragraph (g).
 - (1) The preferred method to receive CBI is for it to be transmitted electronically using email attachments, File Transfer Protocol, or other online file sharing services. Electronic submissions must be transmitted directly to the OAQPS CBI Office at the email address oaqpscbi@epa.gov, and as described in paragraph (g) of this section, should include clear CBI markings. ERT files should be flagged to the attention of the Group Leader, Measurement Policy Group; all other files should be flagged to the attention of the Stationary Spark Ignition Internal Combustion Engine Sector Lead. If assistance is needed with submitting large electronic files that exceed the file size limit for email attachments, and if you do not have your own file sharing service, please email oaqpscbi@epa.gov to request a file transfer link.
 - (2) If you cannot transmit the file electronically, you may send CBI information through the postal service to the following address: OAQPS Document Control Officer (C404-02), OAQPS, U.S. Environmental Protection Agency, 109 T.W. Alexander Drive, P.O. Box 12055, Research Triangle Park, North Carolina 27711. ERT files should be sent to the attention of the Group Leader, Measurement Policy Group, and all other files should be sent to the attention of the Stationary Spark Ignition Internal Combustion Engine Sector Lead. The mailed CBI material should be double wrapped and clearly marked. Any CBI markings should not show through the outer envelope.

- (h) If you are required to electronically submit a report through CEDRI in the EPA's CDX, you may assert a claim of EPA system outage for failure to timely comply with that reporting requirement. To assert a claim of EPA system outage, you must meet the requirements outlined in paragraphs (h)(1) through (7) of this section.
 - (1) You must have been or will be precluded from accessing CEDRI and submitting a required report within the time prescribed due to an outage of either the EPA's CEDRI or CDX systems.
 - (2) The outage must have occurred within the period of time beginning five business days prior to the date that the submission is due.
 - (3) The outage may be planned or unplanned.
 - (4) You must submit notification to the Administrator in writing as soon as possible following the date you first knew, or through due diligence should have known, that the event may cause or has caused a delay in reporting.
 - (5) You must provide to the Administrator a written description identifying:
 - (i) The date(s) and time(s) when CDX or CEDRI was accessed and the system was unavailable;
 - (ii) A rationale for attributing the delay in reporting beyond the regulatory deadline to EPA system outage;
 - (iii) A description of measures taken or to be taken to minimize the delay in reporting; and
 - (iv) The date by which you propose to report, or if you have already met the reporting requirement at the time of the notification, the date you reported.
 - (6) The decision to accept the claim of EPA system outage and allow an extension to the reporting deadline is solely within the discretion of the Administrator.
 - (7) In any circumstance, the report must be submitted electronically as soon as possible after the outage is resolved.
- (i) If you are required to electronically submit a report through CEDRI in the EPA's CDX, you may assert a claim of force majeure for failure to timely comply with that reporting requirement. To assert a claim of force majeure, you must meet the requirements outlined in paragraphs (i)(1) through (5) of this section.
 - (1) You may submit a claim if a force majeure event is about to occur, occurs, or has occurred or there are lingering effects from such an event within the period of time beginning five business days prior to the date the submission is due. For the purposes of this section, a force majeure event is defined as an event that will be or has been caused by circumstances beyond the control of the affected facility, its contractors, or any entity controlled by the affected facility that prevents you from complying with the requirement to submit a report electronically within the time period prescribed. Examples of such events are acts of nature (e.g., hurricanes, earthquakes, or floods), acts of war or terrorism, or equipment failure or safety hazard beyond the control of the affected facility (e.g., large scale power outage).
 - (2) You must submit notification to the Administrator in writing as soon as possible following the date you first knew, or through due diligence should have known, that the event may cause or has caused a delay in reporting.
 - (3) You must provide to the Administrator:

- (i) A written description of the force majeure event;
 - (ii) A rationale for attributing the delay in reporting beyond the regulatory deadline to the force majeure event;
 - (iii) A description of measures taken or to be taken to minimize the delay in reporting; and
 - (iv) The date by which you propose to report, or if you have already met the reporting requirement at the time of the notification, the date you reported.
- (4) The decision to accept the claim of force majeure and allow an extension to the reporting deadline is solely within the discretion of the Administrator.
- (5) In any circumstance, the reporting must occur as soon as possible after the force majeure event occurs.
- (j) Any records required to be maintained by this subpart that are submitted electronically via the EPA's CEDRI may be maintained in electronic format. This ability to maintain electronic copies does not affect the requirement for facilities to make records, data, and reports available upon request to a delegated air agency or the EPA as part of an on-site compliance evaluation.

[73 FR 3591, Jan. 18, 2008, as amended at 73 FR 59177, Oct. 8, 2008; 78 FR 6697, Jan. 30, 2013; 81 FR 59809, Aug. 30, 2016; 86 FR 34362, June 29, 2021; 87 FR 48606, Aug. 10, 2022; 89 FR 70514, Aug. 30, 2024]

GENERAL PROVISIONS

§ 60.4246 What General Provisions and confidential information provisions apply to me?

- (a) Table 3 to this subpart shows which parts of the General Provisions in §§ 60.1 through 60.19 apply to you.
- (b) The provisions of 40 CFR 1068.10 and 1068.11 apply for engine manufacturers. For others, the general confidential business information (CBI) provisions apply as described in 40 CFR part 2.

[88 FR 4471, Jan. 24, 2023]

MOBILE SOURCE PROVISIONS

§ 60.4247 What parts of the mobile source provisions apply to me if I am a manufacturer of stationary SI internal combustion engines or a manufacturer of equipment containing such engines?

- (a) Manufacturers certifying to emission standards in 40 CFR part 1054 must meet the provisions of 40 CFR part 1054. Note that 40 CFR part 1054, appendix I, describes various provisions that do not apply for engines meeting Phase 1 standards in 40 CFR part 1054. Manufacturers of equipment containing stationary SI internal combustion engines meeting the provisions of 40 CFR part 1054 must meet the provisions of 40 CFR part 1060 to the extent they apply to equipment manufacturers.
- (b) Manufacturers required to certify to emission standards in 40 CFR part 1048 must meet the provisions of 40 CFR part 1048. Manufacturers certifying to emission standards in 40 CFR part 1048 pursuant to the voluntary certification program must meet the requirements in Table 4 to this subpart as well as the standards in 40 CFR 1048.101.

- (c) For manufacturers of stationary SI internal combustion engines participating in the voluntary certification program and certifying engines to Table 1 to this subpart, Table 4 to this subpart shows which parts of the mobile source provisions in 40 CFR parts 1048, 1065, and 1068 apply to you. Compliance with the deterioration factor provisions under 40 CFR 1048.205(n) and 1048.240 will be required for engines built new on and after January 1, 2010. Prior to January 1, 2010, manufacturers of stationary internal combustion engines participating in the voluntary certification program have the option to develop their own deterioration factors based on an engineering analysis.

[73 FR 3591, Jan. 18, 2008, as amended at 73 FR 59177, Oct. 8, 2008; 86 FR 34362, June 29, 2021]

DEFINITIONS

§ 60.4248 What definitions apply to this subpart?

As used in this subpart, all terms not defined herein shall have the meaning given them in the CAA and in subpart A of this part.

Certified emissions life means the period during which the engine is designed to properly function in terms of reliability and fuel consumption, without being remanufactured, specified as a number of hours of operation or calendar years, whichever comes first. The values for certified emissions life for stationary SI ICE with a maximum engine power less than or equal to 19 KW (25 HP) are given in 40 CFR 1054.107 and 1060.101, as appropriate. The values for certified emissions life for stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) certified to 40 CFR part 1048 are given in 40 CFR 1048.101(g). The certified emissions life for stationary SI ICE with a maximum engine power greater than 75 KW (100 HP) certified under the voluntary manufacturer certification program of this subpart is 5,000 hours or 7 years, whichever comes first. You may request in your application for certification that we approve a shorter certified emissions life for an engine family. We may approve a shorter certified emissions life, in hours of engine operation but not in years, if we determine that these engines will rarely operate longer than the shorter certified emissions life. If engines identical to those in the engine family have already been produced and are in use, your demonstration must include documentation from such in-use engines. In other cases, your demonstration must include an engineering analysis of information equivalent to such in-use data, such as data from research engines or similar engine models that are already in production. Your demonstration must also include any overhaul interval that you recommend, any mechanical warranty that you offer for the engine or its components, and any relevant customer design specifications. Your demonstration may include any other relevant information. The certified emissions life value may not be shorter than any of the following:

- (1) 1,000 hours of operation.
- (2) Your recommended overhaul interval.
- (3) Your mechanical warranty for the engine.

Certified stationary internal combustion engine means an engine that belongs to an engine family that has a certificate of conformity that complies with the emission standards and requirements in this part, or of 40 CFR part 1048 or 1054, as appropriate.

Combustion turbine means all equipment, including but not limited to the turbine, the fuel, air, lubrication and exhaust gas systems, control systems (except emissions control equipment), and any ancillary components and sub-components comprising any simple cycle combustion turbine, any regenerative/recuperative cycle combustion turbine, the combustion turbine portion of any cogeneration cycle combustion system, or the combustion turbine portion of any combined cycle steam/electric generating system.

Compression ignition means relating to a type of stationary internal combustion engine that is not a spark ignition engine.

Date of manufacture means one of the following things:

- (1) For freshly manufactured engines and modified engines, date of manufacture means the date the engine is originally produced.
- (2) For reconstructed engines, date of manufacture means the date the engine was originally produced, except as specified in paragraph (3) of this definition.
- (3) Reconstructed engines are assigned a new date of manufacture if the fixed capital cost of the new and refurbished components exceeds 75 percent of the fixed capital cost of a comparable entirely new facility. An engine that is produced from a previously used engine block does not retain the date of manufacture of the engine in which the engine block was previously used if the engine is produced using all new components except for the engine block. In these cases, the date of manufacture is the date of reconstruction or the date the new engine is produced.

Diesel fuel means any liquid obtained from the distillation of petroleum with a boiling point of approximately 150 to 360 degrees Celsius. One commonly used form is number 2 distillate oil.

Digester gas means any gaseous by-product of wastewater treatment typically formed through the anaerobic decomposition of organic waste materials and composed principally of methane and carbon dioxide (CO₂).

Emergency stationary internal combustion engine means any stationary reciprocating internal combustion engine that meets all of the criteria in paragraphs (1) through (3) of this definition. All emergency stationary ICE must comply with the requirements specified in § 60.4243(d) in order to be considered emergency stationary ICE. If the engine does not comply with the requirements specified in § 60.4243(d), then it is not considered to be an emergency stationary ICE under this subpart.

- (1) The stationary ICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary ICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary ICE used to pump water in the case of fire or flood, etc.
- (2) The stationary ICE is operated under limited circumstances for situations not included in paragraph (1) of this definition, as specified in § 60.4243(d).
- (3) The stationary ICE operates as part of a financial arrangement with another entity in situations not included in paragraph (1) of this definition only as allowed in § 60.4243(d)(3)(i).

Engine manufacturer means the manufacturer of the engine. See the definition of "manufacturer" in this section.

Four-stroke engine means any type of engine which completes the power cycle in two crankshaft revolutions, with intake and compression strokes in the first revolution and power and exhaust strokes in the second revolution.

Freshly manufactured engine means an engine that has not been placed into service. An engine becomes freshly manufactured when it is originally produced.

Gasoline means any fuel sold in any State for use in motor vehicles and motor vehicle engines, or nonroad or stationary engines, and commonly or commercially known or sold as gasoline.

Installed means the engine is placed and secured at the location where it is intended to be operated.

Landfill gas means a gaseous by-product of the land application of municipal refuse typically formed through the anaerobic decomposition of waste materials and composed principally of methane and CO₂.

Lean burn engine means any two-stroke or four-stroke spark ignited engine that does not meet the definition of a rich burn engine.

Liquefied petroleum gas means any liquefied hydrocarbon gas obtained as a by-product in petroleum refining or natural gas production.

Manufacturer has the meaning given in section 216(1) of the Clean Air Act. In general, this term includes any person who manufactures a stationary engine for sale in the United States or otherwise introduces a new stationary engine into commerce in the United States. This includes importers who import stationary engines for resale.

Maximum engine power means maximum engine power as defined in 40 CFR 1048.801.

Model year means the calendar year in which an engine is manufactured (see "date of manufacture"), except as follows:

- (1) Model year means the annual new model production period of the engine manufacturer in which an engine is manufactured (see "date of manufacture"), if the annual new model production period is different than the calendar year and includes January 1 of the calendar year for which the model year is named. It may not begin before January 2 of the previous calendar year and it must end by December 31 of the named calendar year.
- (2) For an engine that is converted to a stationary engine after being placed into service as a nonroad or other non-stationary engine, model year means the calendar year or new model production period in which the engine was manufactured (see "date of manufacture").

Natural gas means a naturally occurring mixture of hydrocarbon and non-hydrocarbon gases found in geologic formations beneath the Earth's surface, of which the principal constituent is methane. Natural gas may be field or pipeline quality.

Other internal combustion engine means any internal combustion engine, except combustion turbines, which is not a reciprocating internal combustion engine or rotary internal combustion engine.

Pipeline-quality natural gas means a naturally occurring fluid mixture of hydrocarbons (e.g., methane, ethane, or propane) produced in geological formations beneath the Earth's surface that maintains a gaseous state at standard atmospheric temperature and pressure under ordinary conditions, and which is provided by a supplier through a pipeline. Pipeline-quality natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 950 and 1,100 British thermal units per standard cubic foot.

Rich burn engine means any four-stroke spark ignited engine where the manufacturer's recommended operating air/fuel ratio divided by the stoichiometric air/fuel ratio at full load conditions is less than or equal to 1.1. Engines originally manufactured as rich burn engines, but modified prior to June 12, 2006, with passive emission control technology for NO_x (such as pre-combustion chambers) will be considered lean burn engines. Also, existing engines where there are no manufacturer's recommendations regarding air/fuel ratio will be considered a rich burn engine if the excess oxygen content of the exhaust at full load conditions is less than or equal to 2 percent.

Rotary internal combustion engine means any internal combustion engine which uses rotary motion to convert heat energy into mechanical work.

Spark ignition means relating to either: a gasoline-fueled engine; or any other type of engine with a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation. Dual-fuel engines in which a liquid fuel (typically diesel fuel) is used for compression ignition and gaseous fuel (typically natural gas) is used as the primary fuel at an annual average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis are spark ignition engines.

Stationary internal combustion engine means any internal combustion engine, except combustion turbines, that converts heat energy into mechanical work and is not mobile. Stationary ICE differ from mobile ICE in that a stationary internal combustion engine is not a nonroad engine as defined at 40 CFR 1068.30 (excluding paragraph (2)(ii) of that definition), and is not used to propel a motor vehicle, aircraft, or a vehicle used solely for competition. Stationary ICE include reciprocating ICE, rotary ICE, and other ICE, except combustion turbines.

Stationary internal combustion engine test cell/stand means an engine test cell/stand, as defined in 40 CFR part 63, subpart P, that tests stationary ICE.

Stoichiometric means the theoretical air-to-fuel ratio required for complete combustion.

Subpart means 40 CFR part 60, subpart JJJJ.

Two-stroke engine means a type of engine which completes the power cycle in single crankshaft revolution by combining the intake and compression operations into one stroke and the power and exhaust operations into a second stroke. This system requires auxiliary scavenging and inherently runs lean of stoichiometric.

Volatile organic compounds means volatile organic compounds as defined in 40 CFR 51.100(s).

Voluntary certification program means an optional engine certification program that manufacturers of stationary SI internal combustion engines with a maximum engine power greater than 19 KW (25 HP) that do not use gasoline and are not rich burn engines that use LPG can choose to participate in to certify their engines to the emission standards in § 60.4231(d) or (e), as applicable.

[73 FR 3591, Jan. 18, 2008, as amended at 73 FR 59177, Oct. 8, 2008; 76 FR 37974, June 28, 2011; 78 FR 6698, Jan. 30, 2013; 86 FR 34363, June 29, 2021; 87 FR 48606, Aug. 10, 2022]

Table 1 to Subpart JJJJ of Part 60—NO_x, CO, and VOC Emission Standards for Stationary Non-Emergency SI Engines ≥100 HP (Except Gasoline and Rich Burn LPG), Stationary SI Landfill/Digester Gas Engines, and Stationary Emergency Engines >25 HP

Engine type and fuel	Maximum engine power	Manufacture date	Emission standards ^a					
			g/HP-hr			ppmvd at 15% O ₂		
			NO _x	CO	VOC ^d	NO _x	CO	VOC ^d
Non-Emergency SI Natural Gas ^b and Non-Emergency SI Lean Burn LPG ^b	100≤HP<500	7/1/2008	2.0	4.0	1.0	160	540	86
		1/1/2011	1.0	2.0	0.7	82	270	60
Non-Emergency SI Lean Burn Natural Gas and LPG	500≤HP<1,350	1/1/2008	2.0	4.0	1.0	160	540	86
		7/1/2010	1.0	2.0	0.7	82	270	60
Non-Emergency SI Natural Gas and Non-Emergency SI Lean Burn LPG (except lean burn 500≤HP<1,350)	HP≥500	7/1/2007	2.0	4.0	1.0	160	540	86
	HP≥500	7/1/2010	1.0	2.0	0.7	82	270	60
Landfill/Digester Gas (except lean burn 500≤HP<1,350)	HP<500	7/1/2008	3.0	5.0	1.0	220	610	80
		1/1/2011	2.0	5.0	1.0	150	610	80
	HP≥500	7/1/2007	3.0	5.0	1.0	220	610	80
		7/1/2010	2.0	5.0	1.0	150	610	80
Landfill/Digester Gas Lean Burn	500≤HP<1,350	1/1/2008	3.0	5.0	1.0	220	610	80
		7/1/2010	2.0	5.0	1.0	150	610	80
Emergency	25<HP<130	1/1/2009	^c 10	387	N/A	N/A	N/A	N/A
	HP≥130		2.0	4.0	1.0	160	540	86

^a Owners and operators of stationary non-certified SI engines may choose to comply with the emission standards in units of either g/HP-hr or ppmvd at 15 percent O₂.

^b Owners and operators of new or reconstructed non-emergency lean burn SI stationary engines with a site rating of greater than or equal to 250 brake HP located at a major source that are meeting the requirements of 40 CFR part 63, subpart ZZZZ, Table 2a do not have to comply with the CO emission standards of Table 1 of this subpart.

^c The emission standards applicable to emergency engines between 25 HP and 130 HP are in terms of NO_x + HC.

^d For purposes of this subpart, when calculating emissions of volatile organic compounds, emissions of formaldehyde should not be included.

[76 FR 37975, June 28, 2011]

Table 2 to Subpart JJJJ of Part 60—Requirements for Performance Tests

As stated in § 60.4244, you must comply with the following requirements for performance tests within 10 percent of 100 percent peak (or the highest achievable) load].

For each	Complying with the requirement to	You must	Using	According to the following requirements
1. Stationary SI internal combustion engine demonstrating compliance according to § 60.4244	a. Limit the concentration of NO _x in the stationary SI internal combustion engine exhaust	i. Select the sampling port location and the number/ location of traverse points at the exhaust of the stationary internal combustion engine; ii. Determine the O₂	(1) Method 1 or 1A of 40 CFR part 60, appendix A-1, if measuring flow rate (2) Method 3, 3A, or 3B^b of	(a) Alternatively, for NO_x, O₂, and moisture measurement, ducts ≤6 inches in diameter may be sampled at a single point located at the duct centroid and ducts >6 and ≤12 inches in diameter may be sampled at 3 traverse points located at 16.7, 50.0, and 83.3% of the measurement line ('3-point long line'). If the duct is >12 inches in diameter <i>and</i> the sampling port location meets the two and half-diameter criterion of Section 11.1.1 of Method 1 of 40 CFR part 60, Appendix A, the duct may be sampled at '3-point long line'; otherwise, conduct the stratification testing and select sampling points according to Section 8.1.2 of Method 7E of 40 CFR part 60, Appendix A. (b) Measurements to determine O₂ concentration must be made at the

^a Also, you may petition the Administrator for approval to use alternative methods for portable analyzer.

^b You may use ASME PTC 19.10-1981, Flue and Exhaust Gas Analyses, for measuring the O₂ content of the exhaust gas as an alternative to EPA Method 3B. AMSE PTC 19.10-1981 incorporated by reference, see 40 CFR 60.17

^c You may use EPA Method 18 of 40 CFR part 60, appendix A-6, provided that you conduct an adequate pre-survey test prior to the emissions test, such as the one described in OTM 11 on EPA's website (<http://www.epa.gov/ttn/emc/prelim/otm11.pdf>).

^d Incorporated by reference; see 40 CFR 60.17.

^e You must meet the requirements in § 60.4245(d).

For each	Complying with the requirement to	You must	Using	According to the following requirements
		concentration of the stationary internal combustion engine exhaust at the sampling port location;	40 CFR part 60, appendix A-2 or ASTM Method D6522-00 (Reapproved 2005) ^{a d}	same time as the measurements for NO _x concentration.
		iii. If necessary, determine the exhaust flowrate of the stationary internal combustion engine exhaust;	(3) Method 2 or 2C of 40 CFR part 60, appendix A-1 or Method 19 of 40 CFR part 60, appendix A-7	(c) Measurements to determine the exhaust flowrate must be made (1) at the same time as the measurement for NO _x concentration or, alternatively (2) according to the option in Section 11.1.2 of Method 1A of 40 CFR part 60, Appendix A-1, if applicable.
		iv. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location;	(4) Method 4 of 40 CFR part 60, appendix A-3, Method 320 of 40 CFR part 63, appendix A, ^e or ASTM Method D6348-03 ^{d e}	(d) Measurements to determine moisture must be made at the same time as the measurement for NO _x concentration.

^a Also, you may petition the Administrator for approval to use alternative methods for portable analyzer.

^b You may use ASME PTC 19.10-1981, Flue and Exhaust Gas Analyses, for measuring the O₂ content of the exhaust gas as an alternative to EPA Method 3B. AMSE PTC 19.10-1981 incorporated by reference, see 40 CFR 60.17

^c You may use EPA Method 18 of 40 CFR part 60, appendix A-6, provided that you conduct an adequate pre-survey test prior to the emissions test, such as the one described in OTM 11 on EPA's website (<http://www.epa.gov/ttn/emc/prelim/otm11.pdf>).

^d Incorporated by reference; see 40 CFR 60.17.

^e You must meet the requirements in § 60.4245(d).

For each	Complying with the requirement to	You must	Using	According to the following requirements
		and v. Measure NO _x at the exhaust of the stationary internal combustion engine; if using a control device, the sampling site must be located at the outlet of the control device	(5) Method 7E of 40 CFR part 60, appendix A-4, ASTM Method D6522-00 (Reapproved 2005), ^{a d} Method 320 of 40 CFR part 63, appendix A, ^e or ASTM Method D6348-03 ^{d e}	(e) Results of this test consist of the average of the three 1-hour or longer runs.
	b. Limit the concentration of CO in the stationary SI internal combustion engine exhaust	i. Select the sampling port location and the number/ location of traverse points at the exhaust of the stationary internal combustion engine;	(1) Method 1 or 1A of 40 CFR part 60, appendix A-1, if measuring flow rate	(a) Alternatively, for CO, O ₂ , and moisture measurement, ducts ≤6 inches in diameter may be sampled at a single point located at the duct centroid and ducts >6 and ≤12 inches in diameter may be sampled at 3 traverse points located at 16.7, 50.0, and 83.3% of the measurement line ('3-point long line'). If the duct is >12 inches in diameter <i>and</i> the sampling port location meets the two and half-diameter criterion of Section 11.1.1 of Method 1 of 40 CFR part 60,

^a Also, you may petition the Administrator for approval to use alternative methods for portable analyzer.

^b You may use ASME PTC 19.10-1981, Flue and Exhaust Gas Analyses, for measuring the O₂ content of the exhaust gas as an alternative to EPA Method 3B. AMSE PTC 19.10-1981 incorporated by reference, see 40 CFR 60.17

^c You may use EPA Method 18 of 40 CFR part 60, appendix A-6, provided that you conduct an adequate pre-survey test prior to the emissions test, such as the one described in OTM 11 on EPA's website (<http://www.epa.gov/ttn/emc/prelim/otm11.pdf>).

^d Incorporated by reference; see 40 CFR 60.17.

^e You must meet the requirements in § 60.4245(d).

For each	Complying with the requirement to	You must	Using	According to the following requirements
		ii. Determine the O₂ concentration of the stationary internal combustion engine exhaust at the sampling port location; iii. If necessary, determine the exhaust flowrate of the stationary internal combustion engine exhaust; iv. If necessary, measure	(2) Method 3, 3A, or 3B^b of 40 CFR part 60, appendix A-2 or ASTM Method D6522-00 (Reapproved 2005)^{a d} (3) Method 2 or 2C of 40 CFR 60, appendix A-1 or Method 19 of 40 CFR part 60, appendix A-7 (4) Method 4 of 40 CFR part 60,	Appendix A, the duct may be sampled at '3-point long line'; otherwise, conduct the stratification testing and select sampling points according to Section 8.1.2 of Method 7E of 40 CFR part 60, Appendix A. (b) Measurements to determine O₂ concentration must be made at the same time as the measurements for CO concentration. (c) Measurements to determine the exhaust flowrate must be made (1) at the same time as the measurement for CO concentration or, alternatively (2) according to the option in Section 11.1.2 of Method 1A of 40 CFR part 60, Appendix A-1, if applicable. (d) Measurements to determine moisture must be made at the same time as the measurement for

^a Also, you may petition the Administrator for approval to use alternative methods for portable analyzer.

^b You may use ASME PTC 19.10-1981, Flue and Exhaust Gas Analyses, for measuring the O₂ content of the exhaust gas as an alternative to EPA Method 3B. AMSE PTC 19.10-1981 incorporated by reference, see 40 CFR 60.17

^c You may use EPA Method 18 of 40 CFR part 60, appendix A-6, provided that you conduct an adequate pre-survey test prior to the emissions test, such as the one described in OTM 11 on EPA's website (<http://www.epa.gov/ttn/emc/prelim/otm11.pdf>).

^d Incorporated by reference; see 40 CFR 60.17.

^e You must meet the requirements in § 60.4245(d).

For each	Complying with the requirement to	You must	Using	According to the following requirements
		moisture content of the stationary internal combustion engine exhaust at the sampling port location; and v. Measure CO at the exhaust of the stationary internal combustion engine; if using a control device, the sampling site must be located at the outlet of the control device	appendix A-3, Method 320 of 40 CFR part 63, appendix A, ^e or ASTM Method D6348-03 ^{d e} (5) Method 10 of 40 CFR part 60, appendix A4, ASTM Method D6522-00 (Reapproved 2005), ^{a d e} Method 320 of 40 CFR part 63, appendix A, ^e or ASTM Method D6348-03 ^{d e}	CO concentration. (e) Results of this test consist of the average of the three 1-hour or longer runs.
	c. Limit the concentration of VOC in the stationary SI internal	i. Select the sampling port location and the number/	(1) Method 1 or 1A of 40 CFR part 60, appendix A-1, if measuring	(a) Alternatively, for VOC, O ₂ , and moisture measurement, ducts ≤6 inches in diameter may be sampled at a single point located at the duct centroid and ducts >6 and ≤12

^a Also, you may petition the Administrator for approval to use alternative methods for portable analyzer.

^b You may use ASME PTC 19.10-1981, Flue and Exhaust Gas Analyses, for measuring the O₂ content of the exhaust gas as an alternative to EPA Method 3B. AMSE PTC 19.10-1981 incorporated by reference, see 40 CFR 60.17

^c You may use EPA Method 18 of 40 CFR part 60, appendix A-6, provided that you conduct an adequate pre-survey test prior to the emissions test, such as the one described in OTM 11 on EPA's website (<http://www.epa.gov/ttn/emc/prelim/otm11.pdf>).

^d Incorporated by reference; see 40 CFR 60.17.

^e You must meet the requirements in § 60.4245(d).

^a Also, you may petition the Administrator for approval to use alternative methods for portable analyzer.

^b You may use ASME PTC 19.10-1981, Flue and Exhaust Gas Analyses, for measuring the O₂ content of the exhaust gas as an alternative to EPA Method 3B. AMSE PTC 19.10-1981 incorporated by reference, see 40 CFR 60.17

^c You may use EPA Method 18 of 40 CFR part 60, appendix A-6, provided that you conduct an adequate pre-survey test prior to the emissions test, such as the one described in OTM 11 on EPA's website (<http://www.epa.gov/ttn/emc/prelim/otm11.pdf>).

^d Incorporated by reference; see 40 CFR 60.17.

^e You must meet the requirements in § 60.4245(d).

For each	Complying with the requirement to	You must	Using	According to the following requirements
		flowrate of the stationary internal combustion engine exhaust; iv. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and v. Measure VOC at the exhaust of the stationary internal combustion engine; if using a control device, the sampling site must be	or Method 19 of 40 CFR part 60, appendix A-7 (4) Method 4 of 40 CFR part 60, appendix A-3, Method 320 of 40 CFR part 63, appendix A,^e or ASTM Method D6348-03^{d e} (5) Methods 25A and 18 of 40 CFR part 60, appendices A-6 and A-7, Method 25A with the use of a hydrocarbon cutter as described in	concentration or, alternatively (2) according to the option in Section 11.1.2 of Method 1A of 40 CFR part 60, Appendix A-1, if applicable. (d) Measurements to determine moisture must be made at the same time as the measurement for VOC concentration. (e) Results of this test consist of the average of the three 1-hour or longer runs.

^a Also, you may petition the Administrator for approval to use alternative methods for portable analyzer.

^b You may use ASME PTC 19.10-1981, Flue and Exhaust Gas Analyses, for measuring the O₂ content of the exhaust gas as an alternative to EPA Method 3B. AMSE PTC 19.10-1981 incorporated by reference, see 40 CFR 60.17

^c You may use EPA Method 18 of 40 CFR part 60, appendix A-6, provided that you conduct an adequate pre-survey test prior to the emissions test, such as the one described in OTM 11 on EPA's website (<http://www.epa.gov/ttn/emc/prelim/otm11.pdf>).

^d Incorporated by reference; see 40 CFR 60.17.

^e You must meet the requirements in § 60.4245(d).

For each	Complying with the requirement to	You must	Using	According to the following requirements
		located at the outlet of the control device	40 CFR 1065.265, Method 18 of 40 CFR part 60, appendix A-6, ^{c e} Method 320 of 40 CFR part 63, appendix A, ^e or ASTM Method D6348-03 ^{d e}	

^a Also, you may petition the Administrator for approval to use alternative methods for portable analyzer.

^b You may use ASME PTC 19.10-1981, Flue and Exhaust Gas Analyses, for measuring the O₂ content of the exhaust gas as an alternative to EPA Method 3B. AMSE PTC 19.10-1981 incorporated by reference, see 40 CFR 60.17

^c You may use EPA Method 18 of 40 CFR part 60, appendix A-6, provided that you conduct an adequate pre-survey test prior to the emissions test, such as the one described in OTM 11 on EPA's website (<http://www.epa.gov/ttn/emc/prelim/otm11.pdf>).

^d Incorporated by reference; see 40 CFR 60.17.

^e You must meet the requirements in § 60.4245(d).

[85 FR 63408, Oct. 7, 2020]

Table 3 to Subpart JJJJ of Part 60—Applicability of General Provisions to Subpart JJJJ

[AS STATED IN § 60.4246, YOU MUST COMPLY WITH THE FOLLOWING APPLICABLE GENERAL PROVISIONS]

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 60.1	General applicability of the General Provisions	Yes	

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 60.2	Definitions	Yes	Additional terms defined in § 60.4248.
§ 60.3	Units and abbreviations	Yes	
§ 60.4	Address	Yes	
§ 60.5	Determination of construction or modification	Yes	
§ 60.6	Review of plans	Yes	
§ 60.7	Notification and Recordkeeping	Yes	Except that § 60.7 only applies as specified in § 60.4245.
§ 60.8	Performance tests	Yes	Except that § 60.8 only applies to owners and operators who are subject to performance testing in subpart JJJJ.
§ 60.9	Availability of information	Yes	Requirements are specified in subpart JJJJ.
§ 60.10	State Authority	Yes	
§ 60.11	Compliance with standards and maintenance requirements	Yes	
§ 60.12	Circumvention	Yes	
§ 60.13	Monitoring requirements	No	
§ 60.14	Modification	Yes	
§ 60.15	Reconstruction	Yes	
§ 60.16	Priority list	Yes	
§ 60.17	Incorporations by reference	Yes	
§ 60.18	General control device requirements	No	
§ 60.19	General notification and reporting requirements	Yes	

Table 4 to Subpart JJJJ of Part 60—Applicability of Mobile Source Provisions for Manufacturers Participating in the Voluntary Certification Program and Certifying Stationary SI ICE to Emission Standards in Table 1 of Subpart JJJJ

[AS STATED IN § 60.4247, YOU MUST COMPLY WITH THE FOLLOWING APPLICABLE MOBILE SOURCE PROVISIONS IF YOU ARE A MANUFACTURER PARTICIPATING IN THE VOLUNTARY CERTIFICATION PROGRAM AND CERTIFYING STATIONARY SI ICE TO EMISSION STANDARDS IN TABLE 1 OF SUBPART JJJJ]

Mobile source provisions citation	Subject of citation	Applies to subpart	Explanation
1048 subpart A	Overview and Applicability	Yes	Except for the specific sections below.
1048 subpart B	Emission Standards and Related Requirements	Yes	
1048.101	Exhaust Emission Standards	No	
1048.105	Evaporative Emission Standards	No	
1048.110	Diagnosing Malfunctions	No	
1048.140	Certifying Blue Sky Series Engines	No	Except for the specific sections below.
1048.145	Interim Provisions	No	
1048 subpart C	Certifying Engine Families	Yes	
1048.205(b)	AECD reporting	Yes	
1048.205(c)	OBD Requirements	No	
1048.205(n)	Deterioration Factors	Yes	Except as indicated in 60.4247(c).
1048.205(p)(1)	Deterioration Factor Discussion	Yes	
1048.205(p)(2)	Liquid Fuels as they require	No	
1048.240(b)(c)(d)	Deterioration Factors	Yes	
1048 subpart D	Testing Production-Line Engines	Yes	
1048 subpart E	Testing In-Use Engines	No	
1048 subpart F	Test Procedures	Yes	
1065.5(a)(4)	Raw sampling (refers reader back to the specific emissions regulation for guidance)	Yes	
1048 subpart G	Compliance Provisions	Yes	
1048 subpart H	Reserved		
1048 subpart I	Definitions and Other Reference Information	Yes	
1048 appendix I	Yes		

Mobile source provisions citation	Subject of citation	Applies to subpart	Explanation
and II			
1065 (all subparts)	Engine Testing Procedures	Yes	Except for the specific section below.
1065.715	Test Fuel Specifications for Natural Gas	No	
1068 (all subparts)	General Compliance Provisions for Nonroad Programs	Yes	Except for the specific sections below.
1068.245	Hardship Provisions for Unusual Circumstances	No	
1068.250	Hardship Provisions for Small-Volume Manufacturers	No	
1068.255	Hardship Provisions for Equipment Manufacturers and Secondary Engine Manufacturers	No	

This content is from the eCFR and is authoritative but unofficial.

Title 40 —Protection of Environment

Chapter I —Environmental Protection Agency

Subchapter C —Air Programs

Part 60 —Standards of Performance for New Stationary Sources

Authority: 42 U.S.C. 7401 *et seq.*

Source: 36 FR 24877, Dec. 23, 1971, unless otherwise noted.

Subpart Dc Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

§ 60.40c Applicability and delegation of authority.

§ 60.41c Definitions.

§ 60.42c Standard for sulfur dioxide (SO₂).

§ 60.43c Standard for particulate matter (PM).

§ 60.44c Compliance and performance test methods and procedures for sulfur dioxide.

§ 60.45c Compliance and performance test methods and procedures for particulate matter.

§ 60.46c Emission monitoring for sulfur dioxide.

§ 60.47c Emission monitoring for particulate matter.

§ 60.48c Reporting and recordkeeping requirements.

Subpart Dc—Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

Source: 72 FR 32759, June 13, 2007, unless otherwise noted.

§ 60.40c Applicability and delegation of authority.

- (a) Except as provided in paragraphs (d), (e), (f), and (g) of this section, the affected facility to which this subpart applies is each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/h)) or less, but greater than or equal to 2.9 MW (10 MMBtu/h).
- (b) In delegating implementation and enforcement authority to a State under section 111(c) of the Clean Air Act, § 60.48c(a)(4) shall be retained by the Administrator and not transferred to a State.
- (c) Steam generating units that meet the applicability requirements in paragraph (a) of this section are not subject to the sulfur dioxide (SO₂) or particulate matter (PM) emission limits, performance testing requirements, or monitoring requirements under this subpart (§ 60.42c, § 60.43c, § 60.44c, § 60.45c, § 60.46c, or § 60.47c) during periods of combustion research, as defined in § 60.41c.

- (d) Any temporary change to an existing steam generating unit for the purpose of conducting combustion research is not considered a modification under § 60.14.
- (e) Affected facilities (i.e. heat recovery steam generators and fuel heaters) that are associated with stationary combustion turbines and meet the applicability requirements of subpart KKKK of this part are not subject to this subpart. This subpart will continue to apply to all other heat recovery steam generators, fuel heaters, and other affected facilities that are capable of combusting more than or equal to 2.9 MW (10 MMBtu/h) heat input of fossil fuel but less than or equal to 29 MW (100 MMBtu/h) heat input of fossil fuel. If the heat recovery steam generator, fuel heater, or other affected facility is subject to this subpart, only emissions resulting from combustion of fuels in the steam generating unit are subject to this subpart. (The stationary combustion turbine emissions are subject to subpart GG or KKKK, as applicable, of this part.)
- (f) Any affected facility that meets the applicability requirements of and is subject to subpart AAAA or subpart CCCC of this part is not subject to this subpart.
- (g) Any facility that meets the applicability requirements and is subject to an EPA approved State or Federal section 111(d)/129 plan implementing subpart BBBB of this part is not subject to this subpart.
- (h) Affected facilities that also meet the applicability requirements under subpart J or subpart Ja of this part are subject to the PM and NO_x standards under this subpart and the SO₂ standards under subpart J or subpart Ja of this part, as applicable.
- (i) Temporary boilers are not subject to this subpart.

[72 FR 32759, June 13, 2007, as amended at 74 FR 5090, Jan. 28, 2009; 77 FR 9461, Feb. 16, 2012]

§ 60.41c Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Clean Air Act and in subpart A of this part.

Annual capacity factor means the ratio between the actual heat input to a steam generating unit from an individual fuel or combination of fuels during a period of 12 consecutive calendar months and the potential heat input to the steam generating unit from all fuels had the steam generating unit been operated for 8,760 hours during that 12-month period at the maximum design heat input capacity. In the case of steam generating units that are rented or leased, the actual heat input shall be determined based on the combined heat input from all operations of the affected facility during a period of 12 consecutive calendar months.

Coal means all solid fuels classified as anthracite, bituminous, subbituminous, or lignite by the American Society of Testing and Materials in ASTM D388 (incorporated by reference, see § 60.17), coal refuse, and petroleum coke. Coal-derived synthetic fuels derived from coal for the purposes of creating useful heat, including but not limited to solvent refined coal, gasified coal not meeting the definition of natural gas, coal-oil mixtures, and coal-water mixtures, are also included in this definition for the purposes of this subpart.

Coal refuse means any by-product of coal mining or coal cleaning operations with an ash content greater than 50 percent (by weight) and a heating value less than 13,900 kilojoules per kilogram (kJ/kg) (6,000 Btu per pound (Btu/lb) on a dry basis.

Combined cycle system means a system in which a separate source (such as a stationary gas turbine, internal combustion engine, or kiln) provides exhaust gas to a steam generating unit.

Combustion research means the experimental firing of any fuel or combination of fuels in a steam generating unit for the purpose of conducting research and development of more efficient combustion or more effective prevention or control of air pollutant emissions from combustion, provided that, during these periods of research and development, the heat generated is not used for any purpose other than preheating combustion air for use by that steam generating unit (i.e., the heat generated is released to the atmosphere without being used for space heating, process heating, driving pumps, preheating combustion air for other units, generating electricity, or any other purpose).

Conventional technology means wet flue gas desulfurization technology, dry flue gas desulfurization technology, atmospheric fluidized bed combustion technology, and oil hydrodesulfurization technology.

Distillate oil means fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396 (incorporated by reference, see § 60.17), diesel fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D975 (incorporated by reference, see § 60.17), kerosine, as defined by the American Society of Testing and Materials in ASTM D3699 (incorporated by reference, see § 60.17), biodiesel as defined by the American Society of Testing and Materials in ASTM D6751 (incorporated by reference, see § 60.17), or biodiesel blends as defined by the American Society of Testing and Materials in ASTM D7467 (incorporated by reference, see § 60.17).

Dry flue gas desulfurization technology means a SO₂ control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline reagent and water, whether introduced separately or as a premixed slurry or solution and forming a dry powder material. This definition includes devices where the dry powder material is subsequently converted to another form. Alkaline reagents used in dry flue gas desulfurization systems include, but are not limited to, lime and sodium compounds.

Duct burner means a device that combusts fuel and that is placed in the exhaust duct from another source (such as a stationary gas turbine, internal combustion engine, kiln, etc.) to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a steam generating unit.

Emerging technology means any SO₂ control system that is not defined as a conventional technology under this section, and for which the owner or operator of the affected facility has received approval from the Administrator to operate as an emerging technology under § 60.48c(a)(4).

Federally enforceable means all limitations and conditions that are enforceable by the Administrator, including the requirements of 40 CFR parts 60 and 61, requirements within any applicable State implementation plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 51.24.

Fluidized bed combustion technology means a device wherein fuel is distributed onto a bed (or series of beds) of limestone aggregate (or other sorbent materials) for combustion; and these materials are forced upward in the device by the flow of combustion air and the gaseous products of combustion. Fluidized bed combustion technology includes, but is not limited to, bubbling bed units and circulating bed units.

Fuel pretreatment means a process that removes a portion of the sulfur in a fuel before combustion of the fuel in a steam generating unit.

Heat input means heat derived from combustion of fuel in a steam generating unit and does not include the heat derived from preheated combustion air, recirculated flue gases, or exhaust gases from other sources (such as stationary gas turbines, internal combustion engines, and kilns).

Heat transfer medium means any material that is used to transfer heat from one point to another point.

Maximum design heat input capacity means the ability of a steam generating unit to combust a stated maximum amount of fuel (or combination of fuels) on a steady state basis as determined by the physical design and characteristics of the steam generating unit.

Natural gas means:

- (1) A naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane; or
- (2) Liquefied petroleum (LP) gas, as defined by the American Society for Testing and Materials in ASTM D1835 (incorporated by reference, see § 60.17); or
- (3) A mixture of hydrocarbons that maintains a gaseous state at ISO conditions. Additionally, natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 34 and 43 megajoules (MJ) per dry standard cubic meter (910 and 1,150 Btu per dry standard cubic foot).

Noncontinental area means the State of Hawaii, the Virgin Islands, Guam, American Samoa, the Commonwealth of Puerto Rico, or the Northern Mariana Islands.

Oil means crude oil or petroleum, or a liquid fuel derived from crude oil or petroleum, including distillate oil and residual oil.

Potential sulfur dioxide emission rate means the theoretical SO₂ emissions (nanograms per joule (ng/J) or lb/MMBtu heat input) that would result from combusting fuel in an uncleaned state and without using emission control systems.

Process heater means a device that is primarily used to heat a material to initiate or promote a chemical reaction in which the material participates as a reactant or catalyst.

Residual oil means crude oil, fuel oil that does not comply with the specifications under the definition of distillate oil, and all fuel oil numbers 4, 5, and 6, as defined by the American Society for Testing and Materials in ASTM D396 (incorporated by reference, see § 60.17).

Steam generating unit means a device that combusts any fuel and produces steam or heats water or heats any heat transfer medium. This term includes any duct burner that combusts fuel and is part of a combined cycle system. This term does not include process heaters as defined in this subpart.

Steam generating unit operating day means a 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any time in the steam generating unit. It is not necessary for fuel to be combusted continuously for the entire 24-hour period.

Temporary boiler means a steam generating unit that combusts natural gas or distillate oil with a potential SO₂ emissions rate no greater than 26 ng/J (0.060 lb/MMBtu), and the unit is designed to, and is capable of, being carried or moved from one location to another by means of, for example, wheels, skids, carrying handles, dollies, trailers, or platforms. A steam generating unit is not a temporary boiler if any one of the following conditions exists:

- (1) The equipment is attached to a foundation.

- (2) The steam generating unit or a replacement remains at a location for more than 180 consecutive days. Any temporary boiler that replaces a temporary boiler at a location and performs the same or similar function will be included in calculating the consecutive time period.
- (3) The equipment is located at a seasonal facility and operates during the full annual operating period of the seasonal facility, remains at the facility for at least 2 years, and operates at that facility for at least 3 months each year.
- (4) The equipment is moved from one location to another in an attempt to circumvent the residence time requirements of this definition.

Wet flue gas desulfurization technology means an SO₂ control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline slurry or solution and forming a liquid material. This definition includes devices where the liquid material is subsequently converted to another form. Alkaline reagents used in wet flue gas desulfurization systems include, but are not limited to, lime, limestone, and sodium compounds.

Wet scrubber system means any emission control device that mixes an aqueous stream or slurry with the exhaust gases from a steam generating unit to control emissions of PM or SO₂.

Wood means wood, wood residue, bark, or any derivative fuel or residue thereof, in any form, including but not limited to sawdust, sanderdust, wood chips, scraps, slabs, millings, shavings, and processed pellets made from wood or other forest residues.

[72 FR 32759, June 13, 2007, as amended at 74 FR 5090, Jan. 28, 2009; 77 FR 9461, Feb. 16, 2012]

§ 60.42c Standard for sulfur dioxide (SO₂).

- (a) Except as provided in paragraphs (b), (c), and (e) of this section, on and after the date on which the performance test is completed or required to be completed under § 60.8, whichever date comes first, the owner or operator of an affected facility that combusts only coal shall neither: cause to be discharged into the atmosphere from the affected facility any gases that contain SO₂ in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 10 percent (0.10) of the potential SO₂ emission rate (90 percent reduction), nor cause to be discharged into the atmosphere from the affected facility any gases that contain SO₂ in excess of 520 ng/J (1.2 lb/MMBtu) heat input. If coal is combusted with other fuels, the affected facility shall neither: cause to be discharged into the atmosphere from the affected facility any gases that contain SO₂ in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 10 percent (0.10) of the potential SO₂ emission rate (90 percent reduction), nor cause to be discharged into the atmosphere from the affected facility any gases that contain SO₂ in excess of the emission limit is determined pursuant to paragraph (e)(2) of this section.
- (b) Except as provided in paragraphs (c) and (e) of this section, on and after the date on which the performance test is completed or required to be completed under § 60.8, whichever date comes first, the owner or operator of an affected facility that:
 - (1) Combusts only coal refuse alone in a fluidized bed combustion steam generating unit shall neither:
 - (i) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO₂ in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 20 percent (0.20) of the potential SO₂ emission rate (80 percent reduction); nor

- (ii) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO₂ in excess of 520 ng/J (1.2 lb/MMBtu) heat input. If coal is fired with coal refuse, the affected facility subject to paragraph (a) of this section. If oil or any other fuel (except coal) is fired with coal refuse, the affected facility is subject to the 87 ng/J (0.20 lb/MMBtu) heat input SO₂ emissions limit or the 90 percent SO₂ reduction requirement specified in paragraph (a) of this section and the emission limit is determined pursuant to paragraph (e)(2) of this section.
- (2) Combusts only coal and that uses an emerging technology for the control of SO₂ emissions shall neither:
 - (i) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO₂ in excess of 50 percent (0.50) of the potential SO₂ emission rate (50 percent reduction); nor
 - (ii) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO₂ in excess of 260 ng/J (0.60 lb/MMBtu) heat input. If coal is combusted with other fuels, the affected facility is subject to the 50 percent SO₂ reduction requirement specified in this paragraph and the emission limit determined pursuant to paragraph (e)(2) of this section.
- (c) On and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that combusts coal, alone or in combination with any other fuel, and is listed in paragraphs (c)(1), (2), (3), or (4) of this section shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO₂ in excess of the emission limit determined pursuant to paragraph (e)(2) of this section. Percent reduction requirements are not applicable to affected facilities under paragraphs (c)(1), (2), (3), or (4).
 - (1) Affected facilities that have a heat input capacity of 22 MW (75 MMBtu/h) or less;
 - (2) Affected facilities that have an annual capacity for coal of 55 percent (0.55) or less and are subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor for coal of 55 percent (0.55) or less.
 - (3) Affected facilities located in a noncontinental area; or
 - (4) Affected facilities that combust coal in a duct burner as part of a combined cycle system where 30 percent (0.30) or less of the heat entering the steam generating unit is from combustion of coal in the duct burner and 70 percent (0.70) or more of the heat entering the steam generating unit is from exhaust gases entering the duct burner.
- (d) On and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that combusts oil shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO₂ in excess of 215 ng/J (0.50 lb/MMBtu) heat input from oil; or, as an alternative, no owner or operator of an affected facility that combusts oil shall combust oil in the affected facility that contains greater than 0.5 weight percent sulfur. The percent reduction requirements are not applicable to affected facilities under this paragraph.
- (e) On and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that combusts coal, oil, or coal and oil with any other fuel shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO₂ in excess of the following:

- (1) The percent of potential SO₂ emission rate or numerical SO₂ emission rate required under paragraph (a) or (b)(2) of this section, as applicable, for any affected facility that
 - (i) Combusts coal in combination with any other fuel;
 - (ii) Has a heat input capacity greater than 22 MW (75 MMBtu/h); and
 - (iii) Has an annual capacity factor for coal greater than 55 percent (0.55); and
- (2) The emission limit determined according to the following formula for any affected facility that combusts coal, oil, or coal and oil with any other fuel:

$$E_s = \frac{(K_a H_a + K_b H_b + K_c H_c)}{(H_a + H_b + H_c)}$$

Where:

E_s = SO₂ emission limit, expressed in ng/J or lb/MMBtu heat input;

K_a = 520 ng/J (1.2 lb/MMBtu);

K_b = 260 ng/J (0.60 lb/MMBtu);

K_c = 215 ng/J (0.50 lb/MMBtu);

H_a = Heat input from the combustion of coal, except coal combusted in an affected facility subject to paragraph (b)(2) of this section, in Joules (J) [MMBtu];

H_b = Heat input from the combustion of coal in an affected facility subject to paragraph (b)(2) of this section, in J (MMBtu); and

H_c = Heat input from the combustion of oil, in J (MMBtu).

- (f) Reduction in the potential SO₂ emission rate through fuel pretreatment is not credited toward the percent reduction requirement under paragraph (b)(2) of this section unless:
 - (1) Fuel pretreatment results in a 50 percent (0.50) or greater reduction in the potential SO₂ emission rate; and
 - (2) Emissions from the pretreated fuel (without either combustion or post-combustion SO₂ control) are equal to or less than the emission limits specified under paragraph (b)(2) of this section.
- (g) Except as provided in paragraph (h) of this section, compliance with the percent reduction requirements, fuel oil sulfur limits, and emission limits of this section shall be determined on a 30-day rolling average basis.
- (h) For affected facilities listed under paragraphs (h)(1), (2), (3), or (4) of this section, compliance with the emission limits or fuel oil sulfur limits under this section may be determined based on a certification from the fuel supplier, as described under § 60.48c(f), as applicable.

- (1) Distillate oil-fired affected facilities with heat input capacities between 2.9 and 29 MW (10 and 100 MMBtu/hr).
 - (2) Residual oil-fired affected facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 MMBtu/hr).
 - (3) Coal-fired affected facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 MMBtu/h).
 - (4) Other fuels-fired affected facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 MMBtu/h).
- (i) The SO₂ emission limits, fuel oil sulfur limits, and percent reduction requirements under this section apply at all times, including periods of startup, shutdown, and malfunction.
- (j) For affected facilities located in noncontinental areas and affected facilities complying with the percent reduction standard, only the heat input supplied to the affected facility from the combustion of coal and oil is counted under this section. No credit is provided for the heat input to the affected facility from wood or other fuels or for heat derived from exhaust gases from other sources, such as stationary gas turbines, internal combustion engines, and kilns.

[72 FR 32759, June 13, 2007, as amended at 74 FR 5090, Jan. 28, 2009; 77 FR 9462, Feb. 16, 2012]

§ 60.43c Standard for particulate matter (PM).

- (a) On and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before February 28, 2005, that combusts coal or combusts mixtures of coal with other fuels and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater, shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of the following emission limits:
- (1) 22 ng/J (0.051 lb/MMBtu) heat input if the affected facility combusts only coal, or combusts coal with other fuels and has an annual capacity factor for the other fuels of 10 percent (0.10) or less.
 - (2) 43 ng/J (0.10 lb/MMBtu) heat input if the affected facility combusts coal with other fuels, has an annual capacity factor for the other fuels greater than 10 percent (0.10), and is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor greater than 10 percent (0.10) for fuels other than coal.
- (b) On and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before February 28, 2005, that combusts wood or combusts mixtures of wood with other fuels (except coal) and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater, shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of the following emissions limits:
- (1) 43 ng/J (0.10 lb/MMBtu) heat input if the affected facility has an annual capacity factor for wood greater than 30 percent (0.30); or
 - (2) 130 ng/J (0.30 lb/MMBtu) heat input if the affected facility has an annual capacity factor for wood of 30 percent (0.30) or less and is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor for wood of 30 percent (0.30) or less.

- (c) On and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that combusts coal, wood, or oil and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity. Owners and operators of an affected facility that elect to install, calibrate, maintain, and operate a continuous emissions monitoring system (CEMS) for measuring PM emissions according to the requirements of this subpart and are subject to a federally enforceable PM limit of 0.030 lb/MMBtu or less are exempt from the opacity standard specified in this paragraph (c).
- (d) The PM and opacity standards under this section apply at all times, except during periods of startup, shutdown, or malfunction.
- (e)
 - (1) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that commences construction, reconstruction, or modification after February 28, 2005, and that combusts coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of 13 ng/J (0.030 lb/MMBtu) heat input, except as provided in paragraphs (e)(2), (e)(3), and (e)(4) of this section.
 - (2) As an alternative to meeting the requirements of paragraph (e)(1) of this section, the owner or operator of an affected facility for which modification commenced after February 28, 2005, may elect to meet the requirements of this paragraph. On and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that commences modification after February 28, 2005 shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of both:
 - (i) 22 ng/J (0.051 lb/MMBtu) heat input derived from the combustion of coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels; and
 - (ii) 0.2 percent of the combustion concentration (99.8 percent reduction) when combusting coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels.
 - (3) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that commences modification after February 28, 2005, and that combusts over 30 percent wood (by heat input) on an annual basis and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of 43 ng/J (0.10 lb/MMBtu) heat input.
 - (4) An owner or operator of an affected facility that commences construction, reconstruction, or modification after February 28, 2005, and that combusts only oil that contains no more than 0.50 weight percent sulfur or a mixture of 0.50 weight percent sulfur oil with other fuels not subject to a PM standard under § 60.43c and not using a post-combustion technology (except a wet scrubber) to reduce PM or SO₂ emissions is not subject to the PM limit in this section.

[72 FR 32759, June 13, 2007, as amended at 74 FR 5091, Jan. 28, 2009; 77 FR 9462, Feb. 16, 2012]

§ 60.44c Compliance and performance test methods and procedures for sulfur dioxide.

- (a) Except as provided in paragraphs (g) and (h) of this section and § 60.8(b), performance tests required under § 60.8 shall be conducted following the procedures specified in paragraphs (b), (c), (d), (e), and (f) of this section, as applicable. Section 60.8(f) does not apply to this section. The 30-day notice required in § 60.8(d) applies only to the initial performance test unless otherwise specified by the Administrator.
- (b) The initial performance test required under § 60.8 shall be conducted over 30 consecutive operating days of the steam generating unit. Compliance with the percent reduction requirements and SO₂ emission limits under § 60.42c shall be determined using a 30-day average. The first operating day included in the initial performance test shall be scheduled within 30 days after achieving the maximum production rate at which the affect facility will be operated, but not later than 180 days after the initial startup of the facility. The steam generating unit load during the 30-day period does not have to be the maximum design heat input capacity, but must be representative of future operating conditions.
- (c) After the initial performance test required under paragraph (b) of this section and § 60.8, compliance with the percent reduction requirements and SO₂ emission limits under § 60.42c is based on the average percent reduction and the average SO₂ emission rates for 30 consecutive steam generating unit operating days. A separate performance test is completed at the end of each steam generating unit operating day, and a new 30-day average percent reduction and SO₂ emission rate are calculated to show compliance with the standard.
- (d) If only coal, only oil, or a mixture of coal and oil is combusted in an affected facility, the procedures in Method 19 of appendix A of this part are used to determine the hourly SO₂ emission rate (E_{ho}) and the 30-day average SO₂ emission rate (E_{ao}). The hourly averages used to compute the 30-day averages are obtained from the CEMS. Method 19 of appendix A of this part shall be used to calculate E_{ao} when using daily fuel sampling or Method 6B of appendix A of this part.
- (e) If coal, oil, or coal and oil are combusted with other fuels:
 - (1) An adjusted E_{ho} (E_{ho0}) is used in Equation 19-19 of Method 19 of appendix A of this part to compute the adjusted E_{ao} (E_{ao0}). The E_{ho0} is computed using the following formula:

$$E_{ho0} = \frac{E_{ho} - E_w(1 - X_k)}{X_k}$$

Where:

E_{ho0} = Adjusted E_{ho}, ng/J (lb/MMBtu);

E_{ho} = Hourly SO₂ emission rate, ng/J (lb/MMBtu);

E_w = SO₂ concentration in fuels other than coal and oil combusted in the affected facility, as determined by fuel sampling and analysis procedures in Method 9 of appendix A of this part, ng/J (lb/MMBtu). The value E_w for each fuel lot is used for each hourly average during the time that the lot is being combusted. The owner or operator does not have to measure E_w if the owner or operator elects to assume E_w = 0.

X_k = Fraction of the total heat input from fuel combustion derived from coal and oil, as determined by applicable procedures in Method 19 of appendix A of this part.

- (2) The owner or operator of an affected facility that qualifies under the provisions of § 60.42c(c) or (d) (where percent reduction is not required) does not have to measure the parameters E_w or X_k if the owner or operator of the affected facility elects to measure emission rates of the coal or oil using the fuel sampling and analysis procedures under Method 19 of appendix A of this part.
- (f) Affected facilities subject to the percent reduction requirements under § 60.42c(a) or (b) shall determine compliance with the SO₂ emission limits under § 60.42c pursuant to paragraphs (d) or (e) of this section, and shall determine compliance with the percent reduction requirements using the following procedures:
- (1) If only coal is combusted, the percent of potential SO₂ emission rate is computed using the following formula:

$$\%P_s = 100 \left(1 - \frac{\%R_g}{100} \right) \left(1 - \frac{\%R_f}{100} \right)$$

Where:

$\%P_s$ = Potential SO₂ emission rate, in percent;

$\%R_g$ = SO₂ removal efficiency of the control device as determined by Method 19 of appendix A of this part, in percent; and

$\%R_f$ = SO₂ removal efficiency of fuel pretreatment as determined by Method 19 of appendix A of this part, in percent.

- (2) If coal, oil, or coal and oil are combusted with other fuels, the same procedures required in paragraph (f)(1) of this section are used, except as provided for in the following:
- (i) To compute the $\%P_s$, an adjusted $\%R_g$ ($\%R_{go}$) is computed from E_{ao} from paragraph (e)(1) of this section and an adjusted average SO₂ inlet rate (E_{ai}) using the following formula:

$$\%R_{go} = 100 \left(1 - \frac{E_{ao}}{E_{ai}} \right)$$

Where:

$\%R_{go}$ = Adjusted $\%R_g$, in percent;

E_{ao} = Adjusted E_{ao} , ng/J (lb/MMBtu); and

E_{ai} = Adjusted average SO₂ inlet rate, ng/J (lb/MMBtu).

- (ii) To compute E_{ai} , an adjusted hourly SO₂ inlet rate (E_{hi}) is used. The E_{hi} is computed using the following formula:

$$E_{ho} = \frac{E_h - E_w(1 - X_k)}{X_k}$$

Where:

E_{ho} = Adjusted E_{hi} , ng/J (lb/MMBtu);

E_{hi} = Hourly SO_2 inlet rate, ng/J (lb/MMBtu);

E_w = SO_2 concentration in fuels other than coal and oil combusted in the affected facility, as determined by fuel sampling and analysis procedures in Method 19 of appendix A of this part, ng/J (lb/MMBtu). The value E_w for each fuel lot is used for each hourly average during the time that the lot is being combusted. The owner or operator does not have to measure E_w if the owner or operator elects to assume $E_w = 0$; and

X_k = Fraction of the total heat input from fuel combustion derived from coal and oil, as determined by applicable procedures in Method 19 of appendix A of this part.

- (g) For oil-fired affected facilities where the owner or operator seeks to demonstrate compliance with the fuel oil sulfur limits under § 60.42c based on shipment fuel sampling, the initial performance test shall consist of sampling and analyzing the oil in the initial tank of oil to be fired in the steam generating unit to demonstrate that the oil contains 0.5 weight percent sulfur or less. Thereafter, the owner or operator of the affected facility shall sample the oil in the fuel tank after each new shipment of oil is received, as described under § 60.46c(d)(2).
- (h) For affected facilities subject to § 60.42c(h)(1), (2), or (3) where the owner or operator seeks to demonstrate compliance with the SO_2 standards based on fuel supplier certification, the performance test shall consist of the certification from the fuel supplier, as described in § 60.48c(f), as applicable.
- (i) The owner or operator of an affected facility seeking to demonstrate compliance with the SO_2 standards under § 60.42c(c)(2) shall demonstrate the maximum design heat input capacity of the steam generating unit by operating the steam generating unit at this capacity for 24 hours. This demonstration shall be made during the initial performance test, and a subsequent demonstration may be requested at any other time. If the demonstrated 24-hour average firing rate for the affected facility is less than the maximum design heat input capacity stated by the manufacturer of the affected facility, the demonstrated 24-hour average firing rate shall be used to determine the annual capacity factor for the affected facility; otherwise, the maximum design heat input capacity provided by the manufacturer shall be used.
- (j) The owner or operator of an affected facility shall use all valid SO_2 emissions data in calculating $\%P_s$ and E_{ho} under paragraphs (d), (e), or (f) of this section, as applicable, whether or not the minimum emissions data requirements under § 60.46c(f) are achieved. All valid emissions data, including valid data collected during periods of startup, shutdown, and malfunction, shall be used in calculating $\%P_s$ or E_{ho} pursuant to paragraphs (d), (e), or (f) of this section, as applicable.

[72 FR 32759, June 13, 2007, as amended at 74 FR 5091, Jan. 28, 2009]

§ 60.45c Compliance and performance test methods and procedures for particulate matter.

- (a) The owner or operator of an affected facility subject to the PM and/or opacity standards under § 60.43c shall conduct an initial performance test as required under § 60.8, and shall conduct subsequent performance tests as requested by the Administrator, to determine compliance with the standards using the following procedures and reference methods, except as specified in paragraph (c) of this section.
 - (1) Method 1 of appendix A of this part shall be used to select the sampling site and the number of traverse sampling points.
 - (2) Method 3A or 3B of appendix A-2 of this part shall be used for gas analysis when applying Method 5 or 5B of appendix A-3 of this part or 17 of appendix A-6 of this part.
 - (3) Method 5, 5B, or 17 of appendix A of this part shall be used to measure the concentration of PM as follows:
 - (i) Method 5 of appendix A of this part may be used only at affected facilities without wet scrubber systems.
 - (ii) Method 17 of appendix A of this part may be used at affected facilities with or without wet scrubber systems provided the stack gas temperature does not exceed a temperature of 160 °C (320 °F). The procedures of Sections 8.1 and 11.1 of Method 5B of appendix A of this part may be used in Method 17 of appendix A of this part only if Method 17 of appendix A of this part is used in conjunction with a wet scrubber system. Method 17 of appendix A of this part shall not be used in conjunction with a wet scrubber system if the effluent is saturated or laden with water droplets.
 - (iii) Method 5B of appendix A of this part may be used in conjunction with a wet scrubber system.
 - (4) The sampling time for each run shall be at least 120 minutes and the minimum sampling volume shall be 1.7 dry standard cubic meters (dscm) [60 dry standard cubic feet (dscf)] except that smaller sampling times or volumes may be approved by the Administrator when necessitated by process variables or other factors.
 - (5) For Method 5 or 5B of appendix A of this part, the temperature of the sample gas in the probe and filter holder shall be monitored and maintained at 160 ±14 °C (320±25 °F).
 - (6) For determination of PM emissions, an oxygen (O₂) or carbon dioxide (CO₂) measurement shall be obtained simultaneously with each run of Method 5, 5B, or 17 of appendix A of this part by traversing the duct at the same sampling location.
 - (7) For each run using Method 5, 5B, or 17 of appendix A of this part, the emission rates expressed in ng/J (lb/MMBtu) heat input shall be determined using:
 - (i) The O₂ or CO₂ measurements and PM measurements obtained under this section,
 - (ii) The dry basis F factor, and
 - (iii) The dry basis emission rate calculation procedure contained in Method 19 of appendix A of this part.
 - (8) Method 9 of appendix A-4 of this part shall be used for determining the opacity of stack emissions.

- (b) The owner or operator of an affected facility seeking to demonstrate compliance with the PM standards under § 60.43c(b)(2) shall demonstrate the maximum design heat input capacity of the steam generating unit by operating the steam generating unit at this capacity for 24 hours. This demonstration shall be made during the initial performance test, and a subsequent demonstration may be requested at any other time. If the demonstrated 24-hour average firing rate for the affected facility is less than the maximum design heat input capacity stated by the manufacturer of the affected facility, the demonstrated 24-hour average firing rate shall be used to determine the annual capacity factor for the affected facility; otherwise, the maximum design heat input capacity provided by the manufacturer shall be used.
- (c) In place of PM testing with Method 5 or 5B of appendix A-3 of this part or Method 17 of appendix A-6 of this part, an owner or operator may elect to install, calibrate, maintain, and operate a CEMS for monitoring PM emissions discharged to the atmosphere and record the output of the system. The owner or operator of an affected facility who elects to continuously monitor PM emissions instead of conducting performance testing using Method 5 or 5B of appendix A-3 of this part or Method 17 of appendix A-6 of this part shall install, calibrate, maintain, and operate a CEMS and shall comply with the requirements specified in paragraphs (c)(1) through (c)(14) of this section.
 - (1) Notify the Administrator 1 month before starting use of the system.
 - (2) Notify the Administrator 1 month before stopping use of the system.
 - (3) The monitor shall be installed, evaluated, and operated in accordance with § 60.13 of subpart A of this part.
 - (4) The initial performance evaluation shall be completed no later than 180 days after the date of initial startup of the affected facility, as specified under § 60.8 of subpart A of this part or within 180 days of notification to the Administrator of use of CEMS if the owner or operator was previously determining compliance by Method 5, 5B, or 17 of appendix A of this part performance tests, whichever is later.
 - (5) The owner or operator of an affected facility shall conduct an initial performance test for PM emissions as required under § 60.8 of subpart A of this part. Compliance with the PM emission limit shall be determined by using the CEMS specified in paragraph (d) of this section to measure PM and calculating a 24-hour block arithmetic average emission concentration using EPA Reference Method 19 of appendix A of this part, section 4.1.
 - (6) Compliance with the PM emission limit shall be determined based on the 24-hour daily (block) average of the hourly arithmetic average emission concentrations using CEMS outlet data.
 - (7) At a minimum, valid CEMS hourly averages shall be obtained as specified in paragraph (c)(7)(i) of this section for 75 percent of the total operating hours per 30-day rolling average.
 - (i) At least two data points per hour shall be used to calculate each 1-hour arithmetic average.
 - (ii) [Reserved]
 - (8) The 1-hour arithmetic averages required under paragraph (c)(7) of this section shall be expressed in ng/J or lb/MMBtu heat input and shall be used to calculate the boiler operating day daily arithmetic average emission concentrations. The 1-hour arithmetic averages shall be calculated using the data points required under § 60.13(e)(2) of subpart A of this part.
 - (9) All valid CEMS data shall be used in calculating average emission concentrations even if the minimum CEMS data requirements of paragraph (c)(7) of this section are not met.

- (10) The CEMS shall be operated according to Performance Specification 11 in appendix B of this part.
 - (11) During the correlation testing runs of the CEMS required by Performance Specification 11 in appendix B of this part, PM and O₂ (or CO₂) data shall be collected concurrently (or within a 30- to 60-minute period) by both the continuous emission monitors and performance tests conducted using the following test methods.
 - (i) For PM, Method 5 or 5B of appendix A-3 of this part or Method 17 of appendix A-6 of this part shall be used; and
 - (ii) For O₂ (or CO₂), Method 3A or 3B of appendix A-2 of this part, as applicable shall be used.
 - (12) Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with procedure 2 in appendix F of this part. Relative Response Audits must be performed annually and Response Correlation Audits must be performed every 3 years.
 - (13) When PM emissions data are not obtained because of CEMS breakdowns, repairs, calibration checks, and zero and span adjustments, emissions data shall be obtained by using other monitoring systems as approved by the Administrator or EPA Reference Method 19 of appendix A of this part to provide, as necessary, valid emissions data for a minimum of 75 percent of total operating hours on a 30-day rolling average.
 - (14) As of January 1, 2012, and within 90 days after the date of completing each performance test, as defined in § 60.8, conducted to demonstrate compliance with this subpart, you must submit relative accuracy test audit (i.e., reference method) data and performance test (i.e., compliance test) data, except opacity data, electronically to EPA's Central Data Exchange (CDX) by using the Electronic Reporting Tool (ERT) (see http://www.epa.gov/ttn/chief/ert/ert_tool.html/) or other compatible electronic spreadsheet. Only data collected using test methods compatible with ERT are subject to this requirement to be submitted electronically into EPA's WebFIRE database.
- (d) The owner or operator of an affected facility seeking to demonstrate compliance under § 60.43c(e)(4) shall follow the applicable procedures under § 60.48c(f). For residual oil-fired affected facilities, fuel supplier certifications are only allowed for facilities with heat input capacities between 2.9 and 8.7 MW (10 to 30 MMBtu/h).

[72 FR 32759, June 13, 2007, as amended at 74 FR 5091, Jan. 28, 2009; 76 FR 3523, Jan. 20, 2011; 77 FR 9463, Feb. 16, 2012]

§ 60.46c Emission monitoring for sulfur dioxide.

- (a) Except as provided in paragraphs (d) and (e) of this section, the owner or operator of an affected facility subject to the SO₂ emission limits under § 60.42c shall install, calibrate, maintain, and operate a CEMS for measuring SO₂ concentrations and either O₂ or CO₂ concentrations at the outlet of the SO₂ control device (or the outlet of the steam generating unit if no SO₂ control device is used), and shall record the output of the system. The owner or operator of an affected facility subject to the percent reduction requirements under § 60.42c shall measure SO₂ concentrations and either O₂ or CO₂ concentrations at both the inlet and outlet of the SO₂ control device.
- (b) The 1-hour average SO₂ emission rates measured by a CEMS shall be expressed in ng/J or lb/MMBtu heat input and shall be used to calculate the average emission rates under § 60.42c. Each 1-hour average SO₂ emission rate must be based on at least 30 minutes of operation, and shall be calculated using the data

points required under § 60.13(h)(2). Hourly SO₂ emission rates are not calculated if the affected facility is operated less than 30 minutes in a 1-hour period and are not counted toward determination of a steam generating unit operating day.

- (c) The procedures under § 60.13 shall be followed for installation, evaluation, and operation of the CEMS.
 - (1) All CEMS shall be operated in accordance with the applicable procedures under Performance Specifications 1, 2, and 3 of appendix B of this part.
 - (2) Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with Procedure 1 of appendix F of this part.
 - (3) For affected facilities subject to the percent reduction requirements under § 60.42c, the span value of the SO₂ CEMS at the inlet to the SO₂ control device shall be 125 percent of the maximum estimated hourly potential SO₂ emission rate of the fuel combusted, and the span value of the SO₂ CEMS at the outlet from the SO₂ control device shall be 50 percent of the maximum estimated hourly potential SO₂ emission rate of the fuel combusted.
 - (4) For affected facilities that are not subject to the percent reduction requirements of § 60.42c, the span value of the SO₂ CEMS at the outlet from the SO₂ control device (or outlet of the steam generating unit if no SO₂ control device is used) shall be 125 percent of the maximum estimated hourly potential SO₂ emission rate of the fuel combusted.
- (d) As an alternative to operating a CEMS at the inlet to the SO₂ control device (or outlet of the steam generating unit if no SO₂ control device is used) as required under paragraph (a) of this section, an owner or operator may elect to determine the average SO₂ emission rate by sampling the fuel prior to combustion. As an alternative to operating a CEMS at the outlet from the SO₂ control device (or outlet of the steam generating unit if no SO₂ control device is used) as required under paragraph (a) of this section, an owner or operator may elect to determine the average SO₂ emission rate by using Method 6B of appendix A of this part. Fuel sampling shall be conducted pursuant to either paragraph (d)(1) or (d)(2) of this section. Method 6B of appendix A of this part shall be conducted pursuant to paragraph (d)(3) of this section.
 - (1) For affected facilities combusting coal or oil, coal or oil samples shall be collected daily in an as-fired condition at the inlet to the steam generating unit and analyzed for sulfur content and heat content according the Method 19 of appendix A of this part. Method 19 of appendix A of this part provides procedures for converting these measurements into the format to be used in calculating the average SO₂ input rate.
 - (2) As an alternative fuel sampling procedure for affected facilities combusting oil, oil samples may be collected from the fuel tank for each steam generating unit immediately after the fuel tank is filled and before any oil is combusted. The owner or operator of the affected facility shall analyze the oil sample to determine the sulfur content of the oil. If a partially empty fuel tank is refilled, a new sample and analysis of the fuel in the tank would be required upon filling. Results of the fuel analysis taken after each new shipment of oil is received shall be used as the daily value when calculating the 30-day rolling average until the next shipment is received. If the fuel analysis shows that the sulfur content in the fuel tank is greater than 0.5 weight percent sulfur, the owner or operator shall ensure that the sulfur content of subsequent oil shipments is low enough to cause the 30-day rolling average sulfur content to be 0.5 weight percent sulfur or less.

- (3) Method 6B of appendix A of this part may be used in lieu of CEMS to measure SO₂ at the inlet or outlet of the SO₂ control system. An initial stratification test is required to verify the adequacy of the Method 6B of appendix A of this part sampling location. The stratification test shall consist of three paired runs of a suitable SO₂ and CO₂ measurement train operated at the candidate location and a second similar train operated according to the procedures in § 3.2 and the applicable procedures in section 7 of Performance Specification 2 of appendix B of this part. Method 6B of appendix A of this part, Method 6A of appendix A of this part, or a combination of Methods 6 and 3 of appendix A of this part or Methods 6C and 3A of appendix A of this part are suitable measurement techniques. If Method 6B of appendix A of this part is used for the second train, sampling time and timer operation may be adjusted for the stratification test as long as an adequate sample volume is collected; however, both sampling trains are to be operated similarly. For the location to be adequate for Method 6B of appendix A of this part 24-hour tests, the mean of the absolute difference between the three paired runs must be less than 10 percent (0.10).
- (e) The monitoring requirements of paragraphs (a) and (d) of this section shall not apply to affected facilities subject to § 60.42c(h) (1), (2), or (3) where the owner or operator of the affected facility seeks to demonstrate compliance with the SO₂ standards based on fuel supplier certification, as described under § 60.48c(f), as applicable.
- (f) The owner or operator of an affected facility operating a CEMS pursuant to paragraph (a) of this section, or conducting as-fired fuel sampling pursuant to paragraph (d)(1) of this section, shall obtain emission data for at least 75 percent of the operating hours in at least 22 out of 30 successive steam generating unit operating days. If this minimum data requirement is not met with a single monitoring system, the owner or operator of the affected facility shall supplement the emission data with data collected with other monitoring systems as approved by the Administrator.

§ 60.47c Emission monitoring for particulate matter.

- (a) Except as provided in paragraphs (c), (d), (e), and (f) of this section, the owner or operator of an affected facility combusting coal, oil, or wood that is subject to the opacity standards under § 60.43c shall install, calibrate, maintain, and operate a continuous opacity monitoring system (COMS) for measuring the opacity of the emissions discharged to the atmosphere and record the output of the system. The owner or operator of an affected facility subject to an opacity standard in § 60.43c(c) that is not required to use a COMS due to paragraphs (c), (d), (e), or (f) of this section that elects not to use a COMS shall conduct a performance test using Method 9 of appendix A-4 of this part and the procedures in § 60.11 to demonstrate compliance with the applicable limit in § 60.43c by April 29, 2011, within 45 days of stopping use of an existing COMS, or within 180 days after initial startup of the facility, whichever is later, and shall comply with either paragraphs (a)(1), (a)(2), or (a)(3) of this section. The observation period for Method 9 of appendix A-4 of this part performance tests may be reduced from 3 hours to 60 minutes if all 6-minute averages are less than 10 percent and all individual 15-second observations are less than or equal to 20 percent during the initial 60 minutes of observation.
 - (1) Except as provided in paragraph (a)(2) and (a)(3) of this section, the owner or operator shall conduct subsequent Method 9 of appendix A-4 of this part performance tests using the procedures in paragraph (a) of this section according to the applicable schedule in paragraphs (a)(1)(i) through (a)(1)(iv) of this section, as determined by the most recent Method 9 of appendix A-4 of this part performance test results.

- (i) If no visible emissions are observed, a subsequent Method 9 of appendix A-4 of this part performance test must be completed within 12 calendar months from the date that the most recent performance test was conducted or within 45 days of the next day that fuel with an opacity standard is combusted, whichever is later;
 - (ii) If visible emissions are observed but the maximum 6-minute average opacity is less than or equal to 5 percent, a subsequent Method 9 of appendix A-4 of this part performance test must be completed within 6 calendar months from the date that the most recent performance test was conducted or within 45 days of the next day that fuel with an opacity standard is combusted, whichever is later;
 - (iii) If the maximum 6-minute average opacity is greater than 5 percent but less than or equal to 10 percent, a subsequent Method 9 of appendix A-4 of this part performance test must be completed within 3 calendar months from the date that the most recent performance test was conducted or within 45 days of the next day that fuel with an opacity standard is combusted, whichever is later; or
 - (iv) If the maximum 6-minute average opacity is greater than 10 percent, a subsequent Method 9 of appendix A-4 of this part performance test must be completed within 45 calendar days from the date that the most recent performance test was conducted.
- (2) If the maximum 6-minute opacity is less than 10 percent during the most recent Method 9 of appendix A-4 of this part performance test, the owner or operator may, as an alternative to performing subsequent Method 9 of appendix A-4 of this part performance tests, elect to perform subsequent monitoring using Method 22 of appendix A-7 of this part according to the procedures specified in paragraphs (a)(2)(i) and (ii) of this section.
- (i) The owner or operator shall conduct 10 minute observations (during normal operation) each operating day the affected facility fires fuel for which an opacity standard is applicable using Method 22 of appendix A-7 of this part and demonstrate that the sum of the occurrences of any visible emissions is not in excess of 5 percent of the observation period (*i.e.*, 30 seconds per 10 minute period). If the sum of the occurrence of any visible emissions is greater than 30 seconds during the initial 10 minute observation, immediately conduct a 30 minute observation. If the sum of the occurrence of visible emissions is greater than 5 percent of the observation period (*i.e.*, 90 seconds per 30 minute period), the owner or operator shall either document and adjust the operation of the facility and demonstrate within 24 hours that the sum of the occurrence of visible emissions is equal to or less than 5 percent during a 30 minute observation (*i.e.*, 90 seconds) or conduct a new Method 9 of appendix A-4 of this part performance test using the procedures in paragraph (a) of this section within 45 calendar days according to the requirements in § 60.45c(a)(8).
 - (ii) If no visible emissions are observed for 10 operating days during which an opacity standard is applicable, observations can be reduced to once every 7 operating days during which an opacity standard is applicable. If any visible emissions are observed, daily observations shall be resumed.
- (3) If the maximum 6-minute opacity is less than 10 percent during the most recent Method 9 of appendix A-4 of this part performance test, the owner or operator may, as an alternative to performing subsequent Method 9 of appendix A-4 performance tests, elect to perform subsequent monitoring using a digital opacity compliance system according to a site-specific monitoring plan approved by the Administrator. The observations shall be similar, but not necessarily identical, to the

requirements in paragraph (a)(2) of this section. For reference purposes in preparing the monitoring plan, see OAQPS "Determination of Visible Emission Opacity from Stationary Sources Using Computer-Based Photographic Analysis Systems." This document is available from the U.S. Environmental Protection Agency (U.S. EPA); Office of Air Quality and Planning Standards; Sector Policies and Programs Division; Measurement Policy Group (D243-02), Research Triangle Park, NC 27711. This document is also available on the Technology Transfer Network (TTN) under Emission Measurement Center Preliminary Methods.

- (b) All COMS shall be operated in accordance with the applicable procedures under Performance Specification 1 of appendix B of this part. The span value of the opacity COMS shall be between 60 and 80 percent.
- (c) Owners and operators of an affected facilities that burn only distillate oil that contains no more than 0.5 weight percent sulfur and/or liquid or gaseous fuels with potential sulfur dioxide emission rates of 26 ng/J (0.060 lb/MMBtu) heat input or less and that do not use a post-combustion technology to reduce SO₂ or PM emissions and that are subject to an opacity standard in § 60.43c(c) are not required to operate a COMS if they follow the applicable procedures in § 60.48c(f).
- (d) Owners or operators complying with the PM emission limit by using a PM CEMS must calibrate, maintain, operate, and record the output of the system for PM emissions discharged to the atmosphere as specified in § 60.45c(c). The CEMS specified in paragraph § 60.45c(c) shall be operated and data recorded during all periods of operation of the affected facility except for CEMS breakdowns and repairs. Data is recorded during calibration checks, and zero and span adjustments.
- (e) Owners and operators of an affected facility that is subject to an opacity standard in § 60.43c(c) and that does not use post-combustion technology (except a wet scrubber) for reducing PM, SO₂, or carbon monoxide (CO) emissions, burns only gaseous fuels or fuel oils that contain less than or equal to 0.5 weight percent sulfur, and is operated such that emissions of CO discharged to the atmosphere from the affected facility are maintained at levels less than or equal to 0.15 lb/MMBtu on a boiler operating day average basis is not required to operate a COMS. Owners and operators of affected facilities electing to comply with this paragraph must demonstrate compliance according to the procedures specified in paragraphs (e)(1) through (4) of this section; or
 - (1) You must monitor CO emissions using a CEMS according to the procedures specified in paragraphs (e)(1)(i) through (iv) of this section.
 - (i) The CO CEMS must be installed, certified, maintained, and operated according to the provisions in § 60.58b(i)(3) of subpart Eb of this part.
 - (ii) Each 1-hour CO emissions average is calculated using the data points generated by the CO CEMS expressed in parts per million by volume corrected to 3 percent oxygen (dry basis).
 - (iii) At a minimum, valid 1-hour CO emissions averages must be obtained for at least 90 percent of the operating hours on a 30-day rolling average basis. The 1-hour averages are calculated using the data points required in § 60.13(h)(2).
 - (iv) Quarterly accuracy determinations and daily calibration drift tests for the CO CEMS must be performed in accordance with procedure 1 in appendix F of this part.
 - (2) You must calculate the 1-hour average CO emissions levels for each steam generating unit operating day by multiplying the average hourly CO output concentration measured by the CO CEMS times the corresponding average hourly flue gas flow rate and divided by the corresponding average hourly

heat input to the affected source. The 24-hour average CO emission level is determined by calculating the arithmetic average of the hourly CO emission levels computed for each steam generating unit operating day.

- (3) You must evaluate the preceding 24-hour average CO emission level each steam generating unit operating day excluding periods of affected source startup, shutdown, or malfunction. If the 24-hour average CO emission level is greater than 0.15 lb/MMBtu, you must initiate investigation of the relevant equipment and control systems within 24 hours of the first discovery of the high emission incident and, take the appropriate corrective action as soon as practicable to adjust control settings or repair equipment to reduce the 24-hour average CO emission level to 0.15 lb/MMBtu or less.
 - (4) You must record the CO measurements and calculations performed according to paragraph (e) of this section and any corrective actions taken. The record of corrective action taken must include the date and time during which the 24-hour average CO emission level was greater than 0.15 lb/MMBtu, and the date, time, and description of the corrective action.
- (f) An owner or operator of an affected facility that is subject to an opacity standard in § 60.43c(c) is not required to operate a COMS provided that the affected facility meets the conditions in either paragraphs (f)(1), (2), or (3) of this section.
- (1) The affected facility uses a fabric filter (baghouse) as the primary PM control device and, the owner or operator operates a bag leak detection system to monitor the performance of the fabric filter according to the requirements in section § 60.48Da of this part.
 - (2) The affected facility uses an ESP as the primary PM control device, and the owner or operator uses an ESP predictive model to monitor the performance of the ESP developed in accordance and operated according to the requirements in section § 60.48Da of this part.
 - (3) The affected facility burns only gaseous fuels and/or fuel oils that contain no greater than 0.5 weight percent sulfur, and the owner or operator operates the unit according to a written site-specific monitoring plan approved by the permitting authority. This monitoring plan must include procedures and criteria for establishing and monitoring specific parameters for the affected facility indicative of compliance with the opacity standard. For testing performed as part of this site-specific monitoring plan, the permitting authority may require as an alternative to the notification and reporting requirements specified in §§ 60.8 and 60.11 that the owner or operator submit any deviations with the excess emissions report required under § 60.48c(c).

[72 FR 32759, June 13, 2007, as amended at 74 FR 5091, Jan. 28, 2009; 76 FR 3523, Jan. 20, 2011; 77 FR 9463, Feb. 16, 2012]

§ 60.48c Reporting and recordkeeping requirements.

- (a) The owner or operator of each affected facility shall submit notification of the date of construction or reconstruction and actual startup, as provided by § 60.7 of this part. This notification shall include:
 - (1) The design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility.
 - (2) If applicable, a copy of any federally enforceable requirement that limits the annual capacity factor for any fuel or mixture of fuels under § 60.42c, or § 60.43c.
 - (3) The annual capacity factor at which the owner or operator anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired.

- (4) Notification if an emerging technology will be used for controlling SO₂ emissions. The Administrator will examine the description of the control device and will determine whether the technology qualifies as an emerging technology. In making this determination, the Administrator may require the owner or operator of the affected facility to submit additional information concerning the control device. The affected facility is subject to the provisions of § 60.42c(a) or (b)(1), unless and until this determination is made by the Administrator.
- (b) The owner or operator of each affected facility subject to the SO₂ emission limits of § 60.42c, or the PM or opacity limits of § 60.43c, shall submit to the Administrator the performance test data from the initial and any subsequent performance tests and, if applicable, the performance evaluation of the CEMS and/or COMS using the applicable performance specifications in appendix B of this part.
- (c) In addition to the applicable requirements in § 60.7, the owner or operator of an affected facility subject to the opacity limits in § 60.43c(c) shall submit excess emission reports for any excess emissions from the affected facility that occur during the reporting period and maintain records according to the requirements specified in paragraphs (c)(1) through (3) of this section, as applicable to the visible emissions monitoring method used.
 - (1) For each performance test conducted using Method 9 of appendix A-4 of this part, the owner or operator shall keep the records including the information specified in paragraphs (c)(1)(i) through (iii) of this section.
 - (i) Dates and time intervals of all opacity observation periods;
 - (ii) Name, affiliation, and copy of current visible emission reading certification for each visible emission observer participating in the performance test; and
 - (iii) Copies of all visible emission observer opacity field data sheets;
 - (2) For each performance test conducted using Method 22 of appendix A-4 of this part, the owner or operator shall keep the records including the information specified in paragraphs (c)(2)(i) through (iv) of this section.
 - (i) Dates and time intervals of all visible emissions observation periods;
 - (ii) Name and affiliation for each visible emission observer participating in the performance test;
 - (iii) Copies of all visible emission observer opacity field data sheets; and
 - (iv) Documentation of any adjustments made and the time the adjustments were completed to the affected facility operation by the owner or operator to demonstrate compliance with the applicable monitoring requirements.
 - (3) For each digital opacity compliance system, the owner or operator shall maintain records and submit reports according to the requirements specified in the site-specific monitoring plan approved by the Administrator
- (d) The owner or operator of each affected facility subject to the SO₂ emission limits, fuel oil sulfur limits, or percent reduction requirements under § 60.42c shall submit reports to the Administrator.
- (e) The owner or operator of each affected facility subject to the SO₂ emission limits, fuel oil sulfur limits, or percent reduction requirements under § 60.42c shall keep records and submit reports as required under paragraph (d) of this section, including the following information, as applicable.
 - (1) Calendar dates covered in the reporting period.

- (2) Each 30-day average SO₂ emission rate (ng/J or lb/MMBtu), or 30-day average sulfur content (weight percent), calculated during the reporting period, ending with the last 30-day period; reasons for any noncompliance with the emission standards; and a description of corrective actions taken.
 - (3) Each 30-day average percent of potential SO₂ emission rate calculated during the reporting period, ending with the last 30-day period; reasons for any noncompliance with the emission standards; and a description of the corrective actions taken.
 - (4) Identification of any steam generating unit operating days for which SO₂ or diluent (O₂ or CO₂) data have not been obtained by an approved method for at least 75 percent of the operating hours; justification for not obtaining sufficient data; and a description of corrective actions taken.
 - (5) Identification of any times when emissions data have been excluded from the calculation of average emission rates; justification for excluding data; and a description of corrective actions taken if data have been excluded for periods other than those during which coal or oil were not combusted in the steam generating unit.
 - (6) Identification of the F factor used in calculations, method of determination, and type of fuel combusted.
 - (7) Identification of whether averages have been obtained based on CEMS rather than manual sampling methods.
 - (8) If a CEMS is used, identification of any times when the pollutant concentration exceeded the full span of the CEMS.
 - (9) If a CEMS is used, description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specifications 2 or 3 of appendix B of this part.
 - (10) If a CEMS is used, results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1 of this part.
 - (11) If fuel supplier certification is used to demonstrate compliance, records of fuel supplier certification as described under paragraph (f)(1), (2), (3), or (4) of this section, as applicable. In addition to records of fuel supplier certifications, the report shall include a certified statement signed by the owner or operator of the affected facility that the records of fuel supplier certifications submitted represent all of the fuel combusted during the reporting period.
- (f) Fuel supplier certification shall include the following information:
- (1) For distillate oil:
 - (i) The name of the oil supplier;
 - (ii) A statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil in § 60.41c; and
 - (iii) The sulfur content or maximum sulfur content of the oil.
 - (2) For residual oil:
 - (i) The name of the oil supplier;

- (ii) The location of the oil when the sample was drawn for analysis to determine the sulfur content of the oil, specifically including whether the oil was sampled as delivered to the affected facility, or whether the sample was drawn from oil in storage at the oil supplier's or oil refiner's facility, or other location;
- (iii) The sulfur content of the oil from which the shipment came (or of the shipment itself); and
- (iv) The method used to determine the sulfur content of the oil.

(3) For coal:

- (i) The name of the coal supplier;
- (ii) The location of the coal when the sample was collected for analysis to determine the properties of the coal, specifically including whether the coal was sampled as delivered to the affected facility or whether the sample was collected from coal in storage at the mine, at a coal preparation plant, at a coal supplier's facility, or at another location. The certification shall include the name of the coal mine (and coal seam), coal storage facility, or coal preparation plant (where the sample was collected);
- (iii) The results of the analysis of the coal from which the shipment came (or of the shipment itself) including the sulfur content, moisture content, ash content, and heat content; and
- (iv) The methods used to determine the properties of the coal.

(4) For other fuels:

- (i) The name of the supplier of the fuel;
- (ii) The potential sulfur emissions rate or maximum potential sulfur emissions rate of the fuel in ng/J heat input; and
- (iii) The method used to determine the potential sulfur emissions rate of the fuel.

(g)

- (1) Except as provided under paragraphs (g)(2) and (g)(3) of this section, the owner or operator of each affected facility shall record and maintain records of the amount of each fuel combusted during each operating day.
- (2) As an alternative to meeting the requirements of paragraph (g)(1) of this section, the owner or operator of an affected facility that combusts only natural gas, wood, fuels using fuel certification in § 60.48c(f) to demonstrate compliance with the SO₂ standard, fuels not subject to an emissions standard (excluding opacity), or a mixture of these fuels may elect to record and maintain records of the amount of each fuel combusted during each calendar month.
- (3) As an alternative to meeting the requirements of paragraph (g)(1) of this section, the owner or operator of an affected facility or multiple affected facilities located on a contiguous property unit where the only fuels combusted in any steam generating unit (including steam generating units not subject to this subpart) at that property are natural gas, wood, distillate oil meeting the most current requirements in § 60.42C to use fuel certification to demonstrate compliance with the SO₂ standard, and/or fuels, excluding coal and residual oil, not subject to an emissions standard (excluding opacity) may elect to record and maintain records of the total amount of each steam generating unit fuel delivered to that property during each calendar month.

- (h) The owner or operator of each affected facility subject to a federally enforceable requirement limiting the annual capacity factor for any fuel or mixture of fuels under § 60.42c or § 60.43c shall calculate the annual capacity factor individually for each fuel combusted. The annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of the calendar month.
- (i) All records required under this section shall be maintained by the owner or operator of the affected facility for a period of two years following the date of such record.
- (j) The reporting period for the reports required under this subpart is each six-month period. All reports shall be submitted to the Administrator and shall be postmarked by the 30th day following the end of the reporting period.

[72 FR 32759, June 13, 2007, as amended at 74 FR 5091, Jan. 28, 2009]

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Title 40 —Protection of Environment

Chapter I —Environmental Protection Agency

Subchapter C —Air Programs

Part 60 —Standards of Performance for New Stationary Sources

Authority: 42 U.S.C. 7401 *et seq.*

Source: 36 FR 24877, Dec. 23, 1971, unless otherwise noted.

Subpart Kc Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After October 4, 2023

§ 60.110c Applicability and designation of affected facility.

§ 60.111c Definitions.

§ 60.112c Standard for volatile organic compounds (VOC).

§ 60.113c Testing, monitoring, and inspection procedures.

§ 60.114c Alternative means of emission limitation.

§ 60.115c Recordkeeping requirements.

§ 60.116c Reporting requirements.

§ 60.117c Delegation of authority.

Subpart Kc—Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After October 4, 2023

Source: 89 FR 83319, Oct. 15, 2024, unless otherwise noted.

§ 60.110c Applicability and designation of affected facility.

(a) Except as provided in paragraph (b) of this section, the affected facility to which this subpart applies is each storage vessel with a capacity greater than or equal to 20,000 gallons (gal) (75.7 cubic meters (m³)) that is used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after October 4, 2023.

(b) This subpart does not apply to the following:

(1) Vessels at coke oven by-product plants;

(2) Pressure vessels designed to operate in excess of 29.7 pounds per square inch absolute (psia) (204.9 kilopascals (kPa) absolute) and without emissions to the atmosphere;

(3) Vessels permanently attached to mobile vehicles such as trucks, railcars, barges, or ships;

- (4) Vessels with a design capacity less than or equal to 420,000 gal (1,589.874 m³) used for petroleum or condensate stored, processed, or treated prior to custody transfer;
 - (5) Vessels located at bulk gasoline plants as defined in 40 CFR 63.11100;
 - (6) Vessels located at gasoline service stations;
 - (7) Vessels used to store beverage alcohol; or
 - (8) Vessels that only store VOL with a maximum true vapor pressure less than 0.25 psia (1.7 kPa absolute).
- (c) Storage vessels that are affected facilities according to paragraph (a) of this section for which construction or reconstruction commenced after October 4, 2023 are subject to the standards in § 60.112c and the corresponding requirements in §§ 60.113c through 60.116c as new sources any time they meet the specifications in either paragraph (c)(1) or (2) of this section, regardless of whether they initially contained VOL with a maximum true vapor pressure below the applicable threshold in paragraph (c)(1) or (2) of this section.
- (1) Storage vessels with a capacity greater than or equal to 40,000 gal (151 m³) containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 0.5 psia (3.4 kPa).
 - (2) Storage vessels with a capacity greater than or equal to 20,000 gal (75.7 m³) but less than 40,000 gal (151 m³) containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 1.5 psia (10.3 kPa).
- (d) Storage vessels that are affected facilities according to paragraph (a) of this section for which construction or reconstruction commenced on or before October 4, 2023, (“existing storage vessels”) and are modified after October 4, 2023, are subject to the standards in § 60.112c and the corresponding requirements in §§ 60.113c through 60.116c as modified sources any time they meet the specifications in either paragraph (d)(1) or (2) of this section.
- (1) For an existing storage vessel with a capacity greater than or equal to 40,000 gal (151 m³), containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 0.5 psia (3.4 kPa).
 - (2) For an existing storage vessel with a capacity greater than or equal to 20,000 gal (75.7 m³) but less than 40,000 gal (151 m³), containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 1.5 psia (10.3 kPa).
- (e) For the purposes of this subpart,
- (1) The phrase “change in the method of operation of, an existing facility which increases the amount of any air pollutant” in the definition of modification in § 60.2 or “operational change to an existing facility which results in an increase in the emission rate to the atmosphere of any pollutant to which a standard applies” in § 60.14(a) means a change in operation occurs if the storage vessel is used to store a VOL that has a greater maximum true vapor pressure than all VOL historically stored or permitted; and
 - (2) The exemption in § 60.14(e)(4) regarding alternative fuel or raw material does not apply to storage vessels.

- (f) Storage vessels that are affected facilities according to paragraph (a) of this section and do not meet the criteria in either paragraph (c)(1), (c)(2), (d)(1), or (d)(2) of this section are subject to the requirements in § 60.113c(d), if applicable, and § 60.115c(b).
- (g) All standards including emission limitations shall apply at all times, including periods of startup, shutdown and malfunction. As provided in § 60.11(f), this paragraph (g) supersedes the exemptions for periods of startup, shutdown, and malfunction in subpart A of this part.
- (h) Owners or operators may choose to comply with the provisions of this subpart to demonstrate compliance with subparts K, Ka, and Kb of this part. Compliance with the provisions of this subpart, including all control requirements, recordkeeping, and reporting requirements, will constitute compliance with the applicable storage vessel provisions in subparts K, Ka, and Kb.
- (i) Owners or operators may choose to comply with this subpart to demonstrate compliance with 40 CFR part 63, subpart WW for storage vessels equipped with an internal or external floating roof that is subject to this subpart and 40 CFR part 63, subpart WW. Compliance with this subpart, including all floating roof requirements, recordkeeping, and reporting requirements, will constitute compliance with the applicable storage vessel provisions in 40 CFR part 63, subpart WW.

§ 60.111c Definitions.

Terms used in this subpart are defined in the Act, in subpart A of this part, or in this section as follows:

Access hatch means an opening in the roof with a vertical well and a cover attached to it. Access hatch provides passage for workers and materials through the roof for construction or maintenance.

Closed vent system means a system that is not open to the atmosphere and is composed of piping, ductwork, connections, and, if necessary, flow inducing devices that transport gas or vapor from an emission point to a control device. Closed vent system does not include the vapor collection system that is part of any tank truck or railcar.

Condensate means hydrocarbon liquid separated from natural gas that condenses due to changes in the temperature or pressure, or both, and remains liquid at standard conditions.

Custody transfer means the transfer of produced petroleum and/or condensate, after processing and/or treatment in the producing operations, from storage vessels or automatic transfer facilities to pipelines or any other forms of transportation.

Degassing means the process of removing VOL vapors from a storage vessel during, or in preparation of, cleaning or when taking the storage vessel out of service for inspection, repair, or other reason.

Enclosed combustion device means a thermal combustion device used to mix and ignite fuel, air pollutants, and air to provide a flame to heat and oxidize air pollutants and that emits the oxidized pollutants through a conveyance suitable to conduct a performance test. An *enclosed combustion device* may have recovery heat to preheat combustion air, but its primary purpose is for emission control and not to produce useful heat. *Enclosed combustion devices* include, but are not limited to, thermal oxidizers and incinerators. For the purpose of this subpart, process heaters and boilers are not *enclosed combustion devices*.

External floating roof means a pontoon-type or double-deck type cover that rests on the liquid surface in a storage vessel without a fixed roof.

Fill means the introduction of VOL into a storage vessel but not necessarily to complete capacity.

Flare means a thermal combustion device using an open or shrouded flame (without full enclosure) such that the pollutants are not emitted through a conveyance suitable to conduct a performance test.

Fuel gas system means the offsite and onsite piping and control system that gathers gaseous stream(s) generated by onsite operations, may blend them with other sources of gas, and transports the gaseous stream for use as fuel gas in combustion devices, or in- process combustion equipment such as furnaces and gas turbines, either singly or in combination.

Gasoline service station means any site where gasoline is dispensed to motor vehicle fuel tanks from stationary storage vessels.

Gauge float means a device that is used to indicate the level of liquid within the storage vessel. The float rests on the liquid surface and is housed inside a well that is closed by a removable cover.

Gauge hatch/sample port/sample well means an opening in the roof that provides access for gauging or sampling. A gauge hatch is usually equipped with a closing cover or a funnel and slit-fabric seal to cover the opening.

Internal floating roof means a floating roof located in a storage vessel with a fixed roof. For the purposes of this subpart, an external floating roof located in a storage vessel to which a fixed roof has been added is considered to be an internal floating roof.

Liquid-mounted primary seal means a liquid or foam-filled seal mounted in continuous contact with the liquid between the wall of the storage vessel and the floating roof around the entire circumference of the storage vessel.

Maximum true vapor pressure means the equilibrium partial pressure exerted by the volatile organic compounds (as defined in 40 CFR 51.100) in the stored VOL at the temperature equal to the highest calendar-month average of the VOL storage temperature for VOLs stored above or below the ambient temperature or at the local maximum monthly average temperature as reported by the National Weather Service for VOLs stored at the ambient temperature, as determined using the procedures specified in § 60.113c(d).

Mechanical shoe primary seal means a metal sheet (the shoe) held vertically against the wall of the storage vessel by springs or weighted levels and is connected by braces to the floating roof. A flexible coated fabric (the envelope) spans the annular space between the metal sheet and the floating roof.

Petroleum means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

Petroleum liquids means petroleum, condensate, and any finished or intermediate products manufactured in a petroleum refinery.

Pressure release means the emission of materials resulting from the system pressure being greater than the set pressure of the pressure relief device or resulting from vacuum breaking device failing to close prior to the system reaching atmospheric pressure. This release can be one release or a series of releases over a short time period.

Pressure relief device means a valve, rupture disk, or similar device used only to release an unplanned, nonroutine discharge of gas from process equipment in order to avoid safety hazards or equipment damage. Devices with low opening pressures must be monitored as bypass lines. A pressure relief device discharge can result from an operator error, a malfunction such as a power failure or equipment failure, or other unexpected cause. Such devices include conventional, spring-actuated relief valves, balanced bellows relief valves, pilot-operated relief valves, rupture disks, and breaking, buckling, or shearing pin devices. Devices that are actuated only by a vacuum are not pressure relief devices. If a device has both a

pressure relief function and a vacuum breaking function, such as a conservation vent, the portion of the conservation vent that acts to relieve pressure is considered a pressure relief device and the portion of the conservation vent that acts to relieve vacuum is a vacuum breaking device and not a pressure relief device.

Process tank means a tank that is used within a process (including a solvent or raw material recovery process) to collect material discharged from a feedstock storage vessel or equipment within the process before the material is transferred to other equipment within the process, to a product or by-product storage vessel, or to a vessel used to store recovered solvent or raw material. In many process tanks, unit operations such as reactions and blending are conducted. Other process tanks, such as surge control vessels and bottoms receivers, however, may not involve unit operations.

Reid vapor pressure means the absolute vapor pressure of volatile crude oil and volatile nonviscous petroleum liquids except liquified petroleum gases.

Rim-mounted secondary seal means a secondary seal mounted on the rim of the floating roof of a storage vessel and forms continuous seal from the rim of the floating roof to the wall of the storage vessel.

Rim seal system means a primary seal or a primary and secondary seal, which is mounted above the primary seal, and is attached to the deck perimeter and contacts the storage vessel wall.

Rim vent means a device consisting of a weighted pallet that rests on a valve seat. Rim vents are used to release any excess pressure or vacuum present in the vapor pocket between the seal and the rim area of a floating roof storage vessel.

Routed to a process or route to a process means the emissions are conveyed by hardpiping or a closed vent system to any enclosed portion of a process unit where the emissions are predominately recycled and/or consumed in the same manner as a material that fulfills the same function in the process; and/or transformed by chemical reaction into materials that are not volatile organic liquids; and/or incorporated into a product; and/or recovered.

Storage vessel means each tank, reservoir, or container used for the storage of volatile organic liquids but does not include:

- (1) Frames, housing, auxiliary supports, or other components that are not directly involved in the containment of liquids or vapors;
- (2) Subsurface caverns or porous rock reservoirs; or
- (3) Process tanks.

Vacuum breaker/automatic bleeder vent means a device used to equalize the pressure of the vapor space across the deck of a floating roof as the floating roof is either being landed on or floated off its roof supports. A vacuum breaker/automatic bleeder vent consists of a well with a cover. The cover is designed to open as the floating roof is landed. Opening of the cover may be accomplished by mechanisms such as leg actuation or pressure actuation.

Vacuum breaking device means a device on a fixed roof of a storage vessel used to prevent mechanical failure of the storage vessel due to vacuum created as liquids are withdrawn from the storage vessel. If a device has both a pressure relief function and a vacuum breaking function, such as a conservation vent, the portion of the conservation vent that acts to relieve vacuum is considered a vacuum breaking device and the portion of the conservation vent that acts to relieve excess pressure is a pressure relief device and not a vacuum breaking device.

Volatile organic liquid (VOL) means any organic liquid which can emit volatile organic compounds (as defined in 40 CFR 51.100) into the atmosphere.

Waste means any liquid resulting from industrial, commercial, mining, or agricultural operations, or from community activities that is discarded or is being accumulated, stored, or physically, chemically, or biologically treated prior to being discarded or recycled.

§ 60.112c Standard for volatile organic compounds (VOC).

- (a) **General storage vessel control requirements.** You must equip and operate each storage vessel affected facility meeting the thresholds in § 60.110c(c)(1), (c)(2), (d)(1), or (d)(2) as specified in paragraphs (a)(1) through (4) of this section, as applicable.
- (1) For each storage vessel affected facility containing a VOL that, as stored, has a maximum true vapor pressure less than 11.1 psia (76.6 kPa), you may elect to install and operate either an internal floating roof meeting the requirements in paragraph (b) of this section, an external floating roof meeting the requirements in paragraph (c) of this section, or a closed vent system routed to a control device, fuel gas system, or process as specified in paragraph (d) of this section.
 - (2) For each storage vessel affected facility containing a VOL that, as stored, has a maximum true vapor pressure of 11.1 psia (76.6 kPa) or more, you must install and operate a closed vent system routed to a control device, fuel gas system, or process as specified in paragraph (d) of this section.
 - (3) For each storage vessel affected facility complying with the closed vent system routed to a control device, fuel gas system, or process provisions specified in paragraph (d) of this section regardless of size and for each storage vessel with a design capacity greater than or equal to 1,000,000 gal (3,790 m³) containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 1.5 psia (10.3 kPa), you must also comply with the requirements in paragraph (e) of this section.
 - (4) You must meet the applicable testing, monitoring, and inspection requirements specified in § 60.113c, recordkeeping requirements specified in § 60.115c, and reporting requirements specified in § 60.116c.
- (b) **Requirements for an internal floating roof.** You must equip and operate each internal floating roof as specified in paragraphs (b)(1) through (16) of this section, as applicable.
- (1) The internal floating roof must rest or float on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed roof. The internal floating roof must be floating on the liquid surface at all times, except during initial fill and during those intervals when the storage vessel is completely emptied or subsequently emptied and refilled. When the roof is resting on the roof supports, the process of filling, emptying, or refilling must be continuous and must be accomplished as rapidly as possible.
 - (2) Except as provided in paragraph (b)(14) of this section, each internal floating roof must be equipped with the following closure devices between the wall of the storage vessel and the edge of the internal floating roof:
 - (i) Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal.

- (ii) The primary seal must be either a mechanical shoe seal or a liquid-mounted seal. If a mechanical shoe seal is used, it must be installed so that one end of the shoe extends into the stored VOL and the other end extends a minimum vertical distance of 6 inches (15 centimeters) above the stored organic liquid surface.
 - (iii) The secondary seal must be rim-mounted.
- (3) Each opening in a noncontact internal floating roof except for vacuum breaker/automatic bleeder vents and the rim vents is to provide a projection below the liquid surface.
- (4) Vacuum breaker/automatic bleeder vents must be equipped with a gasket and are to be closed at all times, with no visible gaps, when the roof is floating. Vacuum breaker/automatic bleeder vents must be set to open only when the roof is being floated off or is being landed on the roof supports.
- (5) Rim vents must be equipped with a gasket and must be closed at all times with no visible gaps when the roof is floating. Rim vents must be set to open only when the internal floating roof is not floating or when the pressure beneath the rim seal system exceeds the manufacturer's recommended setting.
- (6) Each penetration of the internal floating roof for the purpose of sampling must be a gauge hatch/sample well. Except as specified in paragraph (b)(14) of this section, the gauge hatch/sample well must have a gasketed cover, which must be closed at all times, with no visible gaps, except when the hatch or well must be opened for access.
- (7) Each access hatch and gauge float well must be equipped with a cover that is gasketed and that is bolted or otherwise mechanically secured. The cover must be closed and must be bolted or otherwise mechanically secured at all times, with no visible gaps, except when the hatch or well must be opened for access.
- (8) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof must have a flexible fabric sleeve seal or a gasketed sliding cover.
- (9) Each penetration of the internal floating roof that allows for passage of an unslotted leg ladder or unslotted ladder/guidepole combination must have a gasketed sliding cover. The cover must be closed at all times, with no visible gaps, except when the well must be opened for access.
- (10) Each slotted guidepole must be equipped with one of the controls specified in paragraphs (b)(10)(i) through (v) of this section. The covers must be designed to be closed at all times, with no visible gaps, except when the cover must be opened for access.
 - (i) Gasketed sliding well cover, with pole sleeve. The sleeve must extend into the stored liquid.
 - (ii) Gasketed sliding well cover, with pole sleeve and pole wiper. The sleeve must extend into the stored liquid.
 - (iii) Gasketed sliding well cover, with pole float and pole wiper. The wiper or seal of the pole float must be at or above the height of the pole wiper.
 - (iv) Gasketed sliding well cover, with pole float, pole sleeve, and pole wiper. The sleeve must extend into the stored liquid. The wiper or seal of the pole float must be at or above the height of the pole wiper.

- (v) A flexible device that completely encloses the slotted guidepole and eliminates the hydrocarbon vapor emissions pathway from inside the storage vessel through the guidepole slots to the outside air; a gasketed guidepole cover at the top of the guidepole; and a gasketed sliding well cover positioned at the top of the guidepole well that seals any openings between the well cover and the guidepole (e.g., pole wiper), any openings between the well cover and any other objects that pass through the well cover, and any other openings in the top of the guidepole well.
- (11) Ladder-slotted guidepole combination wells must be equipped with a gasketed sliding well cover and a ladder sleeve. The sliding well cover must be designed to be closed at all times with no visible gaps, except when gauging or sampling.
- (12) Unslotted guidepoles must be equipped with one of the controls specified in paragraph (b)(12)(i) or (ii) of this section. The controls must be designed to be closed at all times with no visible gaps.
 - (i) A gasketed guidepole cover at the top of the guidepole; a gasketed sliding well cover; and a pole sleeve. The guidepole cover must be closed at all times, except when required to be opened for access. The gasketed sliding well cover must seal any openings between the well cover and the guidepole, any openings between the well cover and any other objects that pass through the well cover, and any other openings in the top of the guidepole well.
 - (ii) A gasketed guidepole cover at the top of the guidepole; a gasketed sliding well cover; and a pole wiper. The guidepole cover must be closed at all times, except when required to be opened for access. The gasketed sliding well cover must seal any openings between the well cover and the guidepole (e.g., pole wiper), any openings between the well cover and any other objects that pass through the well cover, and any other openings in the top of the guidepole well.
- (13) Except for leg sleeves and stub drains, each opening in the internal floating roof not specified in paragraphs (b)(4) through (12) of this section, must be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device must be opened for access. The cover or lid must be equipped with a gasket.
- (14) For each modified storage vessel as specified in § 60.110c(d) with an existing internal floating roof, you may elect to comply with the rim seal system requirements in § 60.112b(a)(1)(ii) or § 60.110b(e) instead of the requirements in paragraph (b)(2) of this section, and you may elect to comply with the gauge hatch/sample well requirements in § 60.112b(a)(1)(vii) or § 60.110b(e) instead of the requirements in paragraph (b)(6) of this section.
- (15) A system equivalent to those described in paragraphs (b)(1) through (14) of this section, as applicable, as provided in § 60.114c.
- (16) Equip, maintain, and operate each internal floating roof control system to maintain the vapor concentration above the floating roof at or below 25 percent of the lower explosive limit (LEL) on a 5-minute rolling average basis without the use of purge gas. This standard may require additional controls, such as improved seam seals, beyond those specified in paragraphs (b)(1) through (15) of this section. Compliance with this paragraph (b)(16) must be determined using the methods in § 60.113c(a)(3). Exceeding the LEL is considered an inspection failure under § 60.113c(a)(2)(i) and must be remedied as such. Any repairs made must be confirmed effective through re-monitoring of the LEL and meeting the limits in this paragraph (b)(16) within the timeframes specified in § 60.113c(a)(2)(i).

- (c) **Requirements for an external floating roof.** You must equip and operate each external floating roof as specified in paragraphs (c)(1) through (4) of this section.
- (1) The roof must be floating on the liquid at all times (i.e., off the roof supports) except during initial fill until the roof is lifted off roof supports and when the storage vessel is completely emptied or subsequently emptied and refilled. The process of filling, emptying, or refilling when the roof is resting on the roof supports must be continuous and must be accomplished as rapidly as possible.
 - (2) Each external floating roof must be equipped with a primary and secondary rim seal system as specified in paragraph (b)(2) of this section, except that if a mechanical shoe primary seal is used, it must be installed so that one end of the shoe extends into the stored VOL and the other end extends a minimum vertical distance of 24 inches (61 centimeters) above the stored organic liquid surface. The external floating roof also must have welded deck seams, and it must have deck fitting controls as specified in paragraphs (c)(2)(i) through (ix) of this section, as applicable. References to an internal floating roof in paragraph (b)(2) of this section means an external floating roof for the purposes of this paragraph (c)(2).
 - (i) Each opening in an external floating roof except for vacuum breaker/automatic bleeder vents and the rim vents is to provide a projection below the liquid surface.
 - (ii) Vacuum breaker/automatic bleeder vents must be equipped with a gasket and are to be closed at all times, with no visible gaps, when the roof is floating. Vacuum breaker/automatic bleeder vents must be set to open only when the roof is being floated off or is being landed on the roof supports.
 - (iii) Rim vents must be equipped with a gasket and must be closed at all times with no visible gaps when the roof is floating. Rim vents must be set to open only when the external floating roof is not floating or when the pressure beneath the rim seal system exceeds the manufacturer's recommended setting.
 - (iv) Each penetration of the external floating roof for the purpose of sampling must be a gauge hatch/sample well. The gauge hatch/sample well must have a gasketed cover, which must be closed at all times, with no visible gaps, except when the hatch or well must be opened for access.
 - (v) Each access hatch and gauge float well must be equipped with a cover that is gasketed and that is bolted or otherwise mechanically secured. The cover must be closed and must be bolted or otherwise mechanically secured at all times, with no visible gaps, except when the hatch or well must be opened for access.
 - (vi) Except as specified in paragraph (c)(3) of this section, if the external floating roof does not have a liquid-mounted primary seal, all guidepoles must be unslotted and must be equipped as specified in paragraph (b)(12) of this section.
 - (vii) Except as specified in paragraph (c)(3) of this section, if the external floating roof has a liquid-mounted primary seal, equip each guidepole as specified in paragraphs (c)(2)(vii)(A) and (B) of this section.
 - (A) Each slotted guidepole must be equipped as specified in paragraphs (b)(10)(ii) or (iv) of this section.
 - (B) Each unslotted guidepole must be equipped as specified in paragraph (b)(12) of this section.

- (viii) Each emergency roof drain is to be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening.
- (ix) Except for leg sleeves, each opening in the external floating roof not subject to controls specified in paragraphs (c)(2)(i) through (viii) of this section must be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap), except when the device must be opened for access. The cover or lid must be equipped with a gasket.
- (3) For each modified storage vessel as specified in § 60.110c(d) with an existing external floating roof, you may elect to comply with any of the guidepole controls specified in paragraphs (b)(10) and (12) of this section regardless of the type of primary seal used.
- (4) A system equivalent to those described in paragraphs (c)(1) through (3) of this section as provided in § 60.114c.
- (d) **Requirements for closed vent system routed to a control device, fuel gas system, or process.** You must design, install, and operate each affected storage vessel with a closed vent system that routes to a control device, fuel gas system, or process as specified in paragraphs (d)(1) through (7) of this section.
 - (1) The storage vessel must be designed and operated to be routed through a closed vent system to a control device, fuel gas system, or process at all times the storage vessel contains VOL without venting to the atmosphere through either meeting the storage vessel design requirements specified in paragraph (d)(1)(i) of this section or the vapor recovery system design requirements specified in paragraph (d)(1)(ii) of this section. Compliance with this requirement must be demonstrated according to paragraph (d)(1)(iii) of this section. Any vacuum breaking device on the storage vessel must close while the storage vessel is still under vacuum of at least -0.1 inches of water (-0.0036 psig or -0.025 kPa gauge).
 - (i) The storage vessel must be designed to operate at a gauge pressure of no less than 1 psi greater than the maximum true vapor pressure of the stored liquid and any back pressure anticipated when the storage vessel is filled at its maximum rate without venting to the atmosphere.
 - (ii) The vapor recovery system must be designed and operated to maintain the pressure in each storage vessel routed to a control device below the venting pressure of that storage vessel.
 - (iii) You must equip each pressure relief device and vacuum breaking device on a storage vessel with a device(s) or use a monitoring system that is capable of meeting the requirements in paragraphs (d)(1)(iii)(A) through (C) of this section. If all emissions from a pressure relief device are routed through a closed vent system to a control device, process, or fuel gas system, then you are not required to comply with the requirements of this paragraph (d)(1)(iii).
 - (A) Identifying the pressure release.
 - (B) Recording the time and duration of each pressure release.
 - (C) Notifying operators immediately that a pressure release is occurring. The device or monitoring system must be either specific to the pressure relief device or vacuum breaking device itself or must be associated with each storage vessel to indicate a pressure release to the atmosphere. Examples of these types of devices and systems include, but are not limited to, a rupture disk indicator, magnetic sensor, motion detector on the pressure relief valve stem, flow monitor, or pressure monitor.

- (2) Except for closed vent systems operated and maintained under negative pressure, each closed vent system must meet the requirements specified in paragraphs (d)(2)(i) through (iii) of this section.
 - (i) The closed vent system must be designed to collect all VOC vapors and gases discharged from the storage vessel and operated with no detectable emissions as indicated by an instrument reading of less than 500 parts per million by volume (ppmv) above background, as determined using Method 21 of appendix A-7 to this part as specified in § 60.113c(c)(2) and (3), and as determined by observations for visible, audible, and olfactory indications of leaks. Visible, audible, and olfactory inspections must be performed quarterly and Method 21 of appendix A-7 instrument monitoring must be conducted at least annually.
 - (ii) Except for pressure relief devices and except for open-ended valves or lines that use a cap, blind flange, plug, or second valve and follow the requirements specified in § 60.482-6(a)(2), (b), and (c) or follow requirements codified in another regulation that are the same as § 60.482-6(a)(2), (b), and (c), you must comply with the provisions of either paragraph (d)(2)(ii)(A) or (B) of this section for each closed vent system that contains bypass lines that could divert a vent stream to the atmosphere.
 - (A) Properly install, maintain, and operate a flow indicator that is capable of taking readings every 15 minutes. Install the flow indicator at the entrance to any bypass line.
 - (B) Secure the bypass line valve in the non-diverting position with a car-seal or a lock-and-key type configuration.
 - (iii) You must equip each pressure relief device on a closed vent system with a device(s) or use a monitoring system that is capable of meeting the requirements in paragraphs (d)(2)(iii)(A) through (C) of this section. If all releases and potential leaks from a pressure relief device are routed through a closed vent system to a control device, process, or fuel gas system, then you are not required to comply with the requirements of this paragraph (d)(2)(iii).
 - (A) Identifying the pressure release.
 - (B) Recording the time and duration of each pressure release.
 - (C) Notifying operators immediately that a pressure release is occurring. The device or monitoring system must be either specific to the pressure relief device itself or must be associated with the process system or piping, sufficient to indicate a pressure release to the atmosphere. Examples of these types of devices and systems include, but are not limited to, a rupture disk indicator, magnetic sensor, motion detector on the pressure relief valve stem, flow monitor, or pressure monitor.
- (3) If you route emissions from a storage vessel to a control device, the control device must be designed and operated to reduce inlet VOC emissions by 98 percent or greater. If a flare is used as the control device or if an enclosed combustion device is used for which you elect to comply with the flare operating limits, you must meet the specifications described in paragraph (d)(5) of this section. The control device must be operated at all times when emissions from an affected storage vessel are routed to it except as provided in paragraph (d)(7) of this section.
- (4) A system equivalent to those described in paragraphs (d)(1) through (3) of this section as provided in § 60.114c.

- (5) If you route from a storage vessel to a flare or enclosed combustion device for which you elect to comply with these flare operating limits, you must meet all applicable requirements specified in 40 CFR 63.670(b) through (g) and (i) through (n) except as provided in paragraphs (d)(5)(i) through (v) of this section.
 - (i) For the purpose of this subpart,
 - (A) The term “regulated materials” refers to “vapors from a storage vessel affected facility”;
 - (B) The term “pilot flame” means “pilot flame or flare flame”;
 - (C) The terms “petroleum refinery” and “refinery” mean “storage vessel affected facility”.
 - (ii) For visible emissions, use the following text instead of 40 CFR 63.670(c): The owner or operator shall operate with no visible emissions, except for periods not to exceed a total of five (5) minutes during any two (2) consecutive hours, when regulated material is routed to the flare. You must monitor for visible emissions from the flare as specified in § 60.113c(c)(1)(iv)(A).
 - (iii) The phrase “and the flare vent gas flow rate is less than the smokeless design capacity of the flare” in 40 CFR 63.670(d) for flare tip velocity requirements does not apply.
- (6) If you route emissions from a storage vessel to a fuel gas system or process, you must meet the requirements in paragraphs (d)(6)(i) through (iv) of this section, as applicable.
 - (i) The fuel gas system or process must be operating at all times when emissions from an affected storage vessel are routed to it.
 - (ii) If all emissions are routed to a process, the VOL in the emissions must meet one or more of the conditions specified in paragraphs (d)(6)(ii)(A) through (D) of this section and you must comply with the compliance demonstration requirements in paragraph (d)(6)(iii) of this section.
 - (A) Recycled and/or consumed in the same manner as a material that fulfills the same function in that process.
 - (B) Transformed by chemical reaction into materials that are not regulated materials.
 - (C) Incorporated into a product.
 - (D) Recovered.
 - (iii) To demonstrate compliance with paragraph (d)(6)(ii) of this section for an affected storage vessel, you must prepare a design evaluation (or engineering assessment) that demonstrates the extent to which one or more of the conditions specified in paragraphs (d)(6)(ii)(A) through (D) of this section are being met.
 - (iv) If emissions from an affected storage vessel are routed to a fuel gas system, you must submit the statement of connection for fuel gas systems specified in § 60.116c(a)(7).
- (7) To the extent practical, routine maintenance on the control device should be conducted when the storage vessel(s) is(are) out of VOL service. If you comply with all the provisions in paragraphs (d)(7)(i) through (iv) of this section, you may conduct routine maintenance on a control device while one or more storage vessels vented to the control device are storing a VOL.
 - (i) The storage vessel(s) storing VOL must be designed to operate above the maximum true vapor pressure of the stored VOL according to paragraph (d)(1)(i) of this section.

- (ii) The control device must be isolated from the storage vessel(s) using valves(s), blind flange(s), or similar device(s) at the control device or in the closed vent system as near as practical to the control device. You may purge the control device and downstream portion of the closed vent system to remove potentially explosive vapors and create a safe work environment only after the control device is isolated from the storage vessel(s).
 - (iii) You must continue to comply with the bypass and pressure relief device monitoring requirements in paragraphs (d)(1)(iii), (d)(2)(ii), and (d)(2)(iii) of this section and their associated recordkeeping and reporting requirements. If there are multiple storage vessels connected to the closed vent system with significantly different pressure design limits, you must isolate individual storage vessels to prevent venting during planned maintenance. Compliance with this paragraph (d)(7)(iii) may limit VOL addition to the storage vessel. If VOL is added to the storage vessel, there must be an approximately equivalent withdrawal of VOL such that the liquid level does not rise sufficiently to increase the pressure in the storage vessel to cause a pressure release from the storage vessel or the closed vent system.
 - (iv) During this routine maintenance period the affected storage vessels cannot be actively degassed. If the storage vessel is to be emptied and actively degassed, the planned maintenance activity must be conducted when the storage vessel is out of VOL service.
- (e) **Requirements for storage vessel degassing.** For each storage vessel meeting the specifications in paragraph (a)(3) of this section, you must meet the requirements in paragraphs (e)(1) through (3) of this section during emptying and degassing of a storage vessel until the vapor space concentration in the storage vessel is less than 10 percent of the LEL or, for nonflammable liquids, 5,000 ppmv as methane. You must determine the LEL or methane concentration using process instrumentation or a portable measurement device and follow procedures for calibration and maintenance according to manufacturer's specifications. You must check instrument calibration and check the instrumental offset response each day the instrument is used and prior to discontinuing controlled degassing to confirm the accuracy of the instrument's readings.
- (1) Remove liquids from the storage vessel as much as practicable. Chemicals or a diluent such as a distillate fuel may be introduced into the storage vessel for the purpose of reducing vapor concentration before or during active degassing.
 - (2) Comply with one of the following:
 - (i) Reduce total VOC emissions by venting emissions through a closed vent system to a flare or enclosed combustion device for which you elect to comply with the flare provisions and meet the requirements specified in paragraph (d)(5) of this section.
 - (ii) Reduce total VOC emissions by 98 weight percent by venting emissions through a closed vent system to any combination of non-flare control devices.
 - (iii) Reduce total VOC emissions by routing emissions to a fuel gas system or process and meet the requirements specified in paragraph (d)(6) of this section.
 - (3) For floating roof storage vessels, the storage vessel may be opened to set up equipment (e.g., making connections to a temporary control device) for the shutdown operations but must not be actively degassed during this time period.

§ 60.113c Testing, monitoring, and inspection procedures.

For each storage vessel subject to the provision in § 60.112c(a), you must meet the requirements of paragraph (a) of this section if you installed an internal floating roof, paragraph (b) of this section if you installed an external floating roof, or paragraph (c) of this section if you route emissions through a closed vent system to a control device, fuel gas system, or process. You must also meet the applicable requirements of paragraph (d) of this section.

- (a) **Requirements for an internal floating roof.** After installing the control equipment for an internal floating roof to meet the provisions in § 60.112c(b), you must meet the requirements specified in paragraphs (a)(1) through (5) of this section.
 - (1) Visually inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), and deck fittings prior to filling the storage vessel with VOL. Any of the conditions described in paragraphs (a)(1)(i) through (iii) of this section constitutes inspection failure. You must repair the items before filling the storage vessel.
 - (i) Holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric;
 - (ii) Defects in the internal floating roof; or
 - (iii) A rim seal or deck fitting control not meeting the applicable requirements in § 60.112c(b)(2) through (13).
 - (2) Inspect the internal floating roof as specified in paragraph (a)(2)(i) of this section at least once every 12 calendar months after initial fill, and inspect the internal floating roof as specified in paragraph (a)(2)(ii) of this section each time the storage vessel is emptied and degassed, or at a frequency no greater than every 120 calendar months, whichever occurs first.
 - (i) Visually inspect the internal floating roof, the primary seal, the secondary seal (if one is service), and deck fittings, through openings in the fixed roof and conduct LEL monitoring. Any of the conditions described in paragraphs (a)(2)(i)(A) through (F) of this section constitutes inspection failure. Identification of holes or tears in the rim seal is required only for the seal that is visible from the top of the storage vessel. You must repair the items or empty and remove the storage vessel from service within 45 days. If a failure that is detected during inspections required in this paragraph (a)(2)(i) cannot be repaired within 45 days and if the storage vessel cannot be emptied within 45 days, you may request a 30-day extension from the Administrator. Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions the company will take that will assure that the control equipment will be repaired or the storage vessel will be emptied as soon as possible.
 - (A) Stored liquid on the floating roof;
 - (B) The internal floating roof is not resting on the surface of the VOL inside the storage vessel;
 - (C) Holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric;
 - (D) Defects in the internal floating roof;
 - (E) A rim seal or deck fitting control not meeting the applicable requirements in § 60.112c(b)(2) through (13); or
 - (F) The concentration measured according to paragraph (a)(3) of this section exceeds 25 percent of the LEL.

- (ii) Visually inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes, and sleeve seals (if any). Any of the conditions described in paragraphs (a)(2)(ii)(A) through (C) of this section constitutes an inspection failure. You must repair the items as necessary so that none of the conditions specified in this paragraph (a)(2)(ii) exist before refilling the storage vessel with VOL. The inspection may be performed entirely from the top side of the floating roof, as long as there is visual access to all deck fittings and rim seal system specified in § 60.112c(b). You must repair the items or empty and remove the storage vessel from service within 45 days. If a failure that is detected during inspections required in this paragraph (a)(2)(ii) cannot be repaired within 45 days and if the storage vessel cannot be emptied within 45 days, you may request a 30-day extension from the Administrator. Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions the company will take that will assure that the control equipment will be repaired or the storage vessel will be emptied as soon as possible.
 - (A) Defects in the internal floating roof;
 - (B) Holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric; or
 - (C) A rim seal or deck fitting control not meeting the applicable requirements in § 60.112c(b)(2) through (13).
- (3) Compliance with the LEL limit for internal floating roof storage vessels at § 60.112c(b)(16) must be determined based on the procedures specified in paragraphs (a)(3)(i) through (v) of this section. If tubing is necessary to obtain the measurements, the tubing must be non-crimping and made of Teflon or other inert material.
 - (i) You must conduct LEL monitoring as part of the annual inspection specified in paragraph (a)(2)(i) of this section and at other times upon request by the Administrator. If the measurement cannot be performed during the visual inspection due to wind speeds exceeding those specified in paragraph (a)(3)(iii)(C) of this section, the measurement must be performed within 30 days of the visual inspection. If there is an exceedance of the LEL limit, you must re-monitor in accordance with § 60.112c(b)(16) within 30 days after repair or placing the storage vessel back in service.
 - (ii) The calibration of the LEL meter must be checked per manufacturer specifications immediately before and after the measurements as specified in paragraphs (a)(3)(ii)(A) and (B) of this section. If tubing will be used for the measurements, the tubing must be attached during calibration so that the calibration gas travels through the entire measurement system.
 - (A) Conduct the span check using a calibration gas recommended by the LEL meter manufacturer. The calibration gas must contain a single hydrocarbon at a concentration of the vapor corresponding to 50 percent of the LEL (e.g., 2.50 percent by volume when using methane as the calibration gas). The vendor must provide a Certificate of Analysis for the gas, and the certified concentration must be within ± 2 percent (e.g., 2.45 percent-2.55 percent by volume when using methane as the calibration gas). The LEL span response must be between 49 percent and 51 percent. If the span check prior to the measurements does not meet this requirement, the LEL meter must be recalibrated or replaced. If the span check after the measurements does not meet this requirement, the LEL meter must be recalibrated or replaced, and the measurements must be repeated.

- (B) Check the instrumental offset response using a certified compressed gas cylinder of zero air or an ambient environment that is free of organic compounds. The pre-measurement instrumental offset response must be 0 percent LEL. If the LEL meter does not meet this requirement, the LEL meter must be recalibrated or replaced.
- (iii) Conduct the monitoring measurements as specified in paragraphs (a)(3)(iii)(A) through (D) of this section.
 - (A) Measurements of the vapors within the internal floating roof storage vessel must be collected no more than 3 feet above the internal floating roof.
 - (B) Measurements must be taken for a minimum of 20 minutes, logging the measurements at least once every 15 seconds, or until one 5-minute average as determined according to paragraph (a)(3)(v)(B) of this section exceeds the limit specified in § 60.112c(b)(16).
 - (C) Measurements shall be taken when the wind speed at the top of the storage vessel is 5 mph or less to the extent practicable, but in no case shall measurements be taken when the sustained wind speed at top of storage vessel is greater than the annual average wind speed at the site or 15 mph, whichever is less.
 - (D) Measurements should be conducted when the internal floating roof is floating with limited product movement (limited filling or emptying of the storage vessel).
- (iv) To determine the actual concentration of the vapor within the storage vessel, the percent of the LEL "as the calibration gas" must be corrected according to one of the procedures in paragraph (a)(3)(iv)(A) or (B) of this section. Alternatively, if the LEL meter used has correction factors that can be selected from the meter's program, you may enable this feature to automatically apply one of the correction factors in paragraph (a)(3)(iv)(A) or (B) of this section.
 - (A) Multiply the measurement by the published vapor correction factor for the specific LEL meter, stored VOL, and calibration gas used; or
 - (B) If there is no published correction factor for the specific LEL meter used and the vapors of the stored VOL, multiply the measurement by the published correction factor for butane as a surrogate for determining the LEL of the vapors of the stored VOL. The correction factor must correspond to the calibration gas used.
- (v) Use the calculation procedures in paragraphs (a)(3)(v)(A) through (C) of this section to determine compliance with the LEL limit.
 - (A) For each minute while measurements are being taken, determine the 1-minute average reading as the arithmetic average of the corrected individual measurements (taken at least once every 15 seconds) during the minute.
 - (B) Starting with the end of the fifth minute of data, calculate a 5-minute rolling average as the arithmetic average of the previous five 1-minute readings determined under paragraph (a)(3)(v)(A) of this section. Determine a new 5-minute average reading for every subsequent 1-minute reading.
 - (C) Each 5-minute rolling average must meet the LEL limit specified in § 60.112c(b)(16).
- (4) Notify the Administrator as specified in § 60.116c(b) at least 30 days prior to the inspection of each storage vessel for which an inspection is required by paragraph (a)(1) or (a)(2)(ii) of this section to afford the Administrator the opportunity to have an observer present.

(5) You must equip each affected storage vessel that has an internal floating roof with an alarm system that provides a visual or audible signal that alerts the operator when the internal floating roof is approaching the landed height and that provides a separate visual or audible signal to alert the operator when the roof has landed. The roof is considered landed when the floating roof first rests on supports or when the vacuum breaker/automatic bleeder vent begins to open, whichever is first (for example, when using a leg-actuated vent that triggers the vent prior to resting on the roof supports).

(b) **Requirements for an external floating roof.** After installing the control equipment for an external floating roof to meet the provisions in § 60.112c(c), you must inspect the external floating roof according to the specifications in paragraphs (b)(1) through (8) of this section.

(1) Determine the gap areas and maximum gap widths, between the primary seal and the wall of the storage vessel and between the secondary seal and the wall of the storage vessel according to the frequency provided in paragraphs (b)(1)(i) and (ii) of this section. You must visually inspect all roof fittings to ensure that covers are closed and gasketed with no visible gaps and that there are no tears in sleeves, wipers, or similar controls used for a given fitting during each measurement of gaps as required under this paragraph (b)(1).

(i) Measurements of gaps between the storage vessel wall and the primary seal (seal gaps) must be performed during the hydrostatic testing of the storage vessel or within 60 days of the initial fill with VOL and at least once every 60 calendar months thereafter.

(ii) Measurements of gaps between the storage vessel wall and the secondary seal must be performed within 60 days of the initial fill with VOL and at least once every 12 calendar months thereafter.

(iii) If any source ceases to store VOL for a period of 12 calendar months or more, subsequent introduction of VOL into the storage vessel must be considered an initial fill for the purposes of paragraphs (b)(1)(i) and (b)(1)(ii) of this section.

(2) Determine gap widths and areas in the primary and secondary seals individually by the following procedures:

(i) Measure seal gaps, if any, at one or more floating roof levels when the roof is floating off the roof supports.

(ii) Measure seal gaps around the entire circumference of the storage vessel in each place where a 0.125-inch (0.32-centimeter (cm)) diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the wall of the storage vessel and measure the circumferential distance of each such location.

(iii) The total surface area of each gap described in paragraph (b)(2)(ii) of this section must be determined by using probes of various widths to measure accurately the actual distance from the storage vessel wall to the seal and multiplying each such width by its respective circumferential distance.

(3) Add the gap surface area of each gap location for the primary seal and the secondary seal individually and divide the sum for each seal by the nominal diameter of the storage vessel and compare each ratio to the respective standards in paragraph (b)(4) of this section.

- (4) Except as provided in paragraph (b)(5) of this section, make necessary repairs or empty the storage vessel within 45 days of identification in any inspection failure as specified in paragraphs (b)(4)(i) through (iii) of this section.
 - (i) For primary seals, any deviation of the requirements in paragraphs (b)(4)(i)(A) through (D) of this section is an inspection failure.
 - (A) The accumulated area of gaps between the storage vessel wall and the mechanical shoe or liquid-mounted primary seal must not exceed 10 square inches (in²) per foot of storage vessel diameter (212 square centimeters (cm²) per meter of storage vessel diameter).
 - (B) The maximum width of any portion of any gap must not exceed 1.5 inches (3.81 cm).
 - (C) If a mechanical shoe seal is used, one end of the mechanical shoe is to extend into the stored liquid, and the other end is to extend a minimum vertical distance of 2 feet (61 cm) above the stored liquid surface.
 - (D) There are to be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope.
 - (ii) For secondary seals, any deviation of the requirements in paragraphs (b)(4)(ii)(A) through (D) of this section is an inspection failure.
 - (A) The secondary seal is to be installed above the primary seal so that it completely covers the space between the roof edge and the storage vessel wall except for allowed gaps as provided in paragraphs (b)(4)(ii)(B) and (C) of this section.
 - (B) The accumulated area of gaps between the storage vessel wall and the secondary seal must not exceed 1 in² per foot (21.2 cm² per meter) of storage vessel diameter.
 - (C) The maximum width of any portion of any gap must not exceed 0.5 inches (1.27 cm).
 - (D) There are to be no holes, tears, or other openings in the seal or seal fabric.
 - (iii) For roof fittings (e.g., vacuum breaker/automatic bleeder vents and rim vents, gauge hatch/sample wells, access hatches, guidepoles, ladders, and emergency roof drains), any deviation of the requirements in paragraphs (b)(4)(iii)(A) through (D) of this section is an inspection failure.
 - (A) Each opening in an external floating roof except for vacuum breaker/automatic bleeder vents and the rim vents provides a projection below the liquid surface.
 - (B) Vacuum breaker/automatic bleeder vents and rim vents are equipped with a gasket and are closed with no visible gaps when the roof is floating.
 - (C) The gauge hatch/sample well, access hatch, and gauge float must have a gasketed cover and closed with no visible gaps.
 - (D) There are to be no tears or visible defects of sleeves, wipers, or fabric covers used to control emissions from a roof fitting.
- (5) If a failure that is detected as specified in paragraph (b)(4) of this section cannot be repaired within 45 days and if the storage vessel cannot be emptied within 45 days, you may request a 30-day extension from the Administrator. Such extension request must include a demonstration of unavailability of alternate storage capacity and a specification of a schedule that will assure that the control equipment will be repaired or the storage vessel will be emptied as soon as possible.

- (6) Notify the Administrator, as specified in § 60.116c(b)(2), 30 days in advance of any gap measurements required by paragraph (b)(1) of this section to afford the Administrator the opportunity to have an observer present.
 - (7) Visually inspect the external floating roof, primary seal, secondary seal, and fittings each time the vessel is emptied and degassed.
 - (i) If the external floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, the secondary seal has holes, tears, or other openings in the seal or the seal fabric, covers have visible openings or missing or torn gaskets, or there are tears or other visible defects in flexible covers, sleeves, wipers, or other fitting controls, you must repair the items as necessary so that none of the conditions specified in this paragraph (b)(7)(i) exist before filling or refilling the storage vessel with VOL.
 - (ii) For each inspection required by paragraph (b)(7) of this section, notify the Administrator as specified in § 60.116c(b)(1) at least 30 days prior to the inspection of each storage vessel to afford the Administrator the opportunity to inspect the storage vessel.
 - (8) You must equip each affected storage vessel that has an external floating roof with an alarm system that provides a visual or audible signal that alerts the operator when the external floating roof is approaching the landed height and that provides a separate visual or audible signal to alert the operator when the roof has landed. The roof is considered landed when the floating roof first rests on supports or when the vacuum breaker/automatic bleeder vent begins to open, whichever is first (for example, when using a leg-actuated vent that triggers the vent prior to resting on the roof supports).
- (c) **Requirements for closed vent systems routed to a control device, fuel gas system, or process.** For each source that is equipped with a closed vent system and routes to a control device, fuel gas system, or process to meet the requirements in § 60.112c(d), you must conduct performance testing and monitoring of the control device as specified in paragraph (c)(1) of this section, conduct monitoring and inspections of the closed vent system as specified in paragraph (c)(2) of this section, repair leaks as specified in paragraph (c)(3) of this section, and develop a monitoring plan as specified in paragraph (c)(4) of this section.
- (1) For each control device used to meet the requirements in § 60.112c(d), you must comply with the requirements in paragraphs (c)(1)(i) through (iv) of this section, as applicable.
 - (i) For each enclosed combustion device or flare, you must install, calibrate, maintain, and operate a backpressure regulator valve calibrated to open at the minimum pressure set point corresponding to the minimum inlet gas flow rate. The set point must be consistent with manufacturer specifications for minimum flow or pressure and must be supported by an engineering evaluation. At least annually, you must confirm that the backpressure regulator valve set point is correct and consistent with the engineering evaluation and manufacturer specifications and that the valve fully closes when not in the open position.
 - (ii) For each control device other than a flare, except as specified in paragraph (c)(1)(iii) of this section, you must conduct a performance test as specified in paragraphs (c)(1)(ii)(A) through (E) of this section not later than 180 days after becoming subject to § 60.112c(d). You must conduct subsequent performance tests within 60 calendar months after each previous performance test. Submit the results of all performance tests following the procedures in § 60.116c(e).

- (A) Each performance test must demonstrate that the control device achieves greater than or equal to the required control device performance level specified in § 60.112c(d)(3). Performance tests must be conducted under such conditions as the Administrator specifies based on representative performance of the affected source for the period being tested. You may not conduct performance tests during periods of malfunction. You must record the process information that is necessary to document operating conditions during the test and include in such record an explanation to support that such conditions represent the entire range of normal operation, including operational conditions for maximum emissions if such emissions are not expected during maximum production. You must make available to the Administrator such records as may be necessary to determine the conditions of performance tests.
- (B) You must conduct a minimum of three test runs. Each test run must be at least 1 hour long.
- (C) The following methods in appendix A to this part, except as provided in § 60.8(b), must be used as reference methods to determine compliance with the percent reduction requirement.
- (1) Method 1 or 1A of appendix A-1 to this part, as appropriate, for selection of the sampling sites. Sampling sites must be located at the inlet of the first control device and at the outlet of the final control device to determine compliance with a control device percent reduction requirement.
- (2) Method 2, 2A, 2C, or 2D of appendix A-1 to this part, as appropriate to determine the gas volumetric flow rate.
- (3) Method 25A of appendix A-7 to this part. Use propane as the calibration gas. You must use Method 4 of appendix A-3 to this part to convert the Method 25A of appendix A-7 results to a dry basis.
- (D) You must use the procedures in paragraphs (c)(1)(ii)(D)(1) and (2) of this section to calculate percent reduction efficiency.
- (1) You must compute the mass rate of TOC using the following equations:

$$E_i = K_2 C_i M_p Q_i$$

$$E_o = K_2 C_o M_p Q_o$$

Equations 1 and 2 to Paragraph (c)(1)(ii)(D)(1)

Where:

E_i , E_o = Mass rate of TOC at the inlet and outlet of the control device, respectively, dry basis, kilograms per hour.

K_2 = Constant, 2.494×10^{-6} (parts per million) (gram-mole per standard cubic meter) (kilogram/gram) (minute/hour), where standard temperature (gram-mole per standard cubic meter) is 20 degrees Celsius.

C_i , C_o = Concentration of TOC, as propane, of the gas stream as measured by Method 25A of appendix A-7 to this part at the inlet and outlet of the control device, respectively, dry basis, parts per million by volume.

M_p = Molecular weight of propane, 44.1 gram/gram-mole.

Q_i, Q_o = Flowrate of gas stream at the inlet and outlet of the control device, respectively, dry standard cubic meter per minute.

(2) You must calculate the percent reduction in TOC as follows:

$$R_{cd} = \frac{E_i - E_o}{E_i} \times 100\%$$

Equation 3 to Paragraph (c)(1)(ii)(D)(2)

Where:

R_{cd} = Control efficiency of control device, percent.

E_i = Mass rate of TOC at the inlet to the control device as calculated under paragraph (c)(1)(ii)(D)(1) of this section, kilograms per hour.

E_o = Mass rate of TOC at the outlet of the control device, as calculated under paragraph (c)(1)(ii)(D)(1) of this section, kilograms per hour.

(E) Except as provided in paragraph (c)(1)(ii)(E)(5) of this section, you must establish the applicable operating parameter limit as specified in paragraphs (c)(1)(ii)(E)(1) through (3) of this section by calculating the value(s) as the arithmetic average of operating parameter measurements recorded during the three test runs conducted for the most recent performance test (the average of the test run averages). You may operate outside of the established operating parameter limit(s) during subsequent performance tests in order to establish new operating limits. You must include the updated operating limits with the performance test results submitted to the Administrator pursuant to § 60.116c(e). Upon establishment of a new operating limit, you must thereafter operate under the new operating limit. You must demonstrate compliance with your operating parameter according to paragraph (c)(1)(ii)(E)(4) of this section.

(1) If you use an enclosed combustion device, a boiler, or a process heater other than those specified in paragraph (c)(1)(iii) of this section to control emissions, you must set a minimum firebox temperature limit during the performance test. You must continuously monitor the firebox temperature with a temperature monitoring device installed in the firebox or in the ductwork immediately downstream from the firebox in a position before any substantial heat exchange occurs and equipped with a continuous recorder that records a reading at least once every 15 minutes. The monitoring device must have a minimum accuracy of ± 1 percent of the temperature being monitored in degrees Celsius, or ± 2.5 degrees Celsius, whichever value is greater.

(2) If you use a catalytic incinerator other than those specified in paragraph (c)(1)(iii) of this section to control emissions, you must set a minimum temperature limit on the temperature at the inlet of the catalyst bed and a minimum temperature limit on the temperature difference between the catalyst bed outlet and inlet. You must

continuously monitor the temperatures with a temperature monitoring device equipped with a continuous recorder that records a reading at least once every 15 minutes. The device must be capable of monitoring temperature at two locations and have a minimum accuracy of ± 1 percent of the temperature being monitored in degrees Celsius, or ± 2.5 degrees Celsius, whichever value is greater. You must install one temperature sensor in the vent stream at the nearest feasible point to the catalyst bed inlet, and you must install a second temperature sensor in the vent stream at the nearest feasible point to the catalyst bed outlet. You must install the temperature sensor at a location representative of the firebox temperature.

- (3) If you use a control device other than a flare or other than a device listed in paragraphs (c)(1)(ii)(E)(1), (c)(1)(ii)(E)(2), (c)(1)(ii)(E)(5), or (c)(1)(iii) to control emissions, you must submit the operating parameters you plan to monitor in the performance test notice you provide to the Administrator pursuant to § 60.8(d).
 - (4) Using the continuous monitoring system (CMS) data, you must calculate the hourly average of each operating parameter. You must demonstrate compliance by maintaining the operating parameter at or above the minimum operating parameter limit on a 3-hour rolling average basis. For each hour, calculate the hourly value of the operating parameter from your CMS. Average the three most recent hours of data to determine the 3-hour average. Determine the 3-hour rolling average by recalculating the 3-hour average each hour. You must not include periods of data collected during monitoring system breakdowns, repairs, maintenance periods, instrument adjustments, or checks to maintain precision and accuracy in the operating parameter averages.
 - (5) For enclosed combustion devices for which you elect to comply with the flare requirements in § 60.112c(d)(5), you must comply with the monitoring provisions in paragraph (c)(1)(iv) of this section instead of paragraphs (c)(1)(ii)(E)(1) through (4) of this section.
- (iii) No performance test is required for the control devices identified in paragraphs (c)(1)(iii)(A) through (C) of this section.
- (A) A boiler or process heater with a design heat input capacity of 44 megawatts (150 million British thermal units per hour) or greater.
 - (B) A boiler or process heater into which the vent stream is introduced with the primary fuel.
 - (C) A boiler, process heater, or incinerator burning hazardous waste, which is regulated under 40 CFR part 63, subpart EEE; part 264; part 265; or part 266.
- (iv) For each source that is equipped with a closed vent system and a flare to meet the requirements in § 60.112c(d) or enclosed combustion device electing to comply with the requirements in § 60.112c(d)(5), you must conduct visible emission observations as specified in paragraph (c)(1)(iv)(A) of this section and install, operate, and maintain CMS for flares following the requirements specified in 40 CFR 63.671 and as specified in paragraphs (c)(1)(iv)(B) and (C) of this section.
- (A) If visible emissions are observed for more than 1 continuous minute during normal duties, visible emissions observation using Method 22 of appendix A-7 to this part must be conducted for 2 hours or until 5-minutes of visible emissions are observed.

- (B) Substitute "pilot flame or flare flame" for each occurrence of "pilot flame."
- (C) As an alternative to determining the flare tip velocity rate for each 15-minute block to determine compliance with the flare tip velocity operating limit as specified in 40 CFR 63.670(k)(2), you may elect to conduct a one-time flare tip velocity operating limit compliance assessment as provided in paragraphs (c)(1)(iv)(C)(1) through (4) of this section. If the flare or storage vessel control configurations change (e.g., flare tip modified or additional storage vessel or other sources are added for which vapors are directed to the flare), you must repeat this one-time assessment based on the new configuration.
 - (1) Determine the unobstructed cross-sectional area of the flare tip, in units of square feet, as specified in 40 CFR 63.670(k)(1).
 - (2) Determine the maximum flow rate, in units of cubic feet per second, based on the maximum cumulative loading rate for a 15-minute block period considering maximum filling rates for all storage vessel affected facilities controlled by the flare and, if applicable, considering the maximum release pressure of any other vapors directed to the flare.
 - (3) Calculate the maximum flare tip velocity as the maximum flow rate from paragraph (c)(1)(iv)(C)(2) of this section divided by the unobstructed cross-sectional area of the flare tip from paragraph (c)(1)(iv)(C)(1) of this section.
 - (4) Demonstrate that the maximum flare tip velocity as calculated in paragraph (c)(1)(iv)(C)(3) of this section is less than 60 feet per second.
- (2) For each closed vent system, you must conduct the instrument monitoring in paragraphs (c)(2)(i) through (iii) of this section. You must conduct the initial instrument monitoring within 180 days of an affected facility being connected to the closed vent system. Subsequent instrument inspections must be conducted within 365 days of the previous inspection. Visual, audible, and olfactory inspections must be conducted quarterly.
 - (i) Conduct instrument monitoring using the procedures in Method 21 of appendix A-7 to this part. The detection instrument must meet the performance criteria of Method 21 of appendix A-7, except that the instrument response factor criteria in section 8.1.1 of Method 21 of appendix A-7 must be for the average composition of the fluid and not for each individual organic compound in the stream. For streams that contain nitrogen, air, water, or other inerts that are not organic VOC, the representative stream response factor must be determined on an inert-free basis. The instrument reading that defines a leak is 500 ppmv (as methane). The instrument shall be calibrated before use each day of its use by the procedures specified in Method 21 of appendix A-7. The calibration gases in paragraphs (c)(2)(i)(A) and (B) of this section must be used. The drift assessment specified in paragraph (c)(2)(i)(C) of this section must be performed at the end of each monitoring day.
 - (A) Zero air (less than 10 ppm of hydrocarbon in air).
 - (B) A mixture of methane in air at a concentration of approximately 500 ppmv.
 - (C) At the end of each monitoring day, check the instrument using the same calibration gas that was used to calibrate the instrument before use. Follow the procedures specified in Method 21 of appendix A-7 to this part, section 10.1, except do not adjust the meter readout to correspond to the calibration gas value. If multiple scales are used, record the

instrument reading for each scale used. Divide the arithmetic difference of the initial and post-test calibration response by the corresponding calibration gas value for each scale and multiply by 100 to express the calibration drift as a percentage. If a calibration drift assessment shows a negative drift of more than 10 percent, then re-monitor all equipment monitored since the last calibration with instrument readings between the leak definition and the leak definition multiplied by (100 minus the percent of negative drift) divided by 100. If any calibration drift assessment shows a positive drift of more than 10 percent from the initial calibration value, then, at the owner/operator's discretion, all equipment with instrument readings above the leak definition and below the leak definition multiplied by (100 plus the percent of positive drift) divided by 100 monitored since the last calibration may be re-monitored.

- (ii) Any parts of the closed vent system that are designated as unsafe to inspect are exempt from the inspection requirements of paragraph (c)(2)(i) of this section if the conditions of paragraphs (c)(2)(ii)(A) and (B) of this section are met.
 - (A) The owner or operator determines that the equipment is unsafe-to-inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with paragraph (c)(2)(i) of this section; and
 - (B) The owner or operator has a written plan that requires inspection of the equipment as frequently as practical during safe-to-inspect times. Inspection is not required more than once annually.
- (iii) Any parts of the closed vent system that are designated as difficult-to-inspect are exempt from the inspection requirements of paragraph (c)(2)(i) of this section if the provisions of paragraphs (c)(2)(iii)(A) and (B) of this section apply.
 - (A) The owner or operator determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters (7 feet) above a support surface; and
 - (B) The owner or operator has a written plan that requires inspection of the equipment at least once every 60 calendar months.
- (3) Leaks, as indicated by an instrument reading greater than 500 ppmv or emissions detected by visible, audible, and olfactory methods, shall be repaired as soon as practical following the requirements outlined in paragraphs (c)(3)(i) and (ii) of this section.
 - (i) Except as allowed by paragraph (c)(3)(ii) of this section, a first attempt at repair shall be made no later than 5 days after the leak is detected. Repairs shall be completed no later than 15 days after the leak is detected or at the beginning of the next introduction of vapors to the system, whichever is later.
 - (ii) Delay of repair of a closed vent system for which leaks have been detected is allowed if repair within 15 days after a leak is detected is technically infeasible or unsafe or if the owner or operator determines that emissions resulting from immediate repair would be greater than the emissions likely to result from delay of repair. Repair of such equipment shall be completed as soon as practical.

- (4) You must develop a monitoring plan that covers each CMS used to demonstrate continuous compliance for your control device as outlined in paragraphs (c)(4)(i) and (ii) of this section. You must install, calibrate, operate, and maintain each CMS in accordance with the procedures in your monitoring plan.
 - (i) For each control device other than those specified in paragraph (c)(4)(ii) of this section, your monitoring plan must contain the information required in paragraphs (c)(4)(i)(A) through (G) of this section.
 - (A) The parameter to be monitored and the operating limit for the parameter.
 - (B) Sampling interface (e.g., thermocouple) location such that the monitoring system will provide representative measurements.
 - (C) Description of the monitoring system specifications, including the detector signal analyzer, data acquisition, and calculations.
 - (D) Equipment performance checks, system accuracy audits, or other audit procedures, including the information in paragraphs (c)(4)(i)(D)(1) through (4) of this section.
 - (1) You must conduct the CMS equipment performance checks, system accuracy audits, or other audit procedures specified in the monitoring plan at least once every 12 calendar months.
 - (2) You must also conduct calibration checks following any period of more than 24 hours throughout which the sensor exceeded the manufacturer's specified maximum range unless you install a new sensor.
 - (3) At least quarterly, you must inspect all components for integrity and all electrical connections for continuity, oxidation, and galvanic corrosion, unless you use a redundant CMS.
 - (4) Daily checks for indications that the system is responding.
 - (E) Description of how periods of data collected during CMS breakdowns, out-of-control periods, repairs, maintenance periods, instrument adjustments, or checks to maintain precision and accuracy, calibration checks, and zero (low-level), mid-level (if applicable), and high-level adjustments will be excluded from operating parameter averages.
 - (F) Ongoing operation and maintenance procedures.
 - (G) Ongoing recordkeeping procedures.
 - (ii) For each flare or enclosed combustion device for which you elect to comply with the flare provisions in § 60.112c(d)(5), your monitoring plan must contain the information required by 40 CFR 63.671(b).
- (d) **Requirements for determining maximum true vapor pressure.** For each affected storage vessel, you must determine the maximum true vapor pressure of the stored VOL according to the requirements specified in paragraphs (d)(1) and (2) of this section. For storage vessels operated above or below ambient temperatures, the maximum true vapor pressure is calculated based upon the highest expected calendar-month average of the storage temperature. For storage vessels operated at ambient temperatures, the maximum true vapor pressure is calculated based upon the maximum local monthly average ambient temperature as reported by the National Weather Service.

- (1) Prior to the initial filling of the storage vessel or to the refilling of the storage vessel with a new VOL, the highest maximum true vapor pressure for the range of anticipated liquids to be stored, including mixtures for which you can define the range of concentrations for constituents in the mixture or with a known maximum Reid vapor pressure, must be determined using any one of the methods described in paragraphs (d)(1)(i) through (iv) of this section.
 - (i) As obtained from standard reference texts.
 - (ii) ASTM D6377-20 (incorporated by reference; see § 60.17). Perform the method using a vapor-to-liquid ratio of 4:1, which is expressed in the method as VPCR.
 - (iii) ASTM D6378-22 (incorporated by reference; see § 60.17). Perform the method using a vapor-to-liquid ratio of 4:1.
 - (iv) As measured by an appropriate method as approved by the Administrator.
- (2) For each affected storage vessel storing a mixture of indeterminate composition or a mixture of unknown variable composition, the initial determination of the vapor pressure required by paragraph (d)(1) of this section must be a physical test using one of the methods specified in paragraphs (d)(1)(ii) through (iv) of this section. Additional physical tests using one of the methods specified in paragraphs (d)(1)(ii) through (iv) of this section are required at least once every 6 calendar months thereafter as long as the measured vapor pressure remains below the applicable thresholds in § 60.110c(c)(1), (c)(2), (d)(1), or (d)(2). If the vapor pressure measured under this paragraph (d)(2) exceeds the threshold defined in § 60.110c(c)(1), (c)(2), (d)(1), or (d)(2) you must meet the requirements in § 60.112c and the corresponding requirements in §§ 60.113c through 60.116c. If the storage vessel does not have controls meeting the requirements in § 60.112c, the storage vessel must be emptied and taken out of service until controls meeting the requirements in § 60.112c can be installed. Upon compliance with the provisions in § 60.112c, no additional vapor pressure monitoring is required.

§ 60.114c Alternative means of emission limitation.

- (a) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in emissions at least equivalent to the reduction in emissions achieved by the applicable requirement in § 60.112c, the Administrator will publish in the FEDERAL REGISTER a document permitting the use of the alternative means for purposes of compliance with that requirement.
- (b) Any document under paragraph (a) of this section will be published only after notice and an opportunity for a hearing.
- (c) Any person seeking permission under this section must submit to the Administrator a written application including either:
 - (1) An actual emissions test that uses a full-sized or scale-model storage vessel that accurately collects and measures all VOC emissions from a given control device and that accurately simulates wind and accounts for other emission variables such as temperature and barometric pressure; or
 - (2) An engineering evaluation that the Administrator determines is an accurate method of determining equivalence.
- (d) The Administrator may condition the permission on requirements that may be necessary to ensure operation and maintenance to achieve the same emission reduction as specified in § 60.112c.

§ 60.115c Recordkeeping requirements.

- (a) Except as otherwise specified in paragraphs (b) through (d) of this section, you must keep copies of all records required by this section and all reports required under § 60.116c for at least 5 years.
- (b) For each storage vessel affected facility as specified in § 60.110c(a), you must keep readily accessible records for the life of the source showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel.
- (c) Except as provided in paragraphs (c)(1) and (2) of this section, for each storage vessel affected facility under this subpart, you must maintain a record of the VOL currently stored, including a description of the VOL stored, the date when the VOL was first stored in the storage vessel, and the maximum true vapor pressure of that VOL.
 - (1) For each vessel storing a mixture of indeterminate or variable composition that meets the requirements for vapor pressure measurement at least once every 6 calendar months in § 60.113c(d), you must maintain records of each vapor pressure measurement for 5 years.
 - (2) Each vessel equipped with a closed vent system routed to a control device, fuel gas system, or process meeting the specification of § 60.112c(d) is exempt from the requirements of paragraph (c) of this section.
- (d) For each storage vessel as specified in § 60.112c(a), you must keep records as required in paragraphs (d)(1) through (5) of this section, as applicable depending upon the control equipment installed to meet the requirements of § 60.112c.
 - (1) After installing control equipment for an internal floating roof to meet the provisions in § 60.112c(b), you must keep the following records.
 - (i) Keep a record of each inspection performed as required by § 60.113c(a)(1), (a)(2)(i), and (a)(2)(ii). Each record must identify the storage vessel on which the inspection was performed and must contain the date the vessel was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings).
 - (ii) For each LEL monitoring event, keep records as specified in paragraphs (a)(1)(ii)(A) through (I) of this section.
 - (A) Date and time of the LEL monitoring, and the storage vessel being monitored.
 - (B) A description of the monitoring event (annual monitoring conducted concurrent with visual inspection required under § 60.113c(a)(2)(i); re-monitoring due to high winds during annual monitoring; re-monitoring after repair attempt; other monitoring event as required by the Administrator).
 - (C) Wind speed at the top of the storage vessel on the date of LEL monitoring.
 - (D) The LEL meter manufacturer and model number used, as well as an indication of whether tubing was used during the LEL monitoring, and if so, the type and length of tubing used.
 - (E) Calibration checks conducted before and after making the measurements, including both the span check and instrumental offset. This includes the hydrocarbon used as the calibration gas, the Certificate of Analysis for the calibration gas(es), the results of the calibration check, and any corrective action for calibration checks that do not meet the required response.

- (F) Location of the measurements and the location of the floating roof.
 - (G) Each measurement (taken at least once every 15 seconds). The records should indicate whether the recorded values were automatically corrected using the meter's programming. If the values were not automatically corrected, record both the raw (as the calibration gas) and corrected measurements, as well as the correction factor used.
 - (H) Each of the 5-minute rolling average readings.
 - (I) If the vapor concentration of the storage vessel was above 25 percent of the LEL on a 5-minute rolling average basis, a description of whether the floating roof was repaired, replaced, or taken out of service.
- (2) After installing control equipment for an external floating roof to meet the provisions in § 60.112c(c), you must keep a record of each inspection and gap measurement performed as required by § 60.113c(b). The record must contain:
- (i) Identification of the storage vessel on which the inspection was performed;
 - (ii) The date the storage vessel was inspected;
 - (iii) The type of inspection [inspection with gap measurements as specified in § 60.113c(b)(1) through (4); visual inspection as specified in § 60.113c(b)(7)];
 - (iv) The observed condition of each component of the control equipment (seals, internal floating roof, and fittings); and
 - (v) For each inspection with gap measurements as specified in § 60.113c(b)(1) through (4):
 - (A) The raw data obtained in the measurement; and
 - (B) The calculations described in § 60.113c(b)(2) and (b)(3).
- (3) After installing a closed vent system routed to a control device, fuel gas system, or process to comply with the provisions in § 60.112c(d), you must keep the following records, as well as the records in paragraph (d)(4) or (5) of this section, as applicable.
- (i) The make and model of the backpressure regulator valve, date of installation, and inlet flow rating. Maintain records of the engineering evaluation and manufacturer specifications that identify the pressure set point corresponding to the minimum inlet gas flow rate, the annual confirmation that the backpressure regulator valve set point is correct and consistent with the engineering evaluation and manufacturer specifications, and the annual confirmation that the backpressure regulator valve fully closes when not in open position.
 - (ii) The CMS monitoring plan required by § 60.113c(c)(4), if the closed vent system is routed to a control device. Retain this plan for the life of the control equipment.
 - (iii) Monitoring for the closed vent system conducted under § 60.113c(c)(2), including the date of inspection.
 - (iv) The written plan(s) required under § 60.113c(c)(2)(ii) and (iii) for unsafe-to-inspect and difficult-to-inspect portions of the closed vent system.
 - (v) For each leak detected during the monitoring conducted under § 60.113c(c)(2) and (3), you must record: the date the leak was detected; the location of the leak; the method used to detect the leak (Method 21 of appendix A-7 to this part or visible, audible, and olfactory methods); and

the maximum concentration reading obtained by Method 21 of appendix A-7, if applicable. For each repair attempt, you must record: the date of each repair attempt; the actions taken to repair the leak during each repair attempt; and date the repair was completed. If the repair is delayed, you must record the reason for the delay and the date you expect to complete the repair.

- (vi) For each bypass line, maintain a record of the following, as applicable: readings from the flow indicator; each inspection of the seal or closure mechanism; the date and time of each instance when the seal mechanism is broken, the bypass line valve position has changed, or the key for a lock-and-key type lock has been checked out.
 - (vii) For each pressure relief device or vacuum breaking device on a storage vessel or closed vent system required to be monitored according to § 60.112c(d)(1)(iii) or (d)(2)(iii): the device type; the monitoring device or system used for the device; data from the device or system indicating whether a pressure release occurred; and the date, time, and duration of each pressure release, if applicable.
- (4) After installing a closed vent system routed to a control device other than a flare or enclosed combustion device electing to comply with § 60.112c(d), you must keep the following records.
- (i) Each performance test.
 - (ii) All CMS performance checks, audits, maintenance, and repairs.
 - (iii) The hourly values recorded by the CMS and all 3-hour rolling averages.
 - (iv) The periods when the CMS is not operational.
- (5) After installing a closed vent system routed to a flare to comply with § 60.112c(d) or an enclosed combustion device for which you elected to comply with § 60.112c(d)(5), you must keep the following records.
- (i) Pilot flame or flare flame monitoring as specified in paragraphs (d)(5)(i)(A) and (B) of this section.
 - (A) The output of the monitoring device used to detect the presence of a pilot flame as required in 40 CFR 63.670(b). Retain these records for a minimum of 2 years.
 - (B) Each 15-minute block during which there was at least 1 minute that no pilot flame was present when VOL vapors were routed to the flare. Each record must identify the start and end time and date of each 15-minute block.
 - (ii) Visible emissions observations as specified in paragraphs (d)(5)(ii)(A) through (B) of this section, as applicable.
 - (A) If visible emissions observations are performed using Method 22 of appendix A-7 to this part, the record must identify the date, the start and end time of the visible emissions observation, and the number of minutes for which visible emissions were observed during the observation. If the owner or operator performs visible emissions observations more than one time during a day, include separate records for each visible emissions observation performed.

- (B) For each 2-hour period for which visible emissions are observed for more than 5 minutes in 2 consecutive hours but visible emissions observations according to Method 22 of appendix A-7 to this part were not conducted for the full 2-hour period, the record must include the date, the start and end time of the visible emissions observation, and an estimate of the cumulative number of minutes in the 2-hour period for which emissions were visible based on best information available to the owner or operator.
- (iii) Each 15-minute block period during which operating values are outside of the applicable operating limits specified in 40 CFR 63.670(d) through (f) when vapors from a storage vessel affected facility are directed to the flare for at least 15-minutes identifying each specific operating limit that was not met.
- (iv) The 15-minute block average cumulative flows for the enclosed combustion device vent gas or flare vent gas and, if applicable, total steam, perimeter assist air, and premix assist air specified to be monitored under 40 CFR 63.670(i), along with the date and start and end time for the 15-minute block. If multiple monitoring locations are used to determine cumulative vent gas flow, total steam, perimeter assist air, and premix assist air, retain records of the 15-minute block average flows for each monitoring location for a minimum of 2 years, and retain the 15-minute block average cumulative flows that are used in subsequent calculations for a minimum of 5 years. If pressure and temperature monitoring is used, retain records of the 15-minute block average temperature, pressure and molecular weight of the flare vent gas, enclosed combustion device vent gas, or assist gas stream for each measurement location used to determine the 15-minute block average cumulative flows for a minimum of 2 years, and retain the 15-minute block average cumulative flows that are used in subsequent calculations for a minimum of 5 years.
- (v) The flare vent gas or enclosed combustion device vent gas compositions specified to be monitored under 40 CFR 63.670(j). Retain records of individual component concentrations from each compositional analyses for a minimum of 2 years. If an NHV_{vg} analyzer is used, retain records of the 15-minute block average values for a minimum of 5 years, as well as records of quality assurance activities conducted on the analyzer and any cylinder gas certificates. If you demonstrate your gas streams have consistent composition using the provisions in 40 CFR 63.670(j)(6), retain records of the current application for which you are using for as long as you use the fixed NHV_{vg} as determined using the provisions in 40 CFR 63.670(j)(6).
- (vi) Each 15-minute block average operating parameter calculated following the methods specified in 40 CFR 63.670(k) through (n), as applicable.
- (vii) All periods during which you did not perform monitoring according to the procedures in 40 CFR 63.670(g), (i), and (j) as applicable. Note the start date, start time, and duration in minutes for each period.
- (viii) If you conduct a one-time flare tip velocity operating limit compliance assessment according to § 60.113c(c)(1)(iv)(C), a copy of the assessment, including all calculations for as long as you use this compliance method.
- (ix) For each parameter monitored using a CMS, retain the records specified in paragraphs (d)(5)(ix)(A) through (C) of this section, as applicable:
 - (A) For each deviation, record the start date and time, duration, cause, and corrective action taken.

- (B) For each period when there is a CMS outage or the CMS is out of control, record the start date and time, duration, cause, and corrective action taken.
 - (C) Each inspection or calibration of the CMS including a unique identifier, make, and model number of the CMS, and date of calibration check.
 - (x) For an enclosed combustion device for which you elected to comply with § 60.112c(d)(5), you must also keep a copy of each performance test.
- (e) If you are required to meet the degassing requirements in § 60.112c(a)(3), you must maintain records necessary to demonstrate compliance with the requirements in § 60.112c(e) including, if appropriate, records of existing standard site procedures used to empty and degas (deinventory) equipment for safety purposes.

§ 60.116c Reporting requirements.

- (a) **Initial notification requirements.** You must submit initial notifications to the Administrator within 60 days after October 15, 2024 or within 60 days after becoming an affected storage vessel, whichever is later. Once the report template for this subpart has been available on the Compliance and Emissions Data Reporting Interface (CEDRI) website (<https://www.epa.gov/electronic-reporting-air-emissions/cedri>) for 1 year, you must submit all subsequent initial notifications using the appropriate electronic report template on the CEDRI website for this subpart and following the procedure specified in paragraph (f) of this section. The date report templates become available will be listed on the CEDRI website. For each storage vessel affected facility subject to the standards in § 60.112c, include the following information in the initial notification:
 - (1) The following general facility information:
 - (i) Facility name;
 - (ii) Facility physical address, including city, county, State, and zip code;
 - (iii) Latitude and longitude of facility's physical location. Coordinates must be in decimal degrees with at least five decimal places; and
 - (iv) The following information for the facility contact person:
 - (A) Name;
 - (B) Mailing address, including city, county, State, and zip code;
 - (C) Telephone number; and
 - (D) Email address.
 - (2) Identification of the storage vessel(s) subject to this subpart.
 - (3) Capacity (in gallons) of each storage vessel.
 - (4) Maximum true vapor pressure of the liquid stored (in psia) in each storage vessel.
 - (5) Indication of the standards for which the storage vessel complies [§§ 60.112c(b); 60.112c(c); 60.112c(d); 60.112c(e)].

- (6) If you route emissions to a control device, specify the design of the storage vessel and closed vent system (*i.e.*, storage vessel designed according to § 60.112c(d)(1)(i); or closed vent system designed according to § 60.112c(d)(1)(ii)), the type of control device (*i.e.*, enclosed combustion device complying with temperature operating limit; enclosed combustion device electing to comply with § 60.112c(d)(5); process heater or boiler; catalytic incinerator; flare, or other control device (specify)).
 - (7) If you route emissions to a process, submit the information specified in § 60.112c(d)(6)(ii) and (iii).
 - (8) If you route emissions to a fuel gas system, as specified in § 60.112c(d)(6)(iv), submit a statement that the emission stream is connected to the fuel gas system.
- (b) **Other notifications.** Submit notifications for filling and refilling an affected storage vessel and for conducting gap measurements as specified in paragraphs (b)(1) and (2) of this section.
- (1) As specified in § 60.113c(a)(4) and (b)(7)(ii), you must notify the Administrator at least 30 days prior to inspection of each storage vessel for which an inspection is required by § 60.113c(a)(1), (a)(2)(ii) or (b)(7) to afford the Administrator the opportunity to have an observer present. Submit the notification using CEDRI as specified in paragraph (f) of this section. If the inspection required by § 60.113c(a)(2)(ii) or (b)(7) is not planned and you could not have known about the inspection 30 days in advance of refilling the storage vessel, you must notify the Administrator at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation using CEDRI demonstrating why the inspection was unplanned.
 - (2) As specified in § 60.113c(b)(6), you must notify the Administrator 30 days in advance of any gap measurements required by § 60.113c(b)(1) to afford the Administrator the opportunity to have an observer present. Submit the notification using CEDRI as specified in paragraph (f) of this section. If the inspection required by § 60.113c(b)(1) is not planned and you could not have known about the inspection 30 days in advance of the gap measurement, you must notify the Administrator at least 7 days prior to the conducting the gap measurement. Notification must be made by telephone immediately followed by written documentation using CEDRI demonstrating why the gap measurement was unplanned.
- (c) **Reporting requirements for semiannual report.** You must submit to the Administrator semiannual reports with the applicable information in paragraphs (c)(1) through (12) of this section by the dates specified in paragraph (d) of this section. For this subpart, the semiannual reports supersede the excess emissions and monitoring systems performance report and/or summary report form required under § 60.7. Once the report template for this subpart has been available on the CEDRI website (<https://www.epa.gov/electronic-reporting-air-emissions/cedri>) for 1 year, you must submit all subsequent reports using the appropriate electronic report template on the CEDRI website for this subpart and following the procedure specified in paragraph (f) of this section. The date report templates become available will be listed on the CEDRI website. Unless the Administrator or delegated State agency or other authority has approved a different schedule for submission of reports, the report must be submitted by the deadline specified in this subpart, regardless of the method in which the report is submitted.
- (1) Report the following general facility information:
 - (i) Facility name;
 - (ii) Facility physical address, including city, county, and State;

- (iii) Latitude and longitude of facility's physical location. Coordinates must be in decimal degrees with at least five decimal places;
 - (iv) The following information for the facility contact person:
 - (A) Name;
 - (B) Mailing address;
 - (C) Telephone number; and
 - (D) Email address.
 - (v) Date of report and beginning and ending dates of the reporting period. You are no longer required to provide the date of report when the report is submitted via CEDRI; and
 - (vi) Statement by a responsible official, with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report. If your report is submitted via CEDRI, the certifier's electronic signature during the submission process replaces the requirement in this paragraph (c)(1)(vi).
- (2) For storage vessels complying with the provisions of § 60.112c(b) or (c):
- (i) Identification of the storage vessel and an indication of whether you comply with § 60.112c(b) or (c).
 - (ii) An indication whether the storage vessel was inspected during the reporting period, and if so, the date and type of each inspection conducted during the reporting period [the type of inspection shall be selected from the following list: initial IFR inspection according to § 60.113c(a)(1), IFR visual inspection from fixed roof according to § 60.113c(a)(2)(i), combined IFR visual inspection with LEL monitoring according to § 60.113c(a)(2)(i) and (3), internal IFR inspection according to § 60.113c(a)(2)(ii), IFR LEL monitoring according to § 60.113c(a)(3), EFR gap measurements according to § 60.113c(b)(1) through (4), or visual EFR inspection according to § 60.113c(b)(7)].
 - (iii) For storage vessels complying with the provisions of § 60.112c(b) that were not inspected according to § 60.113c(a)(2)(ii) during the reporting period, report the last date the storage vessel was inspected according to the provisions in § 60.113c(a)(2)(ii).
- (3) For each failure of a visual inspection required under § 60.113c(a)(2)(i), report the information in paragraphs (c)(3)(i) through (iii) of this section. For each failure of LEL monitoring required under § 60.113c(a)(3), report the information in paragraphs (c)(3)(i) through (iv) of this section.
- (i) Identification of the storage vessel;
 - (ii) The date of the inspection;
 - (iii) The nature of the defects; and
 - (iv) The following information regarding the LEL monitoring conducted:
 - (A) Date and start and end times of the LEL monitoring conducted.
 - (B) Wind speed in miles per hour at the top of the storage vessel on the date of LEL monitoring.
 - (C) The highest 5-minute rolling average reading during the monitoring event.

- (D) If re-monitoring was required due to excessive wind or repair during the visual inspection, report the information in paragraphs (b)(3)(iv)(A) through (C) of this section for the re-monitoring event.
 - (E) Whether the floating roof was repaired, replaced, or taken out of VOL service. If the storage vessel was taken out of VOL service, report the date the storage vessel was emptied. If the floating roof was replaced or repaired, report the nature of and date the repair was made and the information in paragraphs (b)(3)(iv)(A) through (C) of this section for each re-monitoring conducted to confirm the repair.
- (4) For each inspection required by § 60.113c(a)(2)(ii) that finds holes or tears in the seal or seal fabric, defects in the internal floating roof, or other control equipment defects listed in § 60.113c(a)(2)(ii), report:
- (i) Identification of the storage vessel and date of inspection;
 - (ii) The reason it did not meet the specifications of § 60.112c(b) or § 60.113c(a)(2)(ii);
 - (iii) A description of each repair made; and
 - (iv) Date of repair.
- (5) For each inspection required under § 60.113c(b)(1), report the following information:
- (i) Identification of the storage vessel and the date of the inspection;
 - (ii) The accumulated area of gaps between the storage vessel wall and the primary seal (in square inches per foot of storage vessel diameter);
 - (iii) The maximum width of any portion of any gap in the primary seal (in inches);
 - (iv) The accumulated area of gaps between the storage vessel wall and the secondary seal (in square inches per foot of storage vessel diameter);
 - (v) The maximum width of any portion of any gap in the secondary seal (in inches); and
 - (vi) An indication whether there was an inspection failure. If there was an inspection failure, also include the following information in the report:
 - (A) An indication of the type of deviation(s) [indicating all that apply from: §§ 60.113c(b)(4)(i)(A), 60.113c(b)(4)(i)(B), 60.113c(b)(4)(i)(C), 60.113c(b)(4)(i)(D), 60.113c(b)(4)(ii)(A), 60.113c(b)(4)(ii)(B), 60.113c(b)(4)(ii)(C), 60.113c(b)(4)(ii)(D), 60.113c(b)(4)(iii)(A), 60.113c(b)(4)(iii)(B), 60.113c(b)(4)(iii)(C), 60.113c(b)(4)(iii)(D)]; and
 - (B) The date the storage vessel was emptied or the repairs made and date of repair.
- (6) For each inspection required by § 60.113c(b)(7) that finds defects as listed in § 60.113c(b)(7)(i), report:
- (i) Identification of the storage vessel and date of inspection;
 - (ii) The reason it did not meet the specifications of § 60.112c(c) or § 60.113c(b)(7);
 - (iii) A description of each repair made; and
 - (iv) Date of repair.

- (7) For each landing of an internal floating roof or an external floating roof that triggers an alarm required by § 60.113c(a)(5) or (b)(8), report:
 - (i) Identification of the storage vessel;
 - (ii) Date the roof was landed; and
 - (iii) Indication of whether the roof landed because the storage vessel was being emptied.
- (8) After installing a closed vent system that routes to a control device, fuel gas system, or process to comply with § 60.112c, report the following, as well as the information in paragraphs (c)(9) or (10) of this section, as applicable:
 - (i) Results of annual inspections that indicate a backpressure regulator valve is not set correctly or does not fully close when not in the open position. Include the date and time of the inspection, the type of deviation, the corrective action taken, and the date and time when the backpressure regulator valve is set correctly, repaired, or replaced.
 - (ii) For each inspection conducted under § 60.113c(c)(2), identification of the closed vent system, the date of inspection, the type of inspection (Method 21 of appendix A-7 to this part or visible, audible, and olfactory methods) and summary result of the inspection (no leaks detected or leaks were detected). For each leak detected, provide an identification of the part of the closed vent system associated with the leak, the date of the first attempt at repair, and the date of successful repair or anticipated repair if the repair is delayed.
 - (iii) The start date and time, duration in hours, and an estimate of the mass quantity in pounds of VOL released for times when flow is detected or emissions are diverted from the control device through a bypass line while a storage vessel affected facility vented to the closed vent system contains VOL or is being degassed.
- (9) After installing a closed vent system and control device to comply with § 60.112c other than a flare or an enclosed combustion device electing to comply with § 60.112c(d)(5), report:
 - (i) For each instance when the CMS measured 3-hour rolling averages below the established operating limit:
 - (A) The date and start time of the deviation;
 - (B) The duration of the deviation in hours;
 - (C) The lowest 3-hour rolling average operating parameter reading during the period of the deviation;
 - (D) A unique identifier for the CMS;
 - (E) The make, model number, and date of last calibration check of the CMS; and
 - (F) The cause of the deviation and the corrective action taken.
 - (ii) For all instances when the CMS was inoperative:
 - (A) The date and start time of the deviation;
 - (B) The duration of the deviation in hours;
 - (C) A unique identifier for the CMS;

- (D) The make, model number, and date of last calibration check of the CMS; and
 - (E) The cause of the deviation and the corrective action taken.
- (10) After installing a closed vent system and a flare to comply with § 60.112c or an enclosed combustion device electing to comply with § 60.112c(d)(5), report:
- (i) The date and start and end times for each of the following instances:
 - (A) Each 15-minute block during which there was at least 1 minute when storage vessel vapors were routed to the flare and no pilot flame or flare flame was present.
 - (B) Each period of 2 consecutive hours during which visible emissions exceeded a total of 5 minutes. Additionally, report the number of minutes for which visible emissions were observed during the observation or an estimate of the cumulative number of minutes in the 2-hour period for which emissions were visible based on best information available to the owner or operator.
 - (C) Each 15-minute period for which the applicable operating limits specified in 40 CFR 63.670(d) through (f) were not met. You must identify the specific operating limit that was not met and report the value of the net heating value operating parameter(s) during the deviation determined following the methods in 40 CFR 63.670(k) through (n) as applicable.
 - (ii) The start date, start time, and duration in minutes for each period when storage vessel vapors were routed to the flare or enclosed combustion device and the applicable monitoring was not performed.
 - (iii) For each instance reported under paragraphs (c)(10)(i) and (ii) of this section that involves CMS, report the following information:
 - (A) A unique identifier for the CMS;
 - (B) The make, model number, and date of last calibration check of the CMS; and
 - (C) The cause of the deviation or downtime and the corrective action taken.
- (11) For pressure relief devices on a storage vessel or closed vent system subject to § 60.112c(d)(1)(iii) or (d)(2)(iii), report each pressure release to the atmosphere, including pressure relief device identification name or number, the start date, start time, and duration (in minutes) of the pressure release; and an estimate of the mass quantity in pounds of VOL released.
- (12) For vacuum breaking devices on a storage vessel subject to § 60.112c(d) and (d)(1)(iii), report the following information for each time the vacuum breaking device failed to close prior to the storage vessel reaching atmospheric pressure: identification name or number of vacuum breaking device; the start date, start time, and duration (in minutes) of the pressure release; and an estimate of the mass quantity in pounds of VOL released.
- (d) ***Timeframe for semiannual report submissions.***
- (1) The first semiannual report will cover the period starting with the date the source first becomes an affected facility subject to this subpart and ending June 30 or December 31, whichever date is earlier. For example, if the source becomes an affected facility on April 15, the first semiannual

report would cover the period from April 15 to June 30. The first semiannual report must be submitted on or before the last day of the month 2 months after the last date covered by the semiannual report. In this example, the first semiannual report would be due August 31.

- (2) Subsequent semiannual reports will cover subsequent 6 calendar month periods (January 1 through June 30 or July 1 through December 31, as applicable) with each report due on or before the last day of the month 2 months after the last date covered by the semiannual report (August 31 or February 28 or 29, as applicable).
- (3) For each affected facility that is subject to permitting regulations pursuant to 40 CFR parts 70 or 71, if the delegated authority has established dates for submitting semiannual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) or 71.6(a)(3)(iii)(A), you may submit the first and subsequent semiannual reports according to the dates the delegated authority has established instead of the dates in paragraphs (d)(1) and (2) of this section.

(e) **Reporting requirements for performance tests.** Within 60 days after the date of completing each performance test, you must submit the results following the procedures specified in paragraph (f) of this section. Data collected using test methods that are supported by the U.S. Environmental Protection Agency (EPA) Electronic Reporting Tool (ERT) as listed on the EPA's ERT website (<https://www.epa.gov/electronic-reporting-air-emissions/electronic-reporting-tool-ert>) at the time of the test must be submitted in a file format generated using the EPA's ERT. Alternatively, you may submit an electronic file consistent with the extensible markup language (XML) schema listed on the EPA's ERT website. Data collected using test methods that are not supported by the EPA's ERT as listed on the EPA's ERT website at the time of the test must be included as an attachment in the ERT or an alternate electronic file.

(f) **Requirements for electronically submitting reports.** If you are required to submit notifications or reports following the procedures specified in this paragraph (f), you must submit notifications or reports to the EPA via CEDRI, which can be accessed through the EPA's Central Data Exchange (CDX) (<https://cdx.epa.gov/>). The EPA will make all the information submitted through CEDRI available to the public without further notice to you. Do not use CEDRI to submit information you claim as confidential business information (CBI). Although we do not expect persons to assert a claim of CBI, if you wish to assert a CBI claim for some of the information in the report, you must submit a complete file in the format specified in this subpart, including information claimed to be CBI, to the EPA following the procedures in paragraphs (f)(1) and (2) of this section. Clearly mark the part or all of the information that you claim to be CBI. Information not marked as CBI may be authorized for public release without prior notice. Information marked as CBI will not be disclosed except in accordance with procedures set forth in 40 CFR part 2. All CBI claims must be asserted at the time of submission. Anything submitted using CEDRI cannot later be claimed CBI. Furthermore, under CAA section 114(c), emissions data are not entitled to confidential treatment, and the EPA is required to make emissions data available to the public. Thus, emissions data will not be protected as CBI and will be made publicly available. You must submit the same file submitted to the CBI office with the CBI omitted to the EPA via the EPA's CDX as described earlier in this paragraph (f).

- (1) The preferred method to receive CBI is for it to be transmitted electronically using email attachments, File Transfer Protocol, or other online file sharing services. Electronic submissions must be transmitted directly to the OAQPS CBI Office at the email address oaqpscbi@epa.gov, and as described above, should include clear CBI markings. ERT files should be flagged to the attention of the Measurement Policy Group Leader and all other files should be flagged to the attention of the

NSPS Kc Rule Lead. If assistance is needed with submitting large electronic files that exceed the file size limit for email attachments, and if you do not have your own file sharing service, please email oaqpscbi@epa.gov to request a file transfer link.

- (2) If you cannot transmit the file electronically, you may send CBI information through the postal service to the following address: U.S. EPA, Attn: OAQPS Document Control Officer, Mail Drop: C404-02, 109 T.W. Alexander Drive, P.O. Box 12055, RTP, NC 27711. ERT files should be sent to the secondary attention of the Measurement Policy Group Leader and all other files should be sent to the secondary attention of the NSPS Kc Rule Lead. The mailed CBI material should be double wrapped and clearly marked. Any CBI markings should not show through the outer envelope.

(g) **Claims of EPA system outage.** If you are required to electronically submit a report through CEDRI in the EPA's CDX, you may assert a claim of EPA system outage for failure to timely comply with that reporting requirement. To assert a claim of EPA system outage, you must meet the requirements outlined in paragraphs (g)(1) through (7) of this section.

- (1) You must have been or will be precluded from accessing CEDRI and submitting a required report within the time prescribed due to an outage of either the EPA's CEDRI or CDX systems.
- (2) The outage must have occurred within the period of time beginning 5 business days prior to the date that the submission is due.
- (3) The outage may be planned or unplanned.
- (4) You must submit notification to the Administrator in writing as soon as possible following the date you first knew, or through due diligence should have known, that the event may cause or has caused a delay in reporting.
- (5) You must provide to the Administrator a written description identifying:
 - (i) The date(s) and time(s) when CDX or CEDRI was accessed and the system was unavailable;
 - (ii) A rationale for attributing the delay in reporting beyond the regulatory deadline to EPA system outage;
 - (iii) A description of measures taken or to be taken to minimize the delay in reporting; and
 - (iv) The date by which you propose to report, or if you have already met the reporting requirement at the time of the notification, the date you reported.
- (6) The decision to accept the claim of EPA system outage and allow an extension to the reporting deadline is solely within the discretion of the Administrator.
- (7) In any circumstance, the report must be submitted electronically as soon as possible after the outage is resolved.

(h) **Claims of force majeure.** If you are required to electronically submit a report through CEDRI in the EPA's CDX, you may assert a claim of force majeure for failure to timely comply with that reporting requirement. To assert a claim of force majeure, you must meet the requirements outlined in paragraphs (h)(1) through (5) of this section.

- (1) You may submit a claim if a force majeure event is about to occur, occurs, or has occurred or there are lingering effects from such an event within the period of time beginning 5 business days prior to the date the submission is due. For the purposes of this section, a force majeure event is defined as an event that will be or has been caused by circumstances beyond the control of the affected facility,

its contractors, or any entity controlled by the affected facility that prevents you from complying with the requirement to submit a report electronically within the time period prescribed. Examples of such events are acts of nature (e.g., hurricanes, earthquakes, or floods), acts of war or terrorism, or equipment failure or safety hazard beyond the control of the affected facility (e.g., large scale power outage).

- (2) You must submit notification to the Administrator in writing as soon as possible following the date you first knew, or through due diligence should have known, that the event may cause or has caused a delay in reporting.
- (3) You must provide to the Administrator:
 - (i) A written description of the force majeure event;
 - (ii) A rationale for attributing the delay in reporting beyond the regulatory deadline to the force majeure event;
 - (iii) A description of measures taken or to be taken to minimize the delay in reporting; and
 - (iv) The date by which you propose to report, or if you have already met the reporting requirement at the time of the notification, the date you reported.
- (4) The decision to accept the claim of force majeure and allow an extension to the reporting deadline is solely within the discretion of the Administrator.
- (5) In any circumstance, the reporting must occur as soon as possible after the force majeure event occurs.

§ 60.117c Delegation of authority.

- (a) In delegating implementation and enforcement authority of this subpart to a State, local, or Tribal agency under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator of U.S. EPA and cannot be transferred to the State, local, or Tribal agency.
- (b) Authorities which will not be delegated to State, local, or Tribal agencies: §§ 60.113c(d)(1)(iv) and 60.114c and approval of an alternative to any electronic reporting to the EPA required by this subpart.

This content is from the eCFR and is authoritative but unofficial.

Title 40 —Protection of Environment
Chapter I —Environmental Protection Agency
Subchapter C —Air Programs
Part 61 —National Emission Standards for Hazardous Air Pollutants

Authority: 42 U.S.C. 7401 *et seq.*

Source: 38 FR 8826, Apr. 6, 1973, unless otherwise noted.

Subpart A General Provisions

- § 61.01 Lists of pollutants and applicability of part 61.
- § 61.02 Definitions.
- § 61.03 Units and abbreviations.
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- § 61.08 Approval of construction or modification.
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- § 61.10 Source reporting and waiver request.
- § 61.11 Waiver of compliance.
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- § 61.13 Emission tests and waiver of emission tests.
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- § 61.17 State authority.
- § 61.18 Incorporations by reference.
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Subpart A—General Provisions

§ 61.01 Lists of pollutants and applicability of part 61.

- (a) The following list presents the substances that, pursuant to section 112 of the Act, have been designated as hazardous air pollutants. The FEDERAL REGISTER citations and dates refer to the publication in which the listing decision was originally published.

Asbestos (36 FR 5931; Mar. 31, 1971)

Benzene (42 FR 29332; June 8, 1977)

Beryllium (36 FR 5931; Mar. 31, 1971)

Coke Oven Emissions (49 FR 36560; Sept. 18, 1984)

Inorganic Arsenic (45 FR 37886; June 5, 1980)

Mercury (36 FR 5931; Mar. 31, 1971)

Radionuclides (44 FR 76738; Dec. 27, 1979)

Vinyl Chloride (40 FR 59532; Dec. 24, 1975)

- (b) The following list presents other substances for which a FEDERAL REGISTER notice has been published that included consideration of the serious health effects, including cancer, from ambient air exposure to the substance.

Acrylonitrile (50 FR 24319; June 10, 1985)

1,3-Butadiene (50 FR 41466; Oct. 10, 1985)

Cadmium (50 FR 42000; Oct. 16, 1985)

Carbon Tetrachloride (50 FR 32621; Aug. 13, 1985)

Chlorinated Benzenes (50 FR 32628; Aug. 13, 1985)

Chlorofluorocarbon—113 (50 FR 24313; June 10, 1985)

Chloroform (50 FR 39626; Sept. 27, 1985)

Chloroprene (50 FR 39632; Sept. 27, 1985)

Chromium (50 FR 24317; June 10, 1985)

Copper (52 FR 5496; Feb. 23, 1987)

Epichlorohydrin (50 FR 24575; June 11, 1985)

Ethylene Dichloride (50 FR 41994; Oct. 16, 1985)

Ethylene Oxide (50 FR 40286; Oct. 2, 1985)

Hexachlorocyclopentadiene (50 FR 40154; Oct. 1, 1985)

Manganese (50 FR 32627; Aug. 13, 1985)

Methyl Chloroform (50 FR 24314; June 10, 1985)

Methylene Chloride (50 FR 42037; Oct. 17, 1985)

Nickel (51 FR 34135; Sept. 25, 1986)

Perchloroethylene (50 FR 52800; Dec. 26, 1985)

Phenol (51 FR 22854; June 23, 1986)

Polycyclic Organic Matter (49 FR 31680; Aug. 8, 1984)

Toluene (49 FR 22195; May 25, 1984)

Trichloroethylene (50 FR 52422; Dec. 23, 1985)

Vinylidene Chloride (50 FR 32632; Aug. 13, 1985)

Zinc and Zinc Oxide (52 FR 32597, Aug. 28, 1987)

- (c) This part applies to the owner or operator of any stationary source for which a standard is prescribed under this part.
- (d) In addition to complying with the provisions of this part, the owner or operator of a stationary source subject to a standard in this part may be required to obtain an operating permit issued to stationary sources by an authorized State air pollution control agency or by the Administrator of the U.S. Environmental Protection Agency (EPA) pursuant to title V of the Clean Air Act (Act) as amended November 15, 1990 (42 U.S.C. 7661). For more information about obtaining an operating permit see part 70 of this chapter.

[50 FR 46290, Nov. 7, 1985, as amended at 51 FR 7715, 7719, Mar. 5, 1986; 51 FR 11022, Apr. 1, 1986; 52 FR 37617, Oct. 8, 1987; 59 FR 12429, Mar. 16, 1994]

§ 61.02 Definitions.

The terms used in this part are defined in the Act or in this section as follows:

Act means the Clean Air Act (42 U.S.C. 7401 et seq.).

Administrator means the Administrator of the Environmental Protection Agency or his authorized representative.

Alternative method means any method of sampling and analyzing for an air pollutant which is not a reference method but which has been demonstrated to the Administrator's satisfaction to produce results adequate for the Administrator's determination of compliance.

Approved permit program means a State permit program approved by the Administrator as meeting the requirements of part 70 of this chapter or a Federal permit program established in this chapter pursuant to title V of the Act (42 U.S.C. 7661).

Capital expenditure means an expenditure for a physical or operational change to a stationary source which exceeds the product of the applicable "annual asset guideline repair allowance percentage" specified in the latest edition of Internal Revenue Service (IRS) Publication 534 and the stationary source's basis, as

defined by section 1012 of the Internal Revenue Code. However, the total expenditure for a physical or operational change to a stationary source must not be reduced by any “excluded additions” as defined for stationary sources constructed after December 31, 1981, in IRS Publication 534, as would be done for tax purposes. In addition, “annual asset guideline repair allowance” may be used even though it is excluded for tax purposes in IRS Publication 534.

Commenced means, with respect to the definition of “new source” in section 111(a)(2) of the Act, that an owner or operator has undertaken a continuous program of construction or modification or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or modification.

Compliance schedule means the date or dates by which a source or category of sources is required to comply with the standards of this part and with any steps toward such compliance which are set forth in a waiver of compliance under § 61.11.

Construction means fabrication, erection, or installation of an affected facility.

Effective date is the date of promulgation in the FEDERAL REGISTER of an applicable standard or other regulation under this part.

Existing source means any stationary source which is not a new source.

Force majeure means, for purposes of § 61.13, an event that will be or has been caused by circumstances beyond the control of the affected facility, its contractors, or any entity controlled by the affected facility that prevents the owner or operator from complying with the regulatory requirement to conduct performance tests within the specified timeframe despite the affected facility's best efforts to fulfill the obligation. Examples of such events are acts of nature, acts of war or terrorism, or equipment failure or safety hazard beyond the control of the affected facility.

Issuance of a part 70 permit will occur, if the State is the permitting authority, in accordance with the requirements of part 70 of this chapter and the applicable, approved State permit program. When the EPA is the permitting authority, issuance of a title V permit occurs immediately after the EPA takes final action on the final permit.

Monitoring system means any system, required under the monitoring sections in applicable subparts, used to sample and condition (if applicable), to analyze, and to provide a record of emissions or process parameters.

New source means any stationary source, the construction or modification of which is commenced after the publication in the FEDERAL REGISTER of proposed national emission standards for hazardous air pollutants which will be applicable to such source.

Owner or operator means any person who owns, leases, operates, controls, or supervises a stationary source.

Part 70 permit means any permit issued, renewed, or revised pursuant to part 70 of this chapter.

Permit program means a comprehensive State operating permit system established pursuant to title V of the Act (42 U.S.C. 7661) and regulations codified in part 70 of this chapter and applicable State regulations, or a comprehensive Federal operating permit system established pursuant to title V of the Act and regulations codified in this chapter.

Permitting authority means:

- (1) The State air pollution control agency, local agency, other State agency, or other agency authorized by the Administrator to carry out a permit program under part 70 of this chapter; or
- (2) The Administrator, in the case of EPA-implemented permit programs under title V of the Act (42 U.S.C. 7661).

Reference method means any method of sampling and analyzing for an air pollutant, as described in appendix B to this part.

Run means the net period of time during which an emission sample is collected. Unless otherwise specified, a run may be either intermittent or continuous within the limits of good engineering practice.

Standard means a national emission standard including a design, equipment, work practice or operational standard for a hazardous air pollutant proposed or promulgated under this part.

Startup means the setting in operation of a stationary source for any purpose.

State means all non-Federal authorities, including local agencies, interstate associations, and State-wide programs, that have delegated authority to implement:

- (1) The provisions of this part; and/or
- (2) The permit program established under part 70 of this chapter. The term State shall have its conventional meaning where clear from the context.

Stationary source means any building, structure, facility, or installation which emits or may emit any air pollutant which has been designated as hazardous by the Administrator.

Title V permit means any permit issued, renewed, or revised pursuant to Federal or State regulations established to implement title V of the Act (42 U.S.C. 7661). A title V permit issued by a State permitting authority is called a part 70 permit in this part.

[44 FR 55174, Sept. 25, 1979, as amended at 50 FR 46290, Nov. 7, 1985; 59 FR 12429, Mar. 16, 1994; 72 FR 27442, May 16, 2007]

§ 61.03 Units and abbreviations.

Used in this part are abbreviations and symbols of units of measure. These are defined as follows:

- (a) System International (SI) units of measure:

A = ampere

g = gram

Hz = hertz

J = joule

K = degree Kelvin

kg = kilogram

m = meter

m^2 = square meter

m^3 = cubic meter

mg = milligram = 10^{-3} gram

mm = millimeter = 10^{-3} meter

Mg = megagram = 10^6 gram

mol = mole

N = newton

ng = nanogram = 10^{-9} gram

nm = nanometer = 10^{-9} meter

Pa = pascal

s = second

V = volt

W = watt

Ω = ohm

μg = microgram = 10^{-6} gram

(b) Other units of measure:

$^{\circ}C$ = degree Celsius (centigrade)

cfm = cubic feet per minute

cc = cubic centimeter

Ci = curie

d = day

$^{\circ}F$ = degree Fahrenheit

ft^2 = square feet

ft^3 = cubic feet

gal = gallon

in = inch

in Hg = inches of mercury

in H₂O = inches of water

l = liter

lb = pound

lpm = liter per minute

min = minute

ml = milliliter = 10^{-3} liter

mrem = millirem = 10^{-3} rem

oz = ounces

pCi = picocurie = 10^{-12} curie

psig = pounds per square inch gage

°R = degree Rankine

μl = microliter = 10^{-6} liter

v/v = volume per volume

yd² = square yards

yr = year

(c) Chemical nomenclature:

Be = beryllium

Hg = mercury

H₂O = water

(d) Miscellaneous:

act = actual

avg = average

I.D. = inside diameter

M = molar

N = normal

O.D. = outside diameter

% = percent

std = standard

[42 FR 51574, Sept. 29, 1977, as amended at 54 FR 51704, Dec. 15, 1989]

§ 61.04 Address.

- (a) All requests, reports, applications, submittals, and other communications to the Administrator pursuant to this part shall be submitted in duplicate to the appropriate Regional Office of the U.S. Environmental Protection Agency to the attention of the Director of the Division indicated in the following table.

TABLE 1 TO PARAGRAPH (a)

Region	Address	State
I	Director, Enforcement and Compliance Assurance Division, U.S. EPA Region I, 5 Post Office Square—Suite 100 (04-2), Boston, MA 02109-3912, Attn: Air Compliance Clerk	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont.
II	Director, Air and Waste Management Division, U.S. Environmental Protection Agency, Federal Office Building, 26 Federal Plaza (Foley Square), New York, NY 10278	New Jersey, New York, Puerto Rico, Virgin Islands.
III	Director, Air Protection Division, Mail Code 3AP00, 1650 Arch Street,	Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia.

Region	Address	State
IV	Philadelphia, PA 19103-2029 Director, Air and Radiation Division, 61 Forsyth Street SW, Atlanta, Georgia 30303-8960	Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee.
V	Director, Air and Radiation Division, U.S. Environmental Protection Agency, 77 West Jackson Boulevard, Chicago, IL 60604-3590	Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin.
VI	Director, Enforcement and Compliance Assurance Division; U.S. Environmental Protection Agency, 1201 Elm Street, Suite 500, Mail Code 6ECD, Dallas, Texas 75270-2102	Arkansas, Louisiana, New Mexico, Oklahoma, Texas.
VII	Director, Air and Waste Management Division, 11201 Renner Boulevard, Lenexa, Kansas 66219	Iowa, Kansas, Missouri, Nebraska.
VIII	Director, Air and Toxics Technical Enforcement Program, Office of Enforcement, Compliance and Environmental Justice, Mail Code 8ENF-AT, 1595 Wynkoop Street, Denver, CO 80202-1129	Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming.
IX	Director, Enforcement and Compliance Assurance Division (ENF 2-1), U.S. Environmental Protection Agency Region IX, 75 Hawthorne Street, San Francisco, CA 94105	Arizona, California, Hawaii and Nevada; the territories of American Samoa and Guam; the Commonwealth of the Northern Mariana Islands; the territories of Baker Island, Howland Island, Jarvis Island, Johnston Atoll, Kingman Reef, Midway Atoll, Palmyra Atoll, and Wake Islands; and certain U.S. Government activities in the freely associated states of the Republic of the Marshall Islands, the Federated States of Micronesia, and the Republic of Palau.
X	Director, Office of Air Quality, U.S.	Alaska, Idaho, Oregon, Washington.

Region	Address	State
	Environmental Protection Agency, 1200 Sixth Avenue (OAQ-107), Seattle, WA 98101	

- (b) Section 112(d) of the Act directs the Administrator to delegate to each State, when appropriate, the authority to implement and enforce national emission standards for hazardous air pollutants for stationary sources located in such State. If the authority to implement and enforce a standard under this part has been delegated to a State, all information required to be submitted to EPA under paragraph (a) of this section shall also be submitted to the appropriate State agency (provided, that each specific delegation may exempt sources from a certain Federal or State reporting requirement). The Administrator may permit all or some of the information to be submitted to the appropriate State agency only, instead of to EPA and the State agency. If acceptable to both the Administrator and the owner or operator of a source, notifications and reports may be submitted on electronic media. The appropriate mailing address for those States whose delegation request has been approved is as follows:

(1) [Reserved]

(2) State of Alabama: Alabama Department of Environmental Management, P.O. Box 301463, Montgomery, Alabama 36130-1463.

(3) State of Alaska. (i) Alaska Department of Environmental Conservation (ADEC), 410 Willoughby Avenue, Suite 303, Juneau, AK 99801-1795, <http://www.state.ak.us/local/akpages/ENV.CONSERV/home.htm>.

(ii) See paragraph (c)(10) of this section for a table indicating the delegation status of National Emission Standards for Hazardous Air Pollutants for Region 10—Alaska, Idaho, Oregon, and Washington.

(4) Arizona:

Arizona Department of Environmental Quality, Suite #160, 1110 West Washington Street, Phoenix, AZ 85007.

Maricopa County Air Quality Department, 301 West Jefferson Street, Phoenix, AZ 85003.

Pima County Department of Environmental Quality, 33 North Stone Avenue, Suite 700, Tucson, AZ 85701.

Pinal County Air Quality Department, 31 North Pinal Street, Building F, Florence, AZ 85132.

Note 1 to paragraph (b)(4): For tables listing the delegation status of agencies in Region IX, see paragraph (c)(9) of this section.

(5) State of Arkansas: Chief, Division of Air Pollution Control, Arkansas Department of Pollution Control and Ecology, 8001 National Drive, P.O. Box 9583, Little Rock, AR 72209.

(6) California:

Amador Air District, 810 Court Street, Jackson, CA 95642.

Antelope Valley Air Quality Management District, 2551 W Avenue H, Lancaster, CA 93536.

Bay Area Air Quality Management District, 375 Beale Street, Suite 600, San Francisco, CA 94105.

Butte County Air Quality Management District, 629 Entler Avenue, Suite 15, Chico, CA 95928.

Calaveras County Air Pollution Control District, 891 Mountain Ranch Road, Building E, San Andreas, CA 95249.

Colusa County Air Pollution Control District, 100 Sunrise Blvd., Suite A, Colusa, CA 95932-3246.

El Dorado County Air Quality Management District, 330 Fair Lane, Placerville, CA 95667-4100.

Eastern Kern Air Pollution Control District, 2700 "M" Street, Suite 302, Bakersfield, CA 93301-2370.

Feather River Air Quality Management District, 541 Washington Avenue, Yuba City, CA 95991.

Glenn County Air Pollution Control District, 720 N Colusa Street, P.O. Box 351, Willows, CA 95988-0351.

Great Basin Unified Air Pollution Control District, 157 Short Street, Bishop, CA 93514-3537.

Imperial County Air Pollution Control District, 150 South Ninth Street, El Centro, CA 92243- 2839.

Lake County Air Quality Management District, 2617 S Main St., Lakeport, CA 95453-5405.

Lassen County Air Pollution Control District, 720 South St., Susanville, CA 96130.

Mariposa County Air Pollution Control District, P.O. Box 5, Mariposa, CA 95338.

Mendocino County Air Quality Management District, 306 E Gobbi Street, Ukiah, CA 95482-5511.

Modoc County Air Pollution Control District, 202 W 4th Street, Alturas, CA 96101.

Mojave Desert Air Quality Management District, 14306 Park Avenue, Victorville, CA 92392-2310.

Monterey Bay Air Resources District, 24580 Silver Cloud Court, Monterey, CA 93940.

North Coast Unified Air Quality Management District, 707 L Street, Eureka, CA 95501-3327.

Northern Sierra Air Quality Management District, 200 Litton Drive, Suite 320, Grass Valley, CA 95945-2509.

Northern Sonoma County Air Pollution Control District, 150 Matheson Street, Healdsburg, CA 95448-4908.

Placer County Air Pollution Control District, 110 Maple Street, Auburn, CA 95603.

Sacramento Metropolitan Air Quality Management District, 777 12th Street, Suite 300, Sacramento, CA 95814-1908.

San Diego County Air Pollution Control District, 10124 Old Grove Road, San Diego, CA 92131-1649.

San Joaquin Valley Air Pollution Control District, 1990 E Gettysburg, Fresno, CA 93726.

San Luis Obispo County Air Pollution Control District, 3433 Roberto Court, San Luis Obispo, CA 93401-7126.

Santa Barbara County Air Pollution Control District, 260 North San Antonio Road, Suite A, Santa Barbara, CA 93110-1315.

Shasta County Air Quality Management District, 1855 Placer Street, Suite 101, Redding, CA 96001-1759.

Siskiyou County Air Pollution Control District, 525 So. Foothill Drive, Yreka, CA 96097-3036.

South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, CA 91765-4182.

Tehama County Air Pollution Control District, P.O. Box 1169 (1834 Walnut Street), Red Bluff, CA 96080-0038.

Tuolumne County Air Pollution Control District, 2 South Green St., Sonora, CA 95370-4618.

Ventura County Air Pollution Control District, 4567 Telephone Road, 2nd Floor, Ventura, CA 93003-5417.

Yolo-Solano Air Quality Management District, 1947 Galileo Court, Suite 103, Davis, CA 95618.

Note 2 to paragraph (b)(6): For tables listing the delegation status of agencies in Region IX, see paragraph (c)(9) of this section.

(7) State of Colorado, Air Pollution Control Division, Department of Public Health and Environment, 4300 Cherry Creek Drive South, Denver, CO 80246-1530.

Note: For a table listing Region VIII's NESHAP delegation status, see paragraph (c) of this section.

(8) State of Connecticut: Compliance Analysis and Coordination Unit, Bureau of Air Management, Department of Energy and Environmental Protection, 79 Elm Street, 5th Floor, Hartford, CT 06106-5127.

(9) State of Delaware, Department of Natural Resources & Environmental Control, 89 Kings Highway, P.O. Box 1401, Dover, Delaware 19903.

(10) District of Columbia, Department of Public Health, Air Quality Division, 51 N Street, NE., Washington, DC 20002.

(11) State of Florida: Florida Department of Environmental Protection, Division of Air Resources Management, 2600 Blair Stone Road, MS 5500, Tallahassee, Florida 32399-2400.

(12) State of Georgia: Georgia Department of Natural Resources, Environmental Protection Division, Air Protection Branch, 4244 International Parkway, Suite 120, Atlanta, Georgia 30354.

(13) Hawaii:

Clean Air Branch, Hawaii Department of Health, 2827 Waimano Home Road, #130 Pearl City, HI 96782.

Note 4 to paragraph (b)(13): For tables listing the delegation status of agencies in Region IX, see paragraph (c)(9) of this section.

(14) State of Idaho. (i) Idaho Department of Environmental Conservation (IDEQ), 1410 N. Hilton, Boise, ID 83706, <http://www2.state.id.us/deq/>.

(ii) See paragraph (c)(10) of this section for a table indicating the delegation status of National Emission Standards for Hazardous Air Pollutants for Region 10—Alaska, Idaho, Oregon, and Washington.

(15) State of Illinois: Illinois Environmental Protection Agency, 1021 North Grand Avenue East, Springfield, Illinois 62794.

(16) State of Indiana: Indiana Department of Environmental Management, Office of Air Quality, 100 North Senate Avenue, Indianapolis, Indiana 46204.

(17) State of Iowa: Iowa Department of Natural Resources, Environmental Protection Division, Air Quality Bureau, 7900 Hickman Road, Suite 1, Urbandale, IA 50322.

(18) State of Kansas: Kansas Department of Health and Environment, Bureau of Air and Radiation, 1000 S.W. Jackson, Suite 310, Topeka, KS 66612-1366.

(19) Commonwealth of Kentucky: Kentucky Department for Environmental Protection, Division of Air Quality, 300 Sower Boulevard, 2nd Floor, Frankfort, Kentucky 40601 or local agency, Louisville Metro Air Pollution Control District, 701 W. Ormsby Ave. Suite 303, Louisville, Kentucky 40203.

(20) State of Louisiana: Louisiana Department of Environmental Quality, P.O. Box 4301, Baton Rouge, Louisiana 70821-4301.

(21) State of Maine: Maine Department of Environmental Protection, Bureau of Air Quality, 17 State House Station, Augusta, ME 04333-0017.

(22) State of Maryland, Department of the Environment, 1800 Washington Boulevard, Suite 705, Baltimore, Maryland 21230.

(23) Commonwealth of Massachusetts, Massachusetts Department of Environmental Protection, Division of Air and Climate Programs, One Winter Street, Boston, MA 02108.

(24) State of Michigan: Michigan Department of Natural Resources and Environment Quality, Air Quality Division, P.O. 30028, Lansing, Michigan 48909.

(25) State of Minnesota: Minnesota Pollution Control Agency, Division of Air Quality, 520 Lafayette Road North, St. Paul, Minnesota 55155.

(26) State of Mississippi: Hand Deliver or Courier: Mississippi Department of Environmental Quality, Office of Pollution Control, Air Division, 515 East Amite Street, Jackson, Mississippi 39201, Mailing Address: Mississippi Department of Environmental Quality, Office of Pollution Control, Air Division, P.O. Box 2261, Jackson, Mississippi 39225.

(27) State of Missouri: Missouri Department of Natural Resources, Division of Environmental Quality, P.O. Box 176, Jefferson City, MO 65102.

(28) State of Montana, Department of Environmental Quality, 1520 E. 6th Ave., PO Box 200901, Helena, MT 59620-0901.

Note: For a table listing Region VIII's NESHAP delegation status, see paragraph (c) of this section.

(29) State of Nebraska, Nebraska Department of Environmental Control, P.O. Box 94877, State House Station, Lincoln, NE 68509.

Lincoln-Lancaster County Health Department, Division of Environmental Health, 2200 St. Marys Avenue, Lincoln, NE 68502.

(30) Nevada:

Nevada Division of Environmental Protection, 901 South Stewart Street, Suite 4001, Carson City, NV 89701-5249.

Clark County Division of Air Quality, 500 S Grand Central Parkway, 1st Floor, P.O. Box 555210, Las Vegas, NV 89155-5210.

Northern Nevada Public Health, Air Quality Management Division, 1001 E 9th Street, Building B, Reno, NV 89512.

Note 6 to paragraph (b)(30): For tables listing the delegation status of agencies in Region IX, see paragraph (c)(9) of this section.

(31) State of New Hampshire, New Hampshire Department of Environmental Services, Air Resources Division, 29 Hazen Drive, P.O. Box 95, Concord, NH 03302-0095.

(32) State of New Jersey: New Jersey Department of Environmental Protection, John Fitch Plaza, P.O. Box 2807, Trenton, NJ 08625.

(33) *State of New Mexico*: New Mexico Environment Department, P.O. Box 5469, Santa Fe, New Mexico 87502-5469. For a list of delegated standards for New Mexico (excluding Bernalillo County and Indian country), see paragraph (c)(6) of this section.

(34) *New York*: New York State Department of Environmental Conservation, 50 Wolf Road, Albany, NY 12233, attention: Division of Air Resources.

(35) *State of North Carolina*: North Carolina Department of Environmental Quality, Division of Air Quality, 1641 Mail Service Center, Raleigh, North Carolina 27699-1641 or local agencies, Forsyth County Office of Environmental Assistance and Protection, 201 North Chestnut Street, Winston-Salem, North Carolina 27101-4120; Mecklenburg County Land Use and Environmental Services Agency, Air Quality, 2145 Suttle Avenue, Charlotte, North Carolina 28208; Western North Carolina Regional Air Quality Agency, 125 S. Lexington Ave., Suite 101, Asheville, North Carolina 28801-3661.

(36) *State of North Dakota*: North Dakota Department of Environmental Quality, 918 East Divide Avenue, Bismarck, ND 58501-1947.

Note: For a table listing Region VIII's NESHAP delegation status, see paragraph (c) of this section.

(37) *State of Ohio*:

(i) Medina, Summit and Portage Counties; Director, Akron Regional Air Quality Management District, 146 South High Street, Room 904, Akron, OH 44308.

(ii) Stark County; Director, Canton City Health Department, Air Pollution Control Division, 420 Market Avenue North, Canton, Ohio 44702-1544.

(iii) Butler, Clermont, Hamilton, and Warren Counties; Director, Hamilton County Department of Environmental Services, 250 William Howard Taft Road, Cincinnati, Ohio 45219-2660.

(iv) Cuyahoga County; Commissioner, Cleveland Department of Public Health, Division of Air Quality, 75 Erieview Plaza 2nd Floor, Cleveland, Ohio 44114.

(v) Clark, Darke, Greene, Miami, Montgomery, and Preble Counties; Director, Regional Air Pollution Control Agency, 117 South Main Street, Dayton, Ohio 45422-1280.

(vi) Lucas County and the City of Rossford (in Wood County); Director, City of Toledo, Division of Environmental Services, 348 South Erie Street, Toledo, OH 43604.

(vii) Adams, Brown, Lawrence, and Scioto Counties; Portsmouth Local Air Agency, 605 Washington Street, Third Floor, Portsmouth, OH 45662.

(viii) Allen, Ashland, Auglaize, Crawford, Defiance, Erie, Fulton, Hancock, Hardin, Henry, Huron, Marion, Mercer, Ottawa, Paulding, Putnam, Richland, Sandusky, Seneca, Van Wert Williams, Wood (Except City of Rossford), and Wyandot Counties; Ohio Environmental Protection Agency, Northwest District Office, Air Pollution Control, 347 North Dunbridge Road, Bowling Green, Ohio 43402.

(ix) Ashtabula, Carroll, Columbiana, Holmes, Lorain, and Wayne Counties; Ohio Environmental Protection Agency, Northeast District Office, Air Pollution Unit, 2110 East Aurora Road, Twinsburg, OH 44087.

(x) Athens, Belmont, Coshocton, Gallia, Guemsey, Harrison, Hocking, Jackson, Jefferson, Meigs, Monroe, Morgan, Muskingum, Noble, Perry, Pike, Ross, Tuscarawas, Vinton, and Washington Counties; Ohio Environmental Protection Agency, Southeast District Office, Air Pollution Unit, 2195 Front Street, Logan, OH 43138.

(xi) Champaign, Clinton, Highland, Logan, and Shelby Counties; Ohio Environmental Protection Agency, Southwest District Office, Air Pollution Unit, 401 East Fifth Street, Dayton, Ohio 45402-2911.

(xii) Delaware, Fairfield, Fayette, Franklin, Knox, Licking, Madison, Morrow, Pickaway, and Union Counties; Ohio Environmental Protection Agency, Central District Office, Air Pollution control, 50 West Town Street, Suite 700, Columbus, Ohio 43215.

(xiii) Geauga and Lake Counties; Lake County General Health District, Air Pollution Control, 33 Mill Street, Painesville, OH 44077.

(xiv) Mahoning and Trumbull Counties; Mahoning-Trumbull Air Pollution Control Agency, 345 Oak Hill Avenue, Suite 200, Youngstown, OH 44502.

(38) State of Oklahoma, Oklahoma Department of Environmental Quality, Air Quality Division, P.O. Box 1677, Oklahoma City, OK 73101-1677. For a list of delegated standards for Oklahoma see paragraph (c)(6) of this section.

(39) State of Oregon. (i) Oregon Department of Environmental Quality (ODEQ), 811 SW Sixth Ave, Portland, OR 97204-1390, <http://www.deq.state.or.us/>.

(ii) Lane Regional Air Pollution Authority (LRAPA), 1010 Main Street, Springfield, Oregon 97477, <http://www.lrapa.org>.

(iii) See paragraph (c)(10) of this section for a table indicating the delegation status of National Emission Standards for Hazardous Air Pollutants for Region 10—Alaska, Idaho, Oregon, and Washington.

(iv)-(vii) [Reserved]

(viii) Lane Regional Air Pollution Authority, 225 North Fifth, suite 501, Springfield, OR 97477.

(40)(i) City of Philadelphia, Department of Public Health, Air Management Services, 321 University Avenue, Philadelphia, Pennsylvania 19104.

(ii) Commonwealth of Pennsylvania, Department of Environmental Protection, Bureau of Air Quality Control, P.O. Box 8468, 400 Market Street, Harrisburg, Pennsylvania 17105.

(iii) Allegheny County Health Department, Bureau of Environmental Quality, Division of Air Quality, 301 39th Street, Pittsburgh, Pennsylvania 15201.

(41) State of Rhode Island, Rhode Island Department of Environmental Management, Office of Air Resources, 235 Promenade Street, Providence, RI 02908.

(42) State of South Carolina: South Carolina Department of Health and Environmental Control, 2600 Bull St., Columbia, South Carolina 29201.

(43) State of South Dakota, Department of Agriculture and Natural Resources, Air Quality Program, Joe Foss Building, 523 East Capitol, Pierre, SD 57501-3181.

Note: For a table listing Region VIII's NESHAPs delegation status, see paragraph (c) of this section.

(44) State of Tennessee: Tennessee Department of Environment and Conservation, Division of Air Pollution Control, William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 15th Floor, Nashville, Tennessee 37243, or local agencies, Knox County Air Quality Management—Department of Public Health, 140 Dameron Avenue, Knoxville, Tennessee 37917; Metro Public Health Department, Pollution Control Division, 2500 Charlotte Ave., Nashville, Tennessee 37209; Chattanooga-Hamilton County Air Pollution Control Bureau, 6125 Preservation Drive, Chattanooga, Tennessee 37416; Shelby County Health Department, Pollution Control Section, 814 Jefferson Avenue, Memphis, Tennessee 38105.

(45) State of Texas, Texas Air Control Board, 6330 Highway 290 East, Austin, TX 78723.

(46) State of Utah, Division of Air Quality, Department of Environmental Quality, P.O. Box 144820, Salt Lake City, UT 84114-4820.

Note: For a table listing Region VIII's NESHAP delegation status, see paragraph (c) of this section.

(47) State of Vermont, Agency of Natural Resources, Department of Environmental Conservation, Air Quality and Climate Division, Davis 2, One National Life Drive, Montpelier, VT 05620-3802.

(48) Commonwealth of Virginia, Department of Environmental Quality, 629 East Main Street, Richmond, Virginia 23219.

(49) State of Washington. (i) Washington State Department of Ecology (Ecology), P.O. Box 47600, Olympia, WA 98504-7600, <http://www.ecy.wa.gov/>.

(ii) Benton Clean Air Authority (BCAA), 650 George Washington Way, Richland, WA 99352-4289, <http://www.bcaa.net/>.

(iii) Northwest Air Pollution Control Authority (NWAPA), 1600 South Second St., Mount Vernon, WA 98273-5202, <http://www.nwair.org/>.

(iv) Olympic Air Pollution Control Authority (OAPCA), 909 Sleater-Kinney Road S.E., Suite 1, Lacey, WA 98503-1128, <http://www.oapca.org/>.

(v) Puget Sound Clean Air Agency (PSCAA), 110 Union Street, Suite 500, Seattle, WA 98101-2038, <http://www.pscleanair.org/>.

(vi) Spokane County Air Pollution Control Authority (SCAPCA), West 1101 College, Suite 403, Spokane, WA 9920, <http://www.scapca.org/>.

(vii) Southwest Clean Air Agency (SWCAA), 1308 NE 134th St., Vancouver, WA 98685-2747, <http://www.swcleanair.org/>.

(viii) Yakima Regional Clean Air Agency (YRCAA), Larson Building, Suite 1016, 6 South 2nd St., Yakima WA 98901, <http://co.yakima.wa.us/cleanair/default.htm>.

(ix) See paragraph (c)(10) of this section for a table indicating the delegation status of National Emission Standards for Hazardous Air Pollutants for Region 10—Alaska, Idaho, Oregon, and Washington.

(50) State of West Virginia, Department of Environmental Protection, Division of Air Quality, 601 57th Street, SE., Charleston, West Virginia 25304.

(51) State of Wisconsin: Wisconsin Department of Natural Resources, 101 South Webster St., P.O. Box 7921, Madison, Wisconsin 53707-7921. 101 South Webster St., P.O. Box 7921, Madison, Wisconsin 53707-7921.

(52) State of Wyoming, Air Quality Division, Department of Environmental Quality, 122 W. 25th St., Cheyenne, WY 82002.

(53) Territory of Guam: Guam Environmental Protection Agency, P.O. Box 22439 GMF, Barrigada, Guam 96921.

Note: For tables listing the delegation status of agencies in Region IX, see paragraph (c)(9) of this section.

(54) Commonwealth of Puerto Rico: Commonwealth of Puerto Rico Environmental Quality Board, P.O. Box 11785, Santurce, PR 00910.

(55) U.S. Virgin Islands: U.S. Virgin Islands Department of Conservation and Cultural Affairs, P.O. Box 578, Charlotte Amalie, St. Thomas, U.S. Virgin Islands 00801.

(56) American Samoa: American Samoa Environmental Protection Agency, P.O. Box PPA, Pago Pago, American Samoa 96799.

Note: For tables listing the delegation status of agencies in Region IX, see paragraph (d) of

this section.

(57) Commonwealth of the Northern Mariana Islands: CNMI Division of Environmental Quality, P.O. Box 501304, Saipan, MP 96950.

Note: For tables listing the delegation status of agencies in Region IX, see paragraph (d) of this section.

(c) The following tables list, by Region, the specific Part 61, National Emission Standards for Hazardous Air Pollutants that have been delegated to state and local agencies.

(1)

(i) Inactive waste disposal sites not operated after July 9, 1981 within the state of New Hampshire must comply with the New Hampshire Regulations at Env-Sw 2100 (incorporated by reference, see § 61.18).

(ii) The remainder of the sources subject to the asbestos provisions in subpart M of this part, except for those listed under paragraph (c)(1)(i) of this section, must comply with the New Hampshire Code of Administrative Rules: Chapter Env-A 1800, Asbestos Management and Control, effective as of May 5, 2017 as incorporated by reference, see § 61.18.

(2)-(5) [Reserved]

(6) The following lists the specific Part 61 standards that have been delegated unchanged to the air pollution control agencies in Region 6.

(i) [Reserved]

(ii) **Louisiana.** The Louisiana Department of Environmental Quality (LDEQ) has been delegated the following part 61 standards promulgated by EPA, as amended in the FEDERAL REGISTER through July 1, 2013. The (X) symbol is used to indicate each subpart that has been delegated.

DELEGATION STATUS FOR PART 61 STANDARDS—STATE OF LOUISIANA
[EXCLUDING INDIAN COUNTRY]

Subpart	Source category	LDEQ ¹
A	General Provisions	X
B	Radon Emissions From Underground Uranium Mines	
C	Beryllium	X
D	Beryllium Rocket Motor Firing	X
E	Mercury	X

¹ Program delegated to Louisiana Department of Environmental Quality (LDEQ).

Subpart	Source category	LDEQ 1
F	Vinyl Chloride	X
G	(Reserved)	
H	Emissions of Radionuclides Other Than Radon From Department of Energy Facilities	
I	Radionuclide Emissions From Federal Facilities Other Than Nuclear Regulatory Commission Licensees and Not Covered by Subpart H	
J	Equipment Leaks (Fugitive Emission Sources) of Benzene	X
K	Radionuclide Emissions From Elemental Phosphorus Plants	
L	Benzene Emissions From Coke By-Product Recovery Plants	X
M	Asbestos	X
N	Inorganic Arsenic Emissions From Glass Manufacturing Plants	X
O	Inorganic Arsenic Emissions From Primary Copper Smelters	X
P	Inorganic Arsenic Emissions From Arsenic Trioxide and Metallic Arsenic Production Facilities	X
Q	Radon Emissions From Department of Energy Facilities	
R	Radon Emissions From Phosphogypsum Stacks	
S	(Reserved)	
T	Radon Emissions From the Disposal of Uranium Mill Tailings	
U	(Reserved)	
V	Equipment Leaks (Fugitives Emission Sources)	X
W	Radon Emissions From Operating Mill Tailings	
X	(Reserved)	
Y	Benzene Emissions From Benzene Storage Vessels	X
Z-AA	(Reserved)	
BB	Benzene Emissions From Benzene Transfer Operations	X
CC-EE	(Reserved)	

¹ Program delegated to Louisiana Department of Environmental Quality (LDEQ).

Subpart	Source category	LDEQ 1
FF	Benzene Waste Operations	X

¹ Program delegated to Louisiana Department of Environmental Quality (LDEQ).

- (iii) **New Mexico.** The New Mexico Environment Department (NMED) has been delegated the following part 61 standards promulgated by the EPA, as amended in the FEDERAL REGISTER through January 15, 2017. The (X) symbol is used to indicate each subpart that has been delegated. The delegations are subject to all of the conditions and limitations set forth in Federal law and regulations.

**DELEGATION STATUS FOR NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR
POLLUTANTS (PART 61 STANDARDS) FOR NEW MEXICO
[EXCLUDING BERNALILLO COUNTY AND INDIAN COUNTRY]**

Subpart	Source category	NMED 1
A	General Provisions	X
B	Radon Emissions From Underground Uranium Mines	
C	Beryllium	X
D	Beryllium Rocket Motor Firing	X
E	Mercury	X
F	Vinyl Chloride	X
G	(Reserved)	
H	Emissions of Radionuclides Other Than Radon From Department of Energy Facilities	
I	Radionuclide Emissions From Federal Facilities Other Than Nuclear Regulatory Commission Licensees and Not Covered by Subpart H	
J	Equipment Leaks (Fugitive Emission Sources) of Benzene	X
K	Radionuclide Emissions From Elemental Phosphorus Plants	
L	Benzene Emissions From Coke By-Product Recovery Plants	X
M	Asbestos	X
N	Inorganic Arsenic Emissions From Glass Manufacturing Plants	X
O	Inorganic Arsenic Emissions From Primary Copper Smelters	X
P	Inorganic Arsenic Emissions From Arsenic Trioxide and Metallic Arsenic Production Facilities	X
Q	Radon Emissions From Department of Energy Facilities	

¹ Program delegated to New Mexico Environment Department (NMED).

Subpart	Source category	NMED 1
R	Radon Emissions From Phosphogypsum Stacks	
S	(Reserved)	
T	Radon Emissions From the Disposal of Uranium Mill Tailings	
U	(Reserved)	
V	Equipment Leaks (Fugitives Emission Sources)	X
W	Radon Emissions From Operating Mill Tailings	
X	(Reserved)	
Y	Benzene Emissions From Benzene Storage Vessels	X
Z-AA	(Reserved)	
BB	Benzene Emissions From Benzene Transfer Operations	X
CC-EE	(Reserved)	
FF	Benzene Waste Operations	X

¹ Program delegated to New Mexico Environment Department (NMED).

- (iv) **Oklahoma.** The Oklahoma Department of Environmental Quality (ODEQ) has been delegated the following part 61 standards promulgated by EPA, as amended in the FEDERAL REGISTER through June 30, 2022. The (X) symbol is used to indicate each subpart that has been delegated.

TABLE 4 TO PARAGRAPH (c)(6)(iv)—DELEGATION STATUS FOR NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (PART 61 STANDARDS) FOR OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY [APPLIES TO SOURCES LOCATED IN CERTAIN AREAS OF INDIAN COUNTRY]

Subpart	Source category	ODEQ 1
A	General Provisions	X
B	Radon Emissions From Underground Uranium Mines	
C	Beryllium	X
D	Beryllium Rocket Motor Firing	X
E	Mercury	X
F	Vinyl Chloride	X
G	(Reserved)	
H	Emissions of Radionuclides Other Than Radon From Department of Energy Facilities	

¹ Program delegated to Oklahoma Department of Environmental Quality (ODEQ).

Subpart	Source category	ODEQ 1
I	Radionuclide Emissions From Federal Facilities Other Than Nuclear Regulatory Commission Licensees and Not Covered by Subpart H	
J	Equipment Leaks (Fugitive Emission Sources) of Benzene	X
K	Radionuclide Emissions From Elemental Phosphorus Plants	
L	Benzene Emissions From Coke By-Product Recovery Plants	X
M	Asbestos	X
N	Inorganic Arsenic Emissions From Glass Manufacturing Plants	X
O	Inorganic Arsenic Emissions From Primary Copper Smelters	X
P	Inorganic Arsenic Emissions From Arsenic Trioxide and Metallic Arsenic Production Facilities	X
Q	Radon Emissions From Department of Energy Facilities	
R	Radon Emissions From Phosphogypsum Stacks	
S	(Reserved)	
T	Radon Emissions From the Disposal of Uranium Mill Tailings	
U	(Reserved)	
V	Equipment Leaks (Fugitives Emission Sources)	X
W	Radon Emissions From Operating Mill Tailings	
X	(Reserved)	
Y	Benzene Emissions From Benzene Storage Vessels	X
Z-AA	(Reserved)	
BB	Benzene Emissions From Benzene Transfer Operations	X
CC-EE	(Reserved)	
FF	Benzene Waste Operations	X

¹ Program delegated to Oklahoma Department of Environmental Quality (ODEQ).

(v) [Reserved]

- (vi) **Albuquerque-Bernalillo County, New Mexico.** The Albuquerque-Bernalillo County Air Quality Control Board (ABCAQCB) has been delegated the following part 61 standards promulgated by EPA, as amended through January 23, 2017. The (X) symbol is used to indicate each subpart that has been delegated.

**DELEGATION STATUS FOR NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR
POLLUTANTS (PART 61 STANDARDS) FOR ALBUQUERQUE-BERNALILLO COUNTY AIR
QUALITY CONTROL BOARD
[EXCLUDING INDIAN COUNTRY] ¹**

Subpart	Source category	ABCAQCB
A	General Provisions	X
B	Radon Emissions From Underground Uranium Mines	
C	Beryllium	X
D	Beryllium Rocket Motor Firing	X
E	Mercury	X
F	Vinyl Chloride	X
G	(Reserved)	
H	Emissions of Radionuclides Other Than Radon From Department of Energy Facilities	
I	Radionuclide Emissions From Federal Facilities Other Than Nuclear Regulatory Commission Licensees and Not Covered by Subpart H	
J	Equipment Leaks (Fugitive Emission Sources) of Benzene	X
K	Radionuclide Emissions From Elemental Phosphorus Plants	
L	Benzene Emissions From Coke By-Product Recovery Plants	X
M	Asbestos	X
N	Inorganic Arsenic Emissions From Glass Manufacturing Plants	X
O	Inorganic Arsenic Emissions From Primary Copper Smelters	X
P	Inorganic Arsenic Emissions From Arsenic Trioxide and Metallic Arsenic Production Facilities	X
Q	Radon Emissions From Department of Energy Facilities	
R	Radon Emissions From Phosphogypsum Stacks	
S	(Reserved)	
T	Radon Emissions From the Disposal of Uranium Mill Tailings	
U	(Reserved)	
V	Equipment Leaks (Fugitives Emission Sources)	X
W	Radon Emissions From Operating Mill Tailings	
X	(Reserved)	
Y	Benzene Emissions From Benzene Storage Vessels	X

¹ Program delegated to Albuquerque-Bernalillo County Air Quality Control Board (ABCAQCB).

Subpart	Source category	ABCAQCB
Z-AA	(Reserved)	
BB	Benzene Emissions From Benzene Transfer Operations	X
CC-EE	(Reserved)	
FF	Benzene Waste Operations	X

¹ Program delegated to Albuquerque-Bernalillo County Air Quality Control Board (ABCAQCB).

(7) [Reserved]

(8) The most current delegation status table for National Emissions Standards for Hazardous Air Pollutants for Region VIII can be found online at <http://www.epa.gov/region8/air-program>. The following is a table indicating the delegation status of National Emissions Standards for Hazardous Air Pollutants in Region VIII. The recodification and delegation for North Dakota's August 6, 2018 submittal is effective as of April 30, 2019, as detailed in EPA's delegation letter of February 26, 2019.

REGION VIII—DELEGATION STATUS OF NATIONAL EMISSIONS STANDARDS FOR HAZARDOUS AIR POLLUTANTS ¹

Subpart	CO	MT	ND	SD	UT ₂	WY
A General Provisions	*	*	*	*	*	
B Radon Emissions from Underground Uranium Mines					*	
C Beryllium	*	*			*	
D Beryllium Rocket Motor Firing	*	*			*	
E Mercury	*	*			*	
F Vinyl Chloride	*	*			*	

*Indicates approval of delegation of subpart to state.

¹ Specific authorities which may not be delegated include, but are not limited to §§ 61.04(b) and (c), 61.05(c), 61.11, 61.12(d), 61.13(h)(1)(ii), 61.14(d), 61.14(g)(1)(ii), 61.16, 61.112(c), 61.164(a)(2) and (3), 61.172(b)(2)(ii)(B) and (C), 61.174(a)(2) and (3), 61.242-1(c)(2), 61.244, and all authorities listed as not delegable in each individual subpart delegated to the state.

² Indicates approval of National Emissions Standards for Hazardous Air Pollutants as part of the State Implementation Plan (SIP) with the exception of the radionuclide NESHAP subparts B, Q, R, T and W which were approved through section 112(l) of the Clean Air Act.

³ Delegation only for asbestos demolition, renovation, spraying, manufacturing, and fabricating operations, insulating materials, waste disposal for demolition, renovation, spraying, manufacturing and fabricating operations, inactive waste disposal sites for manufacturing and fabricating operations, and operations that convert asbestos-containing waste material into nonasbestos (asbestos-free) material.

Subpart	CO	MT	ND	SD	UT ₂	WY
H Emissions of Radionuclides other than Radon from Department of Energy Facilities.						
I Radionuclide Emissions from Facilities Licensed by the Nuclear Regulatory Commission and Federal Facilities not covered by Subpart H.						
J Equipment Leaks (Fugitive Emission Sources) of Benzene	*	*	*		*	
K Radionuclide Emissions from Elemental Phosphorus Plants.						
L Benzene Emissions from Coke By-Product Recovery Plants		*			*	
M Asbestos	*	*	*	*	*	* ³
N Inorganic Arsenic Emissions from Glass Manufacturing Plants		*			*	
O Inorganic Arsenic Emissions from Primary Copper Smelters		*			*	
P Inorganic Arsenic Emissions from Arsenic Trioxide and Metallic Arsenic Production Facilities		*			*	
Q Radon Emissions from Department of Energy Facilities					*	
R Radon Emission from Phosphogypsum Stacks					*	
T Radon Emissions from the Disposal of Uranium Mill Tailings					*	
V Equipment Leaks (Fugitive Emission Sources)		*	*		*	
W Radon Emissions from Operating Mill Tailings					*	
Y Benzene Emissions from Benzene Storage Vessels		*			*	
BB Benzene Waste Operations		*			*	
FF Benzene Waste Operations		*	*		*	

*Indicates approval of delegation of subpart to state.

¹ Specific authorities which may not be delegated include, but are not limited to §§ 61.04(b) and (c), 61.05(c), 61.11, 61.12(d), 61.13(h)(1)(ii), 61.14(d), 61.14(g)(1)(ii), 61.16, 61.112(c), 61.164(a)(2) and (3), 61.172(b)(2)(ii)(B) and (C), 61.174(a)(2) and (3), 61.242-1(c)(2), 61.244, and all authorities listed as not delegable in each individual subpart delegated to the state.

² Indicates approval of National Emissions Standards for Hazardous Air Pollutants as part of the State Implementation Plan (SIP) with the exception of the radionuclide NESHAP subparts B, Q, R, T and W which were approved through section 112(l) of the Clean Air Act.

³ Delegation only for asbestos demolition, renovation, spraying, manufacturing, and fabricating operations, insulating materials, waste disposal for demolition, renovation, spraying, manufacturing and fabricating operations, inactive waste disposal sites for manufacturing and fabricating operations, and operations that convert asbestos-containing waste material into nonasbestos (asbestos-free) material.

- (9) The following tables list the specific Part 61 standards that have been delegated unchanged to the air pollution control agencies in Region IX. The (X) symbol is used to indicate each standard that has been delegated. The following provisions of this subpart are not delegated: §§ 61.04(b), 61.04(c), 61.05(c), 61.11, 61.12(d), 61.13(h)(1)(ii), 61.14(d), 61.14(g)(1)(ii), and 61.16.

(i) **Arizona.** The following table identifies delegations for Arizona:

TABLE 6 TO PARAGRAPH (c)(9)(i)—DELEGATION STATUS FOR NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR ARIZONA

	Subpart	Air pollution control agency			
		Arizona DEQ	Maricopa County	Pima County	Pinal County
A	General Provisions	X	X	X	X
B	Radon Emissions From Underground Uranium Mines				
C	Beryllium	X	X	X	X
D	Beryllium Rocket Motor Firing	X	X	X	X
E	Mercury	X	X	X	X
F	Vinyl Chloride	X	X	X	X
G	(Reserved)				
H	Emissions of Radionuclides Other Than Radon From Department of Energy Facilities				
I	Radionuclide Emissions From Federal Facilities Other Than Nuclear Regulatory Commission Licensees and Not Covered by Subpart H				
J	Equipment Leaks (Fugitive Emission Sources) of Benzene	X	X	X	X
K	Radionuclide Emissions From Elemental Phosphorus Plants				
L	Benzene Emissions from Coke By-Product Recovery Plants	X	X	X	X
M	Asbestos	X	X	X	X
N	Inorganic Arsenic Emissions From Glass Manufacturing Plants	X	X	X	
O	Inorganic Arsenic Emissions From Primary Copper Smelters	X		X	
P	Inorganic Arsenic Emissions From Arsenic Trioxide and Metallic Arsenic Production Facilities	X	X		
Q	Radon Emissions From Department of Energy Facilities				
R	Radon Emissions From Phosphogypsum Stacks				
S	(Reserved)				
T	Radon Emissions From the Disposal of Uranium Mill Tailings				
U	(Reserved)				
V	Equipment Leaks (Fugitive Emission Sources)	X	X	X	X

	Subpart	Air pollution control agency			
		Arizona DEQ	Maricopa County	Pima County	Pinal County
W	Radon Emissions From Operating Mill Tailings				
X	(Reserved)				
Y	Benzene Emissions From Benzene Storage Vessels	X	X	X	X
Z-	(Reserved)				
AA					
BB	Benzene Emissions From Benzene Transfer Operations	X	X	X	X
CC-	(Reserved)				
EE					
FF	Benzene Waste Operations	X	X	X	X

(ii) **California.** The following tables identify delegations for California:

(A) Delegations for Amador County Air Pollution Control District, Antelope Valley Air Quality Management District, Bay Area Air Quality Management District, and Butte County Air Quality Management District are shown in the following table:

DELEGATION STATUS FOR NATIONAL EMISSIONS STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR AMADOR COUNTY APCD, ANTELOPE VALLEY AQMD, BAY AREA AQMD, AND BUTTE COUNTY AQMD

	Subpart	Air pollution control agency			
		Amador County APCD	Antelope Valley AQMD	Bay Area AQMD	Butte County AQMD
A	General Provisions		X	X	
B	Radon Emissions From Underground Uranium Mines				
C	Beryllium		X	X	
D	Beryllium Rocket Motor Firing		X	X	
E	Mercury		X	X	
F	Vinyl Chloride		X	X	
G	(Reserved)				
H	Emissions of Radionuclides Other Than Radon From Department of Energy Facilities				
I	Radionuclide Emissions From Federal Facilities Other				

	Subpart	Air pollution control agency			
		Amador County APCD	Antelope Valley AQMD	Bay Area AQMD	Butte County AQMD
	Than Nuclear Regulatory Commission Licensees and Not Covered by Subpart H				
J	Equipment Leaks (Fugitive Emission Sources) of Benzene		X		
K	Radionuclide Emissions From Elemental Phosphorus Plants				
L	Benzene Emissions from Coke By-Product Recovery Plants		X	X	
M	Asbestos		X	X	
N	Inorganic Arsenic Emissions From Glass Manufacturing Plants		X		
O	Inorganic Arsenic Emissions From Primary Copper Smelters		X		
P	Inorganic Arsenic Emissions From Arsenic Trioxide and Metallic Arsenic Production Facilities		X		
Q	Radon Emissions From Department of Energy Facilities				
R	Radon Emissions From Phosphogypsum Stacks				
S	(Reserved)				
T	Radon Emissions From the Disposal of Uranium Mill Tailings				
U	(Reserved)				
V	Equipment Leaks (Fugitive Emission Sources)		X		
W	Radon Emissions From Operating Mill Tailings				
X	(Reserved)				
Y	Benzene Emissions From Benzene Storage Vessels		X	X	
Z-	(Reserved)				
AA					
BB	Benzene Emissions From Benzene Transfer Operations		X	X	
CC-	(Reserved)				
EE					
FF	Benzene Waste Operations		X	X	

(B) [Reserved]

- (C) Delegations for Glenn County Air Pollution Control District, Great Basin Unified Air Pollution Control District, Imperial County Air Pollution Control District, and Kern County Air Pollution Control District are shown in the following table:

DELEGATION STATUS FOR NATIONAL EMISSIONS STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR GLENN COUNTY APCD, GREAT BASIN UNIFIED APCD, IMPERIAL COUNTY APCD, AND KERN COUNTY APCD

	Subpart	Air Pollution Control Agency			
		Glenn County APCD	Great Basin Unified APCD	Imperial County APCD	Kern County APCD
A	General Provisions	X	X		
B	Radon Emissions From Underground Uranium				
C	Beryllium	X	X		
D	Beryllium Rocket Motor Firing	X	X		
E	Mercury	X	X		
F	Vinyl Chloride	X			
G	(Reserved)				
H	Emissions of Radionuclides Other Than Radon From Department of Energy Facilities				
I	Radionuclide Emissions From Federal Facilities Other Than Nuclear Regulatory Commission Licensees and Not Covered by Subpart H				
J	Equipment Leaks (Fugitive Emission Sources) of Benzene	X			
K	Radionuclide Emissions From Elemental Phosphorus Plants				
L	Benzene Emissions from Coke By-Product Recovery Plants	X			
M	Asbestos	X	X		
N	Inorganic Arsenic Emissions From Glass Manufacturing Plants	X			
O	Inorganic Arsenic Emissions From Primary Copper Smelters	X			
P	Inorganic Arsenic Emissions From Arsenic Trioxide and Metallic Arsenic Production Facilities	X			
Q	Radon Emissions From Department of Energy Facilities				
R	Radon Emissions From Phosphogypsum Stacks				

	Subpart	Air Pollution Control Agency			
		Glenn County APCD	Great Basin Unified APCD	Imperial County APCD	Kern County APCD
S	(Reserved)				
T	Radon Emissions From the Disposal of Uranium Mill Tailings				
U	(Reserved)				
V	Equipment Leaks (Fugitive Emission Sources)	X			
W	Radon Emissions From Operating Mill Tailings				
X	(Reserved)	.			
Y	Benzene Emissions From Benzene Storage Vessels	X			
Z-	(Reserved)				
AA					
BB	Benzene Emissions From Benzene Transfer Operations	X			
CC-	(Reserved)				
EE					
FF	Benzene Waste Operations	X			

(D) Delegations for Lake County Air Quality Management District, Lassen County Air Pollution Control District, Mariposa County Air Pollution Control District, and Mendocino County Air Pollution Control District are shown in the following table:

DELEGATION STATUS FOR NATIONAL EMISSIONS STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR LAKE COUNTY AIR QUALITY MANAGEMENT DISTRICT, LASSEN COUNTY AIR POLLUTION CONTROL DISTRICT, MARIPOSA COUNTY AIR POLLUTION CONTROL DISTRICT, AND MENDOCINO COUNTY AIR POLLUTION CONTROL DISTRICT

	Subpart	Air pollution control agency			
		Lake County AQMD	Lassen County APCD	Mariposa County AQMD	Mendocino County AQMD
A	General Provisions	X		X	
B	Radon Emissions From Underground Uranium				
C	Beryllium	X			X
D	Beryllium Rocket Motor Firing	X			X

	Subpart	Air pollution control agency			
		Lake County AQMD	Lassen County APCD	Mariposa County AQMD	Mendocino County AQMD
E	Mercury	X			X
F	Vinyl Chloride				X
G	(Reserved)				
H	Emissions of Radionuclides Other Than Radon From Department of Energy Facilities				
I	Radionuclide Emissions From Federal Facilities Other Than Nuclear Regulatory Commission Licensees and Not Covered by Subpart H				
J	Equipment Leaks (Fugitive Emission Sources) of Benze				
K	Radionuclide Emissions From Elemental Phosphorus Plants				
L	Benzene Emissions from Coke By-Product Recovery Plants				
M	Asbestos	X			X

(E) Delegations for Modoc Air Pollution Control District, Mojave Desert Air Quality Management District, Monterey Bay Unified Air Pollution Control District, and North Coast Unified Air Quality Management District are shown in the following table:

DELEGATION STATUS FOR NATIONAL EMISSIONS STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR MODOC COUNTY APCD, MOJAVE DESERT AQMD, MONTEREY BAY UNIFIED APCD, AND NORTH COAST UNIFIED AQMD

	Subpart	Air pollution control agency			
		Modoc County APCD	Mojave Desert AQMD	Monterey Bay Unified APCD	North Coast Unified AQMD
A	General Provisions	X	X	X	X
B	Radon Emissions From Underground Uranium Mines				
C	Beryllium	X	X	X	X
D	Beryllium Rocket Motor Firing	X	X	X	X

	Subpart	Air pollution control agency			
		Modoc County APCD	Mojave Desert AQMD	Monterey Bay Unified APCD	North Coast Unified AQMD
E	Mercury	X	X	X	X
F	Vinyl Chloride	X	X	X	X
G	(Reserved)				
H	Emissions of Radionuclides Other Than Radon From Department of Energy Facilities				
I	Radionuclide Emissions From Federal Facilities Other Than Nuclear Regulatory Commission Licensees and Not Covered by Subpart H				
J	Equipment Leaks (Fugitive Emission Sources) of Benzene	X	X	X	X
K	Radionuclide Emissions From Elemental Phosphorus Plants				
L	Benzene Emissions from Coke By-Product Recovery Plants		X	X	X
M	Asbestos	X	X	X	X
N	Inorganic Arsenic Emissions From Glass Manufacturing Plants		X	X	
O	Inorganic Arsenic Emissions From Primary Copper Smelters	X	X	X	
P	Inorganic Arsenic Emissions From Arsenic Trioxide and Metallic Arsenic Production Facilities	X	X	X	
Q	Radon Emissions From Department of Energy Facilities				
R	Radon Emissions From Phosphogypsum Stacks				
S	(Reserved)				
T	Radon Emissions From the Disposal of Uranium Mill Tailings				
U	(Reserved)				
V	Equipment Leaks (Fugitive Emission Sources)	X	X	X	X
W	Radon Emissions From Operating Mill Tailings				
X	(Reserved)				
Y	Benzene Emissions From Benzene Storage Vessels		X	X	X
Z-	(Reserved)				
AA					
BB	Benzene Emissions From Benzene Transfer Operations		X	X	
CC-	(Reserved)				

	Subpart	Air pollution control agency			
		Modoc County APCD	Mojave Desert AQMD	Monterey Bay Unified APCD	North Coast Unified AQMD
EE	Benzene Waste Operations				
FF			X	X	

(F) Delegations for Northern Sierra Air Quality Management District, Northern Sonoma County Air Pollution Control District, Placer County Air Pollution Control District, and Sacramento Metropolitan Air Quality Management District are shown in the following table:

DELEGATION STATUS FOR NATIONAL EMISSIONS STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR NORTHERN SIERRA AIR QUALITY MANAGEMENT DISTRICT, NORTHERN SONOMA COUNTY AIR POLLUTION CONTROL DISTRICT, PLACER COUNTY AIR POLLUTION CONTROL DISTRICT, AND SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

	Subpart	Air pollution control agency			
		Northern Sierra AQMD	Northern Sonoma County APCD	Placer County APCD	Sacramento Metro AQMD
A	General Provisions		X		
B	Radon Emissions From Underground Uranium				
C	Beryllium		X		
D	Beryllium Rocket Motor Firing		X		
E	Mercury		X		
F	Vinyl Chloride		X		X
G	(Reserved)				
H	Emissions of Radionuclides Other Than Radon From Department of Energy Facilities				
I	Radionuclide Emissions From Federal Facilities Other Than Nuclear Regulatory Commission Licensees and Not Covered by Subpart H				
J	Equipment Leaks (Fugitive Emission Sources) of Benzene				
K	Radionuclide Emissions From Elemental				

	Subpart	Air pollution control agency			
		Northern Sierra AQMD	Northern Sonoma County APCD	Placer County APCD	Sacramento Metro AQMD
L	Phosphorus Plants Benzene Emissions from Coke By-Product Recovery Plants				
M	Asbestos		X		X

(G) Delegations for San Diego County Air Pollution Control District, San Joaquin Valley Unified Air Pollution Control District, San Luis Obispo County Air Pollution Control District, and Santa Barbara County Air Pollution Control District are shown in the following table:

DELEGATION STATUS FOR NATIONAL EMISSIONS STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT, SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT, SAN LUIS OBISPO COUNTY AIR POLLUTION CONTROL DISTRICT, AND SANTA BARBARA COUNTY AIR POLLUTION CONTROL DISTRICT

	Subpart	Air Pollution Control Agency			
		San Diego County APCD	San Joaquin Valley APCD	San Luis Obispo County APCD	Santa Barbara County APCD
A	General Provisions	X	X	X	X
B	Radon Emissions From Underground Uranium				
C	Beryllium	X	X	X	X
D	Beryllium Rocket Motor Firing	X	X	X	X
E	Mercury	X	X	X	X
F	Vinyl Chloride	X	X	X	X
G	(Reserved)				
H	Emissions of Radionuclides Other Than Radon From Department of Energy Facilities				
I	Radionuclide Emissions From Federal Facilities Other Than Nuclear Regulatory Commission Licensees and Not Covered by Subpart H				
J	Equipment Leaks (Fugitive Emission Sources) of		X	X	X

	Subpart	Air Pollution Control Agency			
		San Diego County APCD	San Joaquin Valley APCD	San Luis Obispo County APCD	Santa Barbara County APCD
	Benzene				
K	Radionuclide Emissions From Elemental Phosphorus Plants		X		
L	Benzene Emissions from Coke By-Product Recovery Plants		X	X	X
M	Asbestos	X	X	X	X
N	Inorganic Arsenic Emissions From Glass Manufacturing Plants		X	X	X
O	Inorganic Arsenic Emissions From Primary Copper Smelters		X	X	X
P	Inorganic Arsenic Emissions From Arsenic Trioxide and Metallic Arsenic Production Facilities		X	X	X
Q	Radon Emissions From Department of Energy Facilities				
R	Radon Emissions From Phosphogypsum Stacks				
S	(Reserved)				
T	Radon Emissions From the Disposal of Uranium Mill Tailings				
U	(Reserved)				
V	Equipment Leaks (Fugitive Emission Sources)		X	X	X
W	Radon Emissions From Operating Mill Tailings				
X	(Reserved)				
Y	Benzene Emissions From Benzene Storage Vessels		X	X	X
Z- AA	(Reserved)				
BB	Benzene Emissions From Benzene Transfer Operations		X	X	X
CC- EE	(Reserved)				

	Subpart	Air Pollution Control Agency			
		San Diego County APCD	San Joaquin Valley APCD	San Luis Obispo County APCD	Santa Barbara County APCD
FF	Benzene Waste Operations		X	X	X

(H) Delegations for Shasta County Air Quality Management District, Siskiyou County Air Pollution Control District, South Coast Air Quality Management District, and Tehama County Air Pollution Control District are shown in the following table:

DELEGATION STATUS FOR NATIONAL EMISSIONS STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SHASTA COUNTY AIR QUALITY MANAGEMENT DISTRICT, SISKIYOU COUNTY AIR POLLUTION CONTROL DISTRICT, SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT, AND TEHAMA COUNTY AIR POLLUTION CONTROL DISTRICT

	Subpart	Air pollution control agency			
		Shasta County AQMD	Siskiyou County APCD	South Coast AQMD	Tehama County APCD
A	General Provisions			X	
B	Radon Emissions From Underground Uranium				
C	Beryllium	X		X	
D	Beryllium Rocket Motor Firing	X		X	
E	Mercury	X		X	
F	Vinyl Chloride	X		X	
G	(Reserved)				
H	Emissions of Radionuclides Other Than Radon From Department of Energy Facilities				
I	Radionuclide Emissions From Federal Facilities Other Than Nuclear Regulatory Commission Licensees and Not Covered by Subpart H				
J	Equipment Leaks (Fugitive Emission Sources) of Benzene			X	
K	Radionuclide Emissions From Elemental Phosphorus Plants				
L	Benzene Emissions from Coke By-Product Recovery Plants			X	

	Subpart	Air pollution control agency			
		Shasta County AQMD	Siskiyou County APCD	South Coast AQMD	Tehama County APCD
M	Asbestos	X		X	
N	Inorganic Arsenic Emissions From Glass Manufacturing Plants			X	
O	Inorganic Arsenic Emissions From Primary Copper Smelters			X	
P	Inorganic Arsenic Emissions From Arsenic Trioxide and Metallic Arsenic Production Facilities			X	
Q	Radon Emissions From Department of Energy Facilities				
R	Radon Emissions From Phosphogypsum Stacks				
S	(Reserved)				
T	Radon Emissions From the Disposal of Uranium Mill Tailings				
U	(Reserved)				
V	Equipment Leaks (Fugitive Emission Sources)			X	
W	Radon Emissions From Operating Mill Tailings				
X	(Reserved)				
Y	Benzene Emissions From Benzene Storage Vessels			X	
Z-	(Reserved)				
AA					
BB	Benzene Emissions From Benzene Transfer Operations			X	
CC-	(Reserved)				
EE					

	Subpart	Air pollution control agency			
		Shasta County AQMD	Siskiyou County APCD	South Coast AQMD	Tehama County APCD
FF	Benzene Waste Operations			X	

- (I) Delegations for Tuolumne County Air Pollution Control District, Ventura County Air Pollution Control District, and Yolo-Solano Air Quality Management District are shown in the following table:

DELEGATION STATUS FOR NATIONAL EMISSIONS STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR TUOLUMNE COUNTY AIR POLLUTION CONTROL DISTRICT, VENTURA COUNTY AIR POLLUTION CONTROL DISTRICT, AND YOLO-SOLANO AIR QUALITY MANAGEMENT DISTRICT

	Subpart	Air Pollution Control Agency		
		Tuolumne County APCD	Ventura County APCD	Yolo-Solano AQMD
A	General Provisions	X		
B	Radon Emissions From Underground Uranium			
C	Beryllium	X		
D	Beryllium Rocket Motor Firing	X		
E	Mercury	X	X	
F	Vinyl Chloride	X		
G	(Reserved)			
H	Emissions of Radionuclides Other Than Radon From Department of Energy Facilities			
I	Radionuclide Emissions From Federal Facilities Other Than Nuclear Regulatory Commission Licensees and Not Covered by Subpart H			
J	Equipment Leaks (Fugitive Emission Sources) of Benzene	X		
K	Radionuclide Emissions From Elemental Phosphorus Plants			
L	Benzene Emissions from Coke By-Product Recovery Plants	X		
M	Asbestos	X	X	
N	Inorganic Arsenic Emissions From Glass Manufacturing Plants	X		
O	Inorganic Arsenic Emissions From Primary Copper Smelters	X		

	Subpart	Air Pollution Control Agency		
		Tuolumne County APCD	Ventura County APCD	Yolo- Solano AQMD
P	Inorganic Arsenic Emissions From Arsenic Trioxide and Metallic Arsenic Production Facilities	X		
Q	Radon Emissions From Department of Energy Facilities			
R	Radon Emissions From Phosphogypsum Stacks			
S	(Reserved)			
T	Radon Emissions From the Disposal of Uranium Mill Tailings			
U	(Reserved)			
V	Equipment Leaks (Fugitive Emission Sources)	X		
W	Radon Emissions From Operating Mill Tailings			
X	(Reserved)			
Y	Benzene Emissions From Benzene Storage Vessels	X		
Z-	(Reserved)			
AA				
BB	Benzene Emissions From Benzene Transfer Operations	X		
CC-	(Reserved)			
EE				
FF	Benzene Waste Operations	X		

(iii) Hawaii. The following table identifies delegations as of October 21, 2004:

DELEGATION STATUS FOR NATIONAL EMISSIONS STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR HAWAII

	Subpart	Hawaii
A	General Provisions	X
B	Radon Emissions From Underground Uranium	
C	Beryllium	X
D	Beryllium Rocket Motor Firing	X
E	Mercury	X
F	Vinyl Chloride	
G	(Reserved)	
H	Emissions of Radionuclides Other Than Radon From Department of Energy Facilities	
I	Radionuclide Emissions From Federal Facilities Other Than Nuclear Regulatory Commission Licensees and Not Covered by Subpart H	

	Subpart	Hawaii
J	Equipment Leaks (Fugitive Emission Sources) of Benzene	X
K	Radionuclide Emissions From Elemental Phosphorus Plants	
L	Benzene Emissions from Coke By-Product Recovery Plants	
M	Asbestos	X
N	Inorganic Arsenic Emissions From Glass Manufacturing Plants	
O	Inorganic Arsenic Emissions From Primary Copper Smelters	
P	Inorganic Arsenic Emissions From Arsenic Trioxide and Metallic Arsenic Production Facilities	
Q	Radon Emissions From Department of Energy Facilities	
R	Radon Emissions From Phosphogypsum Stacks	
S	(Reserved)	
T	Radon Emissions From the Disposal of Uranium Mill Tailings	
U	(Reserved)	
V	Equipment Leaks (Fugitive Emission Sources)	X
W	Radon Emissions From Operating Mill Tailings	
X	(Reserved)	
Y	Benzene Emissions From Benzene Storage Vessels	X
Z-	(Reserved)	
AA		
BB	Benzene Emissions From Benzene Transfer Operations	X
CC-	(Reserved)	
EE		
FF	Benzene Waste Operations	X

(iv) Nevada. The following table identifies delegations for Nevada:

TABLE 19—TO PARAGRAPH (c)(9)(iv)—DELEGATION STATUS FOR NATIONAL EMISSIONS STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR NEVADA

	Subpart	Air pollution control agency		
		Nevada DEP	Clark County	Washoe County
A	General Provisions	X	X	
B	Radon Emissions From Underground Uranium Mines			
C	Beryllium	X	X	X

	Subpart	Air pollution control agency		
		Nevada DEP	Clark County	Washoe County
D	Beryllium Rocket Motor Firing	X	X	
E	Mercury	X	X	
F	Vinyl Chloride	X	X	
G	(Reserved)			
H	Emissions of Radionuclides Other Than Radon From Department of Energy Facilities	X		
I	Radionuclide Emissions From Federal Facilities Other Than Nuclear Regulatory Commission Licensees and Not Covered by Subpart H	X		
J	Equipment Leaks (Fugitive Emission Sources) of Benzene	X	X	
K	Radionuclide Emissions From Elemental Phosphorus Plants	X		
L	Benzene Emissions from Coke By-Product Recovery Plants	X	X	
M	Asbestos		X	X
N	Inorganic Arsenic Emissions From Glass Manufacturing Plants	X	X	
O	Inorganic Arsenic Emissions From Primary Copper Smelters	X	X	
P	Inorganic Arsenic Emissions From Arsenic Trioxide and Metallic Arsenic Production Facilities	X	X	
Q	Radon Emissions From Department of Energy Facilities			
R	Radon Emissions From Phosphogypsum Stacks			
S	(Reserved)			
T	Radon Emissions From the Disposal of Uranium Mill Tailings			
U	(Reserved)			
V	Equipment Leaks (Fugitive Emission Sources)	X	X	
W	Radon Emissions From Operating Mill Tailings			
X	(Reserved)			
Y	Benzene Emissions From Benzene Storage Vessels	X	X	
Z-	(Reserved)			
AA				
BB	Benzene Emissions From Benzene Transfer Operations	X	X	
CC-	(Reserved)			
EE				
FF	Benzene Waste Operations	X	X	

- (10) The following table lists the delegation status of specific Part 61 Subparts that have been delegated unchanged to state and local air pollution control agencies in Region 10. An "X" indicates the subpart has been delegated, subject to all the conditions and limitations set forth in federal law, regulations, policy, guidance, and determinations. Some authorities cannot be delegated and are

retained by EPA. These include certain General Provisions authorities and specific parts of some standards. The dates noted at the end of this table indicate the effective dates of federal rules that have been delegated. Any amendments made to these rules after this effective date are not delegated.

DELEGATION STATUS FOR PART 61 STANDARDS—REGION 10 ¹

Subparts ²	AK	ID	OR		WA								
	ADEC 3	IDEQ 4	ODEQ 5	LRAPA 6	Ecology 7	BCAA 8	NWCAA 9	ORCAA 10	PSCAA 11	SWCAA 12	SCAPCA 13	YRCAA 14	WDOH 15
A General Provisions ¹⁶	X ¹⁶	X ¹⁶	X ¹⁶	X ¹⁶	X ¹⁶	X ¹⁶	X ¹⁶	X ¹⁶	X ¹⁶	X ¹⁶	X ¹⁶	X ¹⁶	X ¹⁷
B Radon from Underground Uranium Mines													X
C Beryllium		X	X	X	X	X	X	X	X	X	X	X	
D Beryllium Rocket Motor Firing		X	X	X	X	X	X	X	X	X	X	X	
E Mercury	X	X	X	X	X	X	X	X	X	X	X	X	
F Vinyl Chloride		X	X	X	X	X	X	X	X	X	X	X	

1. Table last updated on July 5, 2006.

2. Any authority within any subpart of this part (i.e. under "Delegation of Authority") that is identified as not delegable, is not delegated.

3. Alaska Department of Environmental Conservation (01/18/1997). Note: Alaska received delegation for § 61.145 and § 61.154 of subpart M (Asbestos), along with other sections and appendices which are referenced in § 61.145, as § 61.145 applies to sources required to obtain an operating permit under Alaska's regulations. Alaska has not received delegation for subpart M for sources not required to obtain an operating permit under Alaska's regulations.

4. Idaho Department of Environmental Quality (07/01/2003). Note: Delegation of these part 61 subparts applies only to those sources in Idaho required to obtain an operating permit under title V of the Clean Air Act.

5. Oregon Department of Environmental Quality (07/01/2004).

6. Lane Regional Air Pollution Authority (07/01/2001).

7. Washington Department of Ecology (02/20/2001). Note: Delegation of part 61, subpart M, applies only to sources required to obtain an operating permit under title V of the Clean Air Act, including Hanford. (Pursuant to RCW 70.105.240, only Ecology can enforce non-radionuclide regulations at Hanford).

8. Benton Clean Air Authority (02/20/2001). Note: Delegation of part 61, subpart M, excludes Hanford, see note #7.

9. Northwest Clean Air Agency (07/01/2003).

10. Olympic Regional Clean Air Agency (07/01/2000). Note: Delegation of part 61, subpart M applies only to sources required to obtain an operating permit under title V of the Clean Air Act.

11. Puget Sound Clean Air Agency (07/01/2005).

12. Southwest Clean Air Agency (08/01/1998).

13. Spokane County Air Pollution Control Authority (02/20/2001).

14. Yakima Regional Clean Air Authority (07/01/2000).

15. Washington State Department of Health (07/01/2004). Note: WDOH is only delegated the Radionuclide NESHAPs. Other NESHAPs will be enforced by Washington State Department of Ecology and local air agencies, as applicable.

16. General Provisions Authorities which are not delegated include: §§ 61.04(b); 61.12(d)(1); 61.13(h)(1)(ii) for approval of major alternatives to test methods; § 61.14(g)(1)(ii) for approval of major alternatives to monitoring; § 61.16; § 61.53(c)(4); and any sections in the subparts pertaining to approval of alternative standards (i.e., alternative means of emission limitations), or approval of major alternatives to test methods or monitoring. For definitions of minor, intermediate, and major alternatives or changes to test methods and monitoring, see 40 CFR 63.90.

17. General Provisions Authorities which are not delegated include: waiver of recordkeeping, approval of alternative means of emission limitation, approval of alternatives to test methods, except as provided in 40 CFR 61.13(h)(1)(i), approval of alternative to monitoring that do not qualify as "Minor changes to monitoring," "Intermediate changes to monitoring," or "Minor changes to recordkeeping/reporting" as defined in 40 CFR 63.90, and availability of information.

Subparts ²	AK	ID	OR		WA								
	ADEC 3	IDEQ 4	ODEQ 5	LRAPA 6	Ecology 7	BCAA 8	NWCAA 9	ORCAA 10	PSCAA 11	SWCAA 12	SCAPCA 13	YRCAA 14	WDOH 15
H Radionuclide other than Radon from Dept. of Energy Facilities													X
I Radionuclide from Federal Facilities other than Nuclear Regulatory Commission Licensees and not covered by Subpart H													X
J Equipment Leaks of Benzene	X	X	X	X	X	X	X	X	X	X	X	X	
K Radionuclide from Elemental Phosphorus Plants													X
L Benzene from Coke By-Product Recovery Plants		X	X	X	X	X	X	X	X	X	X	X	
M Asbestos	X				X	X	X	X	X	X	X	X	
N Inorganic Arsenic from Glass Manufacturing Plants		X	X		X	X	X	X	X	X	X	X	
O Inorganic Arsenic from Primary Copper Smelters		X	X		X	X	X	X	X	X	X	X	

1. Table last updated on July 5, 2006.

2. Any authority within any subpart of this part (i.e. under "Delegation of Authority") that is identified as not delegable, is not delegated.

3. Alaska Department of Environmental Conservation (01/18/1997). Note: Alaska received delegation for § 61.145 and § 61.154 of subpart M (Asbestos), along with other sections and appendices which are referenced in § 61.145, as § 61.145 applies to sources required to obtain an operating permit under Alaska's regulations. Alaska has not received delegation for subpart M for sources not required to obtain an operating permit under Alaska's regulations.

4. Idaho Department of Environmental Quality (07/01/2003). Note: Delegation of these part 61 subparts applies only to those sources in Idaho required to obtain an operating permit under title V of the Clean Air Act.

5. Oregon Department of Environmental Quality (07/01/2004).

6. Lane Regional Air Pollution Authority (07/01/2001).

7. Washington Department of Ecology (02/20/2001). Note: Delegation of part 61, subpart M, applies only to sources required to obtain an operating permit under title V of the Clean Air Act, including Hanford. (Pursuant to RCW 70.105.240, only Ecology can enforce non-radionuclide regulations at Hanford).

8. Benton Clean Air Authority (02/20/2001). Note: Delegation of part 61, subpart M, excludes Hanford, see note #7.

9. Northwest Clean Air Agency (07/01/2003).

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11. Puget Sound Clean Air Agency (07/01/2005).

12. Southwest Clean Air Agency (08/01/1998).

13. Spokane County Air Pollution Control Authority (02/20/2001).

14. Yakima Regional Clean Air Authority (07/01/2000).

15. Washington State Department of Health (07/01/2004). Note: WDOH is only delegated the Radionuclide NESHAPs. Other NESHAPs will be enforced by Washington State Department of Ecology and local air agencies, as applicable.

16. General Provisions Authorities which are not delegated include: §§ 61.04(b); 61.12(d)(1); 61.13(h)(1)(ii) for approval of major alternatives to test methods; § 61.14(g)(1)(ii) for approval of major alternatives to monitoring; § 61.16; § 61.53(c)(4); and any sections in the subparts pertaining to approval of alternative standards (i.e., alternative means of emission limitations), or approval of major alternatives to test methods or monitoring. For definitions of minor, intermediate, and major alternatives or changes to test methods and monitoring, see 40 CFR 63.90.

17. General Provisions Authorities which are not delegated include: waiver of recordkeeping, approval of alternative means of emission limitation, approval of alternatives to test methods, except as provided in 40 CFR 61.13(h)(1)(i), approval of alternative to monitoring that do not qualify as "Minor changes to monitoring," "Intermediate changes to monitoring," or "Minor changes to recordkeeping/reporting" as defined in 40 CFR 63.90, and availability of information.

Subparts ²	AK	ID	OR		WA								
	ADEC 3	IDEQ 4	ODEQ 5	LRAPA 6	Ecology 7	BCAA 8	NWCAA 9	ORCAA 10	PSCAA 11	SWCAA 12	SCAPCA 13	YRCAA 14	WDOH 15
P Inorganic Arsenic emissions from Arsenic Trioxide and Metallic Arsenic Production Facilities		X	X		X	X	X	X	X	X	X	X	
Q Radon from Dept. of Energy Facilities													X
R Radon from Phosphogypsum Stacks													X
T Radon from Disposal Uranium Mill Tailings													X
V Equipment Leaks (Fugitive Sources)	X	X	X		X	X	X	X	X	X	X	X	
W Radon from Operating Mill Tailings													X
Y Benzene from Benzene Storage Vessels	X	X	X		X	X	X	X	X	X	X	X	
BB Benzene from Benzene Transfer Operations		X	X		X	X	X	X	X	X	X	X	

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Subparts ²	AK	ID	OR		WA								
	ADEC 3	IDEQ 4	ODEQ 5	LRAPA 6	Ecology 7	BCAA 8	NWCAA 9	ORCAA 10	PSCAA 11	SWCAA 12	SCAPCA 13	YRCAA 14	WDOH 15
FF Benzene Waste Operations	X	X	X		X	X	X	X	X	X	X	X	

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[40 FR 18170, Apr. 25, 1975]

Editorial Note: For FEDERAL REGISTER citations affecting § 61.04, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at www.govinfo.gov.

§ 61.05 Prohibited activities.

- (a) After the effective date of any standard, no owner or operator shall construct or modify any stationary source subject to that standard without first obtaining written approval from the Administrator in accordance with this subpart, except under an exemption granted by the President under section 112(c)(2) of the Act. Sources, the construction or modification of which commenced after the publication date of the standards proposed to be applicable to the sources, are subject to this prohibition.
- (b) After the effective date of any standard, no owner or operator shall operate a new stationary source subject to that standard in violation of the standard, except under an exemption granted by the President under section 112(c)(2) of the Act.
- (c) Ninety days after the effective date of any standard, no owner or operator shall operate any existing source subject to that standard in violation of the standard, except under a waiver granted by the Administrator under this part or under an exemption granted by the President under section 112(c)(2) of the Act.
- (d) No owner or operator subject to the provisions of this part shall fail to report, revise reports, or report source test results as required under this part.

[38 FR 8826, Apr. 6, 1973, as amended at 50 FR 46291, Nov. 7, 1985]

§ 61.06 Determination of construction or modification.

An owner or operator may submit to the Administrator a written application for a determination of whether actions intended to be taken by the owner or operator constitute construction or modification, or commencement thereof, of a source subject to a standard. The Administrator will notify the owner or operator of his determination within 30 days after receiving sufficient information to evaluate the application.

[50 FR 46291, Nov. 7, 1985]

§ 61.07 Application for approval of construction or modification.

- (a) The owner or operator shall submit to the Administrator an application for approval of the construction of any new source or modification of any existing source. The application shall be submitted before the construction or modification is planned to commence, or within 30 days after the effective date if the construction or modification had commenced before the effective date and initial startup has not occurred. A separate application shall be submitted for each stationary source.
- (b) Each application for approval of construction shall include—
 - (1) The name and address of the applicant;
 - (2) The location or proposed location of the source; and

- (3) Technical information describing the proposed nature, size, design, operating design capacity, and method of operation of the source, including a description of any equipment to be used for control of emissions. Such technical information shall include calculations of emission estimates in sufficient detail to permit assessment of the validity of the calculations.
- (c) Each application for approval of modification shall include, in addition to the information required in paragraph (b) of this section—
 - (1) The precise nature of the proposed changes;
 - (2) The productive capacity of the source before and after the changes are completed; and
 - (3) Calculations of estimates of emissions before and after the changes are completed, in sufficient detail to permit assessment of the validity of the calculations.

[50 FR 46291, Nov. 7, 1985]

§ 61.08 Approval of construction or modification.

- (a) The Administrator will notify the owner or operator of approval or intention to deny approval of construction or modification within 60 days after receipt of sufficient information to evaluate an application under § 61.07.
- (b) If the Administrator determines that a stationary source for which an application under § 61.07 was submitted will not cause emissions in violation of a standard if properly operated, the Administrator will approve the construction or modification.
- (c) Before denying any application for approval of construction or modification, the Administrator will notify the applicant of the Administrator's intention to issue the denial together with—
 - (1) Notice of the information and findings on which the intended denial is based; and
 - (2) Notice of opportunity for the applicant to present, within such time limit as the Administrator shall specify, additional information or arguments to the Administrator before final action on the application.
- (d) A final determination to deny any application for approval will be in writing and will specify the grounds on which the denial is based. The final determination will be made within 60 days of presentation of additional information or arguments, or 60 days after the final date specified for presentation if no presentation is made.
- (e) Neither the submission of an application for approval nor the Administrator's approval of construction or modification shall—
 - (1) Relieve an owner or operator of legal responsibility for compliance with any applicable provisions of this part or of any other applicable Federal, State, or local requirement; or
 - (2) Prevent the Administrator from implementing or enforcing this part or taking any other action under the Act.

[50 FR 46291, Nov. 7, 1985]

§ 61.09 Notification of startup.

- (a) The owner or operator of each stationary source which has an initial startup after the effective date of a standard shall furnish the Administrator with written notification as follows:
 - (1) A notification of the anticipated date of initial startup of the source not more than 60 days nor less than 30 days before that date.
 - (2) A notification of the actual date of initial startup of the source within 15 days after that date.
- (b) If any State or local agency requires a notice which contains all the information required in the notification in paragraph (a) of this section, sending the Administrator a copy of that notification will satisfy paragraph (a) of this section.

[50 FR 46291, Nov. 7, 1985]

§ 61.10 Source reporting and waiver request.

- (a) The owner or operator of each existing source or each new source which had an initial startup before the effective date shall provide the following information in writing to the Administrator within 90 days after the effective date:
 - (1) Name and address of the owner or operator.
 - (2) The location of the source.
 - (3) The type of hazardous pollutants emitted by the stationary source.
 - (4) A brief description of the nature, size, design, and method of operation of the stationary source including the operating design capacity of the source. Identify each point of emission for each hazardous pollutant.
 - (5) The average weight per month of the hazardous materials being processed by the source, over the last 12 months preceding the date of the report.
 - (6) A description of the existing control equipment for each emission point including—
 - (i) Each control device for each hazardous pollutant; and
 - (ii) Estimated control efficiency (percent) for each control device.
 - (7) A statement by the owner or operator of the source as to whether the source can comply with the standards within 90 days after the effective date.
- (b) The owner or operator of an existing source unable to comply with an applicable standard may request a waiver of compliance with that standard for a period not exceeding 2 years after the effective date. Any request shall be in writing and shall include the following information:
 - (1) A description of the controls to be installed to comply with the standard.
 - (2) A compliance schedule, including the date each step toward compliance will be reached. The list shall include as a minimum the following dates:
 - (i) Date by which contracts for emission control systems or process changes for emission control will be awarded, or date by which orders will be issued for the purchase of component parts to accomplish emission control or process changes;

- (ii) Date of initiation of onsite construction or installation of emission control equipment or process change;
 - (iii) Date by which onsite construction or installation of emission control equipment or process change is to be completed; and
 - (iv) Date by which final compliance is to be achieved.
- (3) A description of interim emission control steps which will be taken during the waiver period.
- (c) Any change in the information provided under paragraph (a) of this section or § 61.07(b) shall be provided to the Administrator within 30 days after the change. However, if any change will result from modification of the source, §§ 61.07(c) and 61.08 apply.
- (d) A possible format for reporting under this section is included as appendix A of this part. Advice on reporting the status of compliance may be obtained from the Administrator.
- (e) For the purposes of this part, time periods specified in days shall be measured in calendar days, even if the word "calendar" is absent, unless otherwise specified in an applicable requirement.
- (f) For the purposes of this part, if an explicit postmark deadline is not specified in an applicable requirement for the submittal of a notification, application, report, or other written communication to the Administrator, the owner or operator shall postmark the submittal on or before the number of days specified in the applicable requirement. For example, if a notification must be submitted 15 days before a particular event is scheduled to take place, the notification shall be postmarked on or before 15 days preceding the event; likewise, if a notification must be submitted 15 days after a particular event takes place, the notification shall be postmarked on or before 15 days following the end of the event. The use of reliable non-Government mail carriers that provide indications of verifiable delivery of information required to be submitted to the Administrator, similar to the postmark provided by the U.S. Postal Service, or alternative means of delivery agreed to by the permitting authority, is acceptable.
- (g) Notwithstanding time periods or postmark deadlines specified in this part for the submittal of information to the Administrator by an owner or operator, or the review of such information by the Administrator, such time periods or deadlines may be changed by mutual agreement between the owner or operator and the Administrator. Procedures governing the implementation of this provision are specified in paragraph (j) of this section.
- (h) If an owner or operator of a stationary source in a State with delegated authority is required to submit reports under this part to the State, and if the State has an established timeline for the submission of reports that is consistent with the reporting frequency(ies) specified for such source under this part, the owner or operator may change the dates by which reports under this part shall be submitted (without changing the frequency of reporting) to be consistent with the State's schedule by mutual agreement between the owner or operator and the State. The allowance in the previous sentence applies in each State beginning 1 year after the source is required to be in compliance with the applicable subpart in this part. Procedures governing the implementation of this provision are specified in paragraph (j) of this section.
- (i) If an owner or operator supervises one or more stationary sources affected by standards set under this part and standards set under part 60, part 63, or both such parts of this chapter, he/she may arrange by mutual agreement between the owner or operator and the Administrator (or the State with an approved permit program) a common schedule on which reports required by each applicable standard shall be submitted throughout the year. The allowance in the previous sentence applies in each State beginning 1

year after the source is required to be in compliance with the applicable subpart in this part, or 1 year after the source is required to be in compliance with the applicable part 60 or part 63 standard, whichever is latest. Procedures governing the implementation of this provision are specified in paragraph (j) of this section.

(j)

(1)

- (i) Until an adjustment of a time period or postmark deadline has been approved by the Administrator under paragraphs (j)(2) and (j)(3) of this section, the owner or operator of an affected source remains strictly subject to the requirements of this part.
- (ii) An owner or operator shall request the adjustment provided for in paragraphs (j)(2) and (j)(3) of this section each time he or she wishes to change an applicable time period or postmark deadline specified in this part.

- (2) Notwithstanding time periods or postmark deadlines specified in this part for the submittal of information to the Administrator by an owner or operator, or the review of such information by the Administrator, such time periods or deadlines may be changed by mutual agreement between the owner or operator and the Administrator. An owner or operator who wishes to request a change in a time period or postmark deadline for a particular requirement shall request the adjustment in writing as soon as practicable before the subject activity is required to take place. The owner or operator shall include in the request whatever information he or she considers useful to convince the Administrator that an adjustment is warranted.
- (3) If, in the Administrator's judgment, an owner or operator's request for an adjustment to a particular time period or postmark deadline is warranted, the Administrator will approve the adjustment. The Administrator will notify the owner or operator in writing of approval or disapproval of the request for an adjustment within 15 calendar days of receiving sufficient information to evaluate the request.
- (4) If the Administrator is unable to meet a specified deadline, he or she will notify the owner or operator of any significant delay and inform the owner or operator of the amended schedule.

[38 FR 8826, Apr. 6, 1973, as amended at 50 FR 46292, Nov. 7, 1985; 59 FR 12430, Mar. 16, 1994]

§ 61.11 Waiver of compliance.

- (a) Based on the information provided in any request under § 61.10, or other information, the Administrator may grant a waiver of compliance with a standard for a period not exceeding 2 years after the effective date of the standard.
- (b) The waiver will be in writing and will—
 - (1) Identify the stationary source covered;
 - (2) Specify the termination date of the waiver;
 - (3) Specify dates by which steps toward compliance are to be taken; and
 - (4) Specify any additional conditions which the Administrator determines necessary to assure installation of the necessary controls within the waiver period and to assure protection of the health of persons during the waiver period.

- (c) The Administrator may terminate the waiver at an earlier date than specified if any specification under paragraphs (b)(3) and (b)(4) of this section are not met.
- (d) Before denying any request for a waiver, the Administrator will notify the owner or operator making the request of the Administrator's intention to issue the denial, together with—
 - (1) Notice of the information and findings on which the intended denial is based; and
 - (2) Notice of opportunity for the owner or operator to present, within the time limit the Administrator specifies, additional information or arguments to the Administrator before final action on the request.
- (e) A final determination to deny any request for a waiver will be in writing and will set forth the specific grounds on which the denial is based. The final determination will be made within 60 days after presentation of additional information or argument; or within 60 days after the final date specified for the presentation if no presentation is made.
- (f) The granting of a waiver under this section shall not abrogate the Administrator's authority under section 114 of the Act.

[50 FR 46292, Nov. 7, 1985]

§ 61.12 Compliance with standards and maintenance requirements.

- (a) Compliance with numerical emission limits shall be determined in accordance with emission tests established in § 61.13 or as otherwise specified in an individual subpart.
- (b) Compliance with design, equipment, work practice or operational standards shall be determined as specified in an individual subpart.
- (c) The owner or operator of each stationary source shall maintain and operate the source, including associated equipment for air pollution control, in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operating and maintenance procedures, and inspection of the source.
- (d)
 - (1) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in emissions of a pollutant from a source at least equivalent to the reduction in emissions of that pollutant from that source achieved under any design, equipment, work practice or operational standard, the Administrator will publish in the FEDERAL REGISTER a notice permitting the use of the alternative means for purposes of compliance with the standard. The notice will restrict the permission to the source(s) or category(ies) of sources on which the alternative means will achieve equivalent emission reductions. The notice may condition permission on requirements related to the operation and maintenance of the alternative means.
 - (2) Any notice under paragraph (d)(1) shall be published only after notice and an opportunity for a hearing.

- (3) Any person seeking permission under this subsection shall, unless otherwise specified in the applicable subpart, submit a proposed test plan or the results of testing and monitoring, a description of the procedures followed in testing or monitoring, and a description of pertinent conditions during testing or monitoring.
- (e) For the purpose of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any standard in this part, nothing in this part shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test had been performed.

[50 FR 46292, Nov. 7, 1985, as amended 62 FR 8328, Feb. 24, 1997]

§ 61.13 Emission tests and waiver of emission tests.

- (a) Except as provided in paragraphs (a)(3), (a)(4), (a)(5), and (a)(6) of this section, if required to do emission testing by an applicable subpart and unless a waiver of emission testing is obtained under this section, the owner or operator shall test emissions from the source:
 - (1) Within 90 days after the effective date, for an existing source or a new source which has an initial startup date before the effective date.
 - (2) Within 90 days after initial startup, for a new source which has an initial startup date after the effective date.
 - (3) If a force majeure is about to occur, occurs, or has occurred for which the affected owner or operator intends to assert a claim of force majeure, the owner or operator shall notify the Administrator, in writing as soon as practicable following the date the owner or operator first knew, or through due diligence should have known that the event may cause or caused a delay in testing beyond the regulatory deadline specified in paragraphs (a)(1) or (a)(2) of this section or beyond a deadline established pursuant to the requirements under paragraph (b) of this section, but the notification must occur before the performance test deadline unless the initial force majeure or a subsequent force majeure event delays the notice, and in such cases, the notification shall occur as soon as practicable.
 - (4) The owner or operator shall provide to the Administrator a written description of the force majeure event and a rationale for attributing the delay in testing beyond the regulatory deadline to the force majeure; describe the measures taken or to be taken to minimize the delay; and identify a date by which the owner or operator proposes to conduct the performance test. The performance test shall be conducted as soon as practicable after the force majeure occurs.
 - (5) The decision as to whether or not to grant an extension to the performance test deadline is solely within the discretion of the Administrator. The Administrator will notify the owner or operator in writing of approval or disapproval of the request for an extension as soon as practicable.
 - (6) Until an extension of the performance test deadline has been approved by the Administrator under paragraphs (a)(3), (a)(4), and (a)(5) of this section, the owner or operator of the affected facility remains strictly subject to the requirements of this part.
- (b) The Administrator may require an owner or operator to test emissions from the source at any other time when the action is authorized by section 114 of the Act.

- (c) The owner or operator shall notify the Administrator of the emission test at least 30 days before the emission test to allow the Administrator the opportunity to have an observer present during the test.
- (d) If required to do emission testing, the owner or operator of each new source and, at the request of the Administrator, the owner or operator of each existing source shall provide emission testing facilities as follows:
 - (1) Sampling ports adequate for test methods applicable to each source.
 - (2) Safe sampling platform(s).
 - (3) Safe access to sampling platform(s).
 - (4) Utilities for sampling and testing equipment.
 - (5) Any other facilities that the Administrator needs to safely and properly test a source.
- (e) Each emission test shall be conducted under such conditions as the Administrator shall specify based on design and operational characteristics of the source.
 - (1) The performance testing shall include a test method performance audit (PA) during the performance test. The PAs consist of blind audit samples supplied by an accredited audit sample provider and analyzed during the performance test in order to provide a measure of test data bias. Gaseous audit samples are designed to audit the performance of the sampling system as well as the analytical system and must be collected by the sampling system during the compliance test just as the compliance samples are collected. If a liquid or solid audit sample is designed to audit the sampling system, it must also be collected by the sampling system during the compliance test. If multiple sampling systems or sampling trains are used during the compliance test for any of the test methods, the tester is only required to use one of the sampling systems per method to collect the audit sample. The audit sample must be analyzed by the same analyst using the same analytical reagents and analytical system and at the same time as the compliance samples. Retests are required when there is a failure to produce acceptable results for an audit sample. However, if the audit results do not affect the compliance or noncompliance status of the affected facility, the compliance authority may waive the reanalysis requirement, further audits, or retests and accept the results of the compliance test. Acceptance of the test results shall constitute a waiver of the reanalysis requirement, further audits, or retests. The compliance authority may also use the audit sample failure and the compliance test results as evidence to determine the compliance or noncompliance status of the affected facility. A blind audit sample is a sample whose value is known only to the sample provider and is not revealed to the tested facility until after they report the measured value of the audit sample. For pollutants that exist in the gas phase at ambient temperature, the audit sample shall consist of an appropriate concentration of the pollutant in air or nitrogen that can be introduced into the sampling system of the test method at or near the same entry point as a sample from the emission source. If no gas phase audit samples are available, an acceptable alternative is a sample of the pollutant in the same matrix that would be produced when the sample is recovered from the sampling system as required by the test method. For samples that exist only in a liquid or solid form at ambient temperature, the audit sample shall consist of an appropriate concentration of the pollutant in the same matrix that would be produced when the sample is recovered from the sampling system as required by the test method. An accredited audit sample provider (AASP) is an organization that has been accredited to prepare audit samples by an independent, third party accrediting body.

- (i) The source owner, operator, or representative of the tested facility shall obtain an audit sample, if commercially available, from an AASP for each test method used for regulatory compliance purposes. No audit samples are required for the following test methods: Methods 3A and 3C of appendix A-3 of part 60 of this chapter; Methods 6C, 7E, 9, and 10 of appendix A-4 of part 60; Method 18 and 19 of appendix A-6 of part 60; Methods 20, 22, and 25A of appendix A-7 of part 60; Methods 30A and 30B of appendix A-8 of part 60; and Methods 303, 318, 320, and 321 of appendix A of part 63 of this chapter. If multiple sources at a single facility are tested during a compliance test event, only one audit sample is required for each method used during a compliance test. The compliance authority responsible for the compliance test may waive the requirement to include an audit sample if they believe that an audit sample is not necessary. "Commercially available" means that two or more independent AASPs have blind audit samples available for purchase. If the source owner, operator, or representative cannot find an audit sample for a specific method, the owner, operator, or representative shall consult the EPA Web site at the following URL, www.epa.gov/ttn/emc, to confirm whether there is a source that can supply an audit sample for that method. If the EPA Web site does not list an available audit sample at least 60 days prior to the beginning of the compliance test, the source owner, operator, or representative shall not be required to include an audit sample as part of the quality assurance program for the compliance test. When ordering an audit sample, the source owner, operator, or representative shall give the sample provider an estimate for the concentration of each pollutant that is emitted by the source or the estimated concentration of each pollutant based on the permitted level and the name, address, and phone number of the compliance authority. The source owner, operator, or representative shall report the results for the audit sample along with a summary of the emission test results for the audited pollutant to the compliance authority and shall report the results of the audit sample to the AASP. The source owner, operator, or representative shall make both reports at the same time and in the same manner or shall report to the compliance authority first and then report to the AASP. If the method being audited is a method that allows the samples to be analyzed in the field and the tester plans to analyze the samples in the field, the tester may analyze the audit samples prior to collecting the emission samples provided a representative of the compliance authority is present at the testing site. The tester may request, and the compliance authority may grant, a waiver to the requirement that a representative of the compliance authority must be present at the testing site during the field analysis of an audit sample. The source owner, operator, or representative may report the results of the audit sample to the compliance authority and then report the results of the audit sample to the AASP prior to collecting any emission samples. The test protocol and final test report shall document whether an audit sample was ordered and utilized and the pass/fail results as applicable.
- (ii) An AASP shall have and shall prepare, analyze, and report the true value of audit samples in accordance with a written technical criteria document that describes how audit samples will be prepared and distributed in a manner that will ensure the integrity of the audit sample program. An acceptable technical criteria document shall contain standard operating procedures for all of the following operations:
 - (A) Preparing the sample;
 - (B) Confirming the true concentration of the sample;

- (C) Defining the acceptance limits for the results from a well qualified tester. This procedure must use well established statistical methods to analyze historical results from well qualified testers. The acceptance limits shall be set so that there is 95 percent confidence that 90 percent of well qualified labs will produce future results that are within the acceptance limit range;
 - (D) Providing the opportunity for the compliance authority to comment on the selected concentration level for an audit sample;
 - (E) Distributing the sample to the user in a manner that guarantees that the true value of the sample is unknown to the user;
 - (F) Recording the measured concentration reported by the user and determining if the measured value is within acceptable limits;
 - (G) Reporting the results from each audit sample in a timely manner to the compliance authority and to the source owner, operator, or representative by the AASP. The AASP shall make both reports at the same time and in the same manner or shall report to the compliance authority first and then report to the source owner, operator, or representative. The results shall include the name of the facility tested, the date on which the compliance test was conducted, the name of the company performing the sample collection, the name of the company that analyzed the compliance samples including the audit sample, the measured result for the audit sample, and whether the testing company passed or failed the audit. The AASP shall report the true value of the audit sample to the compliance authority. The AASP may report the true value to the source owner, operator, or representative if the AASP's operating plan ensures that no laboratory will receive the same audit sample twice.
 - (H) Evaluating the acceptance limits of samples at least once every two years to determine in consultation with the voluntary consensus standard body if they should be changed;
 - (I) Maintaining a database, accessible to the compliance authorities, of results from the audit that shall include the name of the facility tested, the date on which the compliance test was conducted, the name of the company performing the sample collection, the name of the company that analyzed the compliance samples including the audit sample, the measured result for the audit sample, the true value of the audit sample, the acceptance range for the measured value, and whether the testing company passed or failed the audit.
- (iii) The accrediting body shall have a written technical criteria document that describes how it will ensure that the AASP is operating in accordance with the AASP technical criteria document that describes how audit or samples are to be prepared and distributed. This document shall contain standard operating procedures for all of the following operations:
- (A) Checking audit samples to confirm their true value as reported by the AASP.
 - (B) Performing technical systems audits of the AASP's facilities and operating procedures at least once every two years.
 - (C) Providing standards for use by the voluntary consensus standard body to approve the accrediting body that will accredit the audit sample providers.

(iv) The technical criteria documents for the accredited sample providers and the accrediting body shall be developed through a public process guided by a voluntary consensus standards body (VCSB). The VCSB shall operate in accordance with the procedures and requirements in the Office of Management and Budget *Circular A-119*. A copy of Circular A-119 is available upon request by writing the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street, NW., Washington, DC 20503, by calling (202) 395-6880 or downloading online at http://standards.gov/standards_gov/a119.cfm. The VCSB shall approve all accrediting bodies. The Administrator will review all technical criteria documents. If the technical criteria documents do not meet the minimum technical requirements in paragraphs (e)(1)(ii) through (iv) of this section, the technical criteria documents are not acceptable and the proposed audit sample program is not capable of producing audit samples of sufficient quality to be used in a compliance test. All acceptable technical criteria documents shall be posted on the EPA Web site at the following URL, <http://www.epa.gov/ttn/emc>.

(2) [Reserved]

(f) Unless otherwise specified in an applicable subpart, samples shall be analyzed and emissions determined within 30 days after each emission test has been completed. The owner or operator shall report the determinations of the emission test to the Administrator by a registered letter sent before the close of business on the 31st day following the completion of the emission test.

(g) The owner or operator shall retain at the source and make available, upon request, for inspection by the Administrator, for a minimum of 2 years, records of emission test results and other data needed to determine emissions.

(h)

(1) Emission tests shall be conducted as set forth in this section, the applicable subpart and appendix B unless the Administrator—

(i) Specifies or approves the use of a reference method with minor changes in methodology; or

(ii) Approves the use of an alternative method; or

(iii) Waives the requirement for emission testing because the owner or operator of a source has demonstrated by other means to the Administrator's satisfaction that the source is in compliance with the standard.

(2) If the Administrator finds reasonable grounds to dispute the results obtained by an alternative method, he may require the use of a reference method. If the results of the reference and alternative methods do not agree, the results obtained by the reference method prevail.

(3) The owner or operator may request approval for the use of an alternative method at any time, except—

(i) For an existing source or a new source that had an initial startup before the effective date, any request for use of an alternative method during the initial emission test shall be submitted to the Administrator within 30 days after the effective date, or with the request for a waiver of compliance if one is submitted under § 60.10(b); or

(ii) For a new source that has an initial startup after the effective date, any request for use of an alternative method during the initial emission test shall be submitted to the Administrator no later than with the notification of anticipated startup required under § 60.09.

(i)

- (1) Emission tests may be waived upon written application to the Administrator if, in the Administrator's judgment, the source is meeting the standard, or the source is being operated under a waiver or compliance, or the owner or operator has requested a waiver of compliance and the Administrator is still considering that request.
- (2) If application for waiver of the emission test is made, the application shall accompany the information required by § 61.10 or the notification of startup required by § 61.09, whichever is applicable. A possible format is contained in appendix A to this part.
- (3) Approval of any waiver granted under this section shall not abrogate the Administrator's authority under the Act or in any way prohibit the Administrator from later cancelling the waiver. The cancellation will be made only after notice is given to the owner or operator of the source.

[50 FR 46292, Nov. 7, 1985, as amended at 72 FR 27442, May 16, 2007; 75 FR 55652, Sept. 13, 2010; 79 FR 11275, Feb. 27, 2014; 81 FR 59825, Aug. 30, 2016]

§ 61.14 Monitoring requirements.

- (a) Unless otherwise specified, this section applies to each monitoring system required under each subpart which requires monitoring.
- (b) Each owner or operator shall maintain and operate each monitoring system as specified in the applicable subpart and in a manner consistent with good air pollution control practice for minimizing emissions. Any unavoidable breakdown or malfunction of the monitoring system should be repaired or adjusted as soon as practicable after its occurrence. The Administrator's determination of whether acceptable operating and maintenance procedures are being used will be based on information which may include, but not be limited to, review of operating and maintenance procedures, manufacturer recommendations and specifications, and inspection of the monitoring system.
- (c) When required by the applicable subpart, and at any other time the Administrator may require, the owner or operator of a source being monitored shall conduct a performance evaluation of the monitoring system and furnish the Administrator with a copy of a written report of the results within 60 days of the evaluation. Such a performance evaluation shall be conducted according to the applicable specifications and procedures described in the applicable subpart. The owner or operator of the source shall furnish the Administrator with written notification of the date of the performance evaluation at least 30 days before the evaluation is to begin.
- (d) When the effluents from a single source, or from two or more sources subject to the same emission standards, are combined before being released to the atmosphere, the owner or operator shall install a monitoring system on each effluent or on the combined effluent. If two or more sources are not subject to the same emission standards, the owner or operator shall install a separate monitoring system on each effluent, unless otherwise specified. If the applicable standard is a mass emission standard and the effluent from one source is released to the atmosphere through more than one point, the owner or operator shall install a monitoring system at each emission point unless the installation of fewer systems is approved by the Administrator.

- (e) The owner or operator of each monitoring system shall reduce the monitoring data as specified in each applicable subpart. Monitoring data recorded during periods of unavoidable monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments shall not be included in any data average.
- (f) The owner or operator shall maintain records of monitoring data, monitoring system calibration checks, and the occurrence and duration of any period during which the monitoring system is malfunctioning or inoperative. These records shall be maintained at the source for a minimum of 2 years and made available, upon request, for inspection by the Administrator.
- (g)
 - (1) Monitoring shall be conducted as set forth in this section and the applicable subpart unless the Administrator—
 - (i) Specifies or approves the use of the specified monitoring requirements and procedures with minor changes in methodology; or
 - (ii) Approves the use of alternatives to any monitoring requirements or procedures.
 - (2) If the Administrator finds reasonable grounds to dispute the results obtained by an alternative monitoring method, the Administrator may require the monitoring requirements and procedures specified in this part.

[50 FR 46293, Nov. 7, 1985]

§ 61.15 Modification.

- (a) Except as provided under paragraph (d) of this section, any physical or operational change to a stationary source which results in an increase in the rate of emission to the atmosphere of a hazardous pollutant to which a standard applies shall be considered a modification.
- (b) Upon modification, an existing source shall become a new source for each hazardous pollutant for which the rate of emission to the atmosphere increases and to which a standard applies.
- (c) Emission rate shall be expressed as kg/hr of any hazardous pollutant discharged into the atmosphere for which a standard is applicable. The Administrator shall use the following to determine the emission rate:
 - (1) Emission factors as specified in the background information document (BID) for the applicable standard, or in the latest issue of "Compilation of Air Pollutant Emission Factors," EPA Publication No. AP-42, or other emission factors determined by the Administrator to be superior to AP-42 emission factors, in cases where use of emission factors demonstrates that the emission rate will clearly increase or clearly not increase as a result of the physical or operational change.
 - (2) Material balances, monitoring data, or manual emission tests in cases where use of emission factors, as referenced in paragraph (c)(1) of this section, does not demonstrate to the Administrator's satisfaction that the emission rate will clearly increase or clearly not increase as a result of the physical or operational change, or where an interested person demonstrates to the Administrator's satisfaction that there are reasonable grounds to dispute the result obtained by the Administrator using emission factors. When the emission rate is based on results from manual emission tests or monitoring data, the procedures specified in appendix C of 40 CFR part 60 shall be used to determine whether an increase in emission rate has occurred. Tests shall be conducted under such conditions as the Administrator shall specify to the owner or operator. At least three test

runs must be conducted before and at least three after the physical or operational change. If the Administrator approves, the results of the emission tests required in § 61.13(a) may be used for the test runs to be conducted before the physical or operational change. All operating parameters which may affect emissions must be held constant to the maximum degree feasible for all test runs.

(d) The following shall not, by themselves, be considered modifications under this part:

- (1) Maintenance, repair, and replacement which the Administrator determines to be routine for a source category.
- (2) An increase in production rate of a stationary source, if that increase can be accomplished without a capital expenditure on the stationary source.
- (3) An increase in the hours of operation.
- (4) Any conversion to coal that meets the requirements specified in section 111(a)(8) of the Act.
- (5) The relocation or change in ownership of a stationary source. However, such activities must be reported in accordance with § 61.10(c).

[50 FR 46294, Nov. 7, 1985]

§ 61.16 Availability of information.

The availability to the public of information provided to, or otherwise obtained by, the Administrator under this part shall be governed by part 2 of this chapter.

[38 FR 8826, Apr. 6, 1973. Redesignated at 50 FR 46294, Nov. 7, 1985]

§ 61.17 State authority.

(a) This part shall not be construed to preclude any State or political subdivision thereof from—

- (1) Adopting and enforcing any emission limiting regulation applicable to a stationary source, provided that such emission limiting regulation is not less stringent than the standards prescribed under this part; or
- (2) Requiring the owner or operator of a stationary source to obtain permits, licenses, or approvals prior to initiating construction, modification, or operation of the source.

[50 FR 46294, Nov. 7, 1985]

§ 61.18 Incorporations by reference.

The materials listed below are incorporated by reference in the corresponding sections noted. These incorporations by reference were approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. These materials are incorporated as they exist on the date of the approval, and a notice of any change in these materials will be published in the FEDERAL REGISTER. The materials are available for inspection at the corresponding address noted below, and at U.S. EPA's Air Docket at 1200 Pennsylvania Avenue, NW, Washington, DC 20460, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

- (a) The following materials are available for purchase from at least one of the following addresses: American Society for Testing and Materials (ASTM) International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA, 19428-2959; or University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106.
- (1) ASTM D737-75, Standard Test Method for Air Permeability of Textile Fabrics, incorporation by reference (IBR) approved January 27, 1983 for § 61.23(a).
 - (2) ASTM D835-85, Standard Specification for Refined Benzene-485, IBR approved September 14, 1989 for § 61.270(a).
 - (3) ASTM D836-84, Standard Specification for Industrial Grade Benzene, IBR approved September 14, 1989 for § 61.270(a).
 - (4) ASTM D1193-77, 91, Standard Specification for Reagent Water, IBR approved for appendix B: Method 101, Section 7.1.1; Method 101A, Section 7.1.1; and Method 104, Section 7.1; Method 108, Section 7.1.3; Method 108A, Section 7.1.1; Method 108B, Section 7.1.1; Method 108C, Section 7.1.1; and Method 111, Section 7.3.
 - (5) ASTM D2267-68, 78, 88, Standard Test Method for Aromatics in Light Naphthas and Aviation Gasoline by Gas Chromatography, IBR approved September 30, 1986, for § 61.67(h)(1).
 - (6) ASTM D2359-85a, 93, Standard Specification for Refined Benzene-535, IBR approved September 14, 1989 for § 61.270(a).
 - (7) ASTM D2382-76, 88, Heat of Combustion of Hydrocarbon Fuels by Bomb Calorimeter (High-Precision Method), IBR approved June 6, 1984 for § 61.245(e)(3).
 - (8) ASTM D2504-67, 77, 88 (Reapproved 1993), Noncondensable Gases in C₃ and Lighter Hydrocarbon Products by Gas Chromatography, IBR approved June 6, 1984 for § 61.245(e)(3).
 - (9) ASTM D2879-83, Standard Test Method for Vapor Pressure—Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope, IBR approved December 14, 2000 for § 61.241.
 - (10) ASTM D2986-71, 78, 95a, Standard Method for Evaluation of Air, Assay Media by the Monodisperse DOP (Diethyl Phthalate) Smoke Test, IBR approved for appendix B: Method 103, Section 6.1.3.
 - (11) ASTM D4420-94, Standard Test Method for Determination of Aromatics in Finished Gasoline by Gas Chromatography, IBR approved for § 61.67(h)(1).
 - (12) ASTM D4734-87, 96, Standard Specification for Refined Benzene-545, IBR approved September 14, 1989 for § 61.270(a).
 - (13) ASTM D4809-95, Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter (Precision Method), IBR approved for § 61.245(e)(3).
 - (14) ASTM E50-82, 86, 90 (Reapproved 1995), Standard Practices for Apparatus Reagents, and Safety Precautions for Chemical Analysis of Metals, IBR approved for appendix B: Method 108C, Section 6.1.4.
- (b) The following material is available from the U.S. EPA Environmental Monitoring and Support Laboratory, Cincinnati, Ohio 45268.

- (1) Method 601, Test Method for Purgeable Halocarbons, July 1982, IBR approved September 30, 1986, for § 61.67(g)(2).
- (c) The following material is available for purchase from the American National Standards Institute, 25 West 43rd Street, 4th Floor, New York, New York 10036.
 - (1) ANSI N13.1-1969, "Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities." IBR approved for 61.93(b)(2)(ii) and 61.107(b)(2)(ii).
 - (2) ANSI/HPS N13.1-1999 "Sampling and Monitoring Releases of Airborne Radioactive Substances from the Stacks and Ducts of Nuclear Facilities," IBR approved October 9, 2002, for §§ 61.93(c); 61.107(d) and Method 114, paragraph 2.1 of appendix B to 40 CFR part 61.
- (d) The following material is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402-9325, telephone (202) 512-1800 or outside of Washington, DC area: 1-866-512-1800.
 - (1) Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA Publication SW-846, Third Edition, November 1986, as amended by Revision I, December 1987, Order Number 955-001-00000-1:
 - (i) Method 8020, Aromatic Volatile Organics, IBR approved March 7, 1990, for § 61.355(c)(2)(iv)(A).
 - (ii) Method 8021, Volatile Organic Compounds in Water by Purge and Trap Capillary Column Gas Chromatography with Photoionization and Electrolytic Conductivity Detectors in Series, IBR approved March 7, 1990, for § 61.355(c)(2)(iv)(B).
 - (iii) Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, IBR approved March 7, 1990, for § 61.355(c)(2)(iv)(C).
 - (iv) Method 8260, Gas Chromatography/Mass Spectrometry for Volatile Organics: Capillary Column Technique, IBR approved March 7, 1990, for § 61.355(c)(2)(iv)(D).
- (e) **State and Local Requirements.** The following materials listed below are available at the Air and Radiation Docket and Information Center, 1200 Pennsylvania Avenue NW., Washington, DC 20460, telephone number (202) 566-1745.
 - (1) State of New Hampshire, New Hampshire Department of Environmental Services. 29 Hazen Drive, Concord, NH 03302-0095, (603) 271-3503, <https://www.des.nh.gov/>.
 - (i) New Hampshire Code of Administrative Rules: Chapter Env-Sw 2100, Management and Control of Asbestos Disposal Sites Not Operated after July 9, 1981, effective September 1, 2018, (including a letter from Robert R. Scott, Commissioner, Department of Environmental Services, State of New Hampshire, to David J. Alukonis, Director, Office of Legislative Services, dated October 23, 2018, certifying that the enclosed rule, Env-Sw 2100, is the official version of this rule), IBR approved for § 61.04(c).
 - (ii) New Hampshire Code of Administrative Rules: Chapter Env-A 1800, Asbestos Management and Control, effective as of May 5, 2017 (certified with June 23, 2017 letter from Clark B. Freise, Assistant Commissioner, Department of Environmental Services, State of New Hampshire), as follows: Revision Notes #1 and #2; Part Env-A 1801-1807, excluding Env-A 1801.02(e), Env-A

1801.07, Env-A 1802.02, Env-A 1802.04, Env-A 1802.07-1802.09, Env-A 1802.13, Env-A 1802.15-1802.17, Env-A 1802.25, Env-A 1802.31, Env-A 1802.37, Env-A 1802.40, Env-A 1802.44, and Env-A 1803.05-1803.09; and Appendices B, C, and D; IBR approved for § 61.04(c).

[48 FR 3740, Jan. 27, 1983, as amended at 48 FR 55266, Dec. 9, 1983; 49 FR 23520, June 6, 1984; 51 FR 34914, Sept. 30, 1986; 54 FR 38073, Sept. 14, 1989; 54 FR 51704, Dec. 15, 1989; 55 FR 8341, Mar. 7, 1990; 55 FR 18331, May 2, 1990; 55 FR 22027, May 31, 1990; 55 FR 32914, Aug. 13, 1990; 65 FR 62150, Oct. 17, 2000; 65 FR 78280, Dec. 14, 2000; 67 FR 57166, Sept. 9, 2002; 69 FR 18803, Apr. 9, 2004; 78 FR 2338, Jan. 11, 2013; 83 FR 48255, Sept. 24, 2018; 89 FR 45771, May 24, 2024]

§ 61.19 Circumvention.

No owner or operator shall build, erect, install, or use any article machine, equipment, process, or method, the use of which conceals an emission which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous dilutants to achieve compliance with a visible emissions standard, and the piecemeal carrying out of an operation to avoid coverage by a standard that applies only to operations larger than a specified size.

[40 FR 48299, Oct. 14, 1975. Redesignated at 50 FR 46294, Nov. 7, 1985]

This content is from the eCFR and is authoritative but unofficial.

Title 40 —Protection of Environment

Chapter I —Environmental Protection Agency

Subchapter C —Air Programs

Part 61 —National Emission Standards for Hazardous Air Pollutants

Authority: 42 U.S.C. 7401 *et seq.*

Source: 38 FR 8826, Apr. 6, 1973, unless otherwise noted.

Subpart M National Emission Standard for Asbestos

§ 61.140 Applicability.

§ 61.141 Definitions.

§ 61.142 Standard for asbestos mills.

§ 61.143 Standard for roadways.

§ 61.144 Standard for manufacturing.

§ 61.145 Standard for demolition and renovation.

§ 61.146 Standard for spraying.

§ 61.147 Standard for fabricating.

§ 61.148 Standard for insulating materials.

§ 61.149 Standard for waste disposal for asbestos mills.

§ 61.150 Standard for waste disposal for manufacturing, fabricating, demolition, renovation, and spraying operations.

§ 61.151 Standard for inactive waste disposal sites for asbestos mills and manufacturing and fabricating operations.

§ 61.152 Air-cleaning.

§ 61.153 Reporting.

§ 61.154 Standard for active waste disposal sites.

§ 61.155 Standard for operations that convert asbestos-containing waste material into nonasbestos (asbestos-free) material.

§ 61.156 Cross-reference to other asbestos regulations.

§ 61.157 Delegation of authority.

Appendix A to Subpart M of Part 61

Interpretive Rule Governing Roof Removal Operations

Subpart M—National Emission Standard for Asbestos

Authority: 42 U.S.C. 7401, 7412, 7414, 7416, 7601.

Source: 49 FR 13661, Apr. 5, 1984, unless otherwise noted.

§ 61.140 Applicability.

The provisions of this subpart are applicable to those sources specified in §§ 61.142 through 61.151, 61.154, and 61.155.

[55 FR 48414, Nov. 20, 1990]

§ 61.141 Definitions.

All terms that are used in this subpart and are not defined below are given the same meaning as in the Act and in subpart A of this part.

Active waste disposal site means any disposal site other than an inactive site.

Adequately wet means sufficiently mix or penetrate with liquid to prevent the release of particulates. If visible emissions are observed coming from asbestos-containing material, then that material has not been adequately wetted. However, the absence of visible emissions is not sufficient evidence of being adequately wet.

Asbestos means the asbestiform varieties of serpentine (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite, anthophyllite, and actinolite-tremolite.

Asbestos-containing waste materials means mill tailings or any waste that contains commercial asbestos and is generated by a source subject to the provisions of this subpart. This term includes filters from control devices, friable asbestos waste material, and bags or other similar packaging contaminated with commercial asbestos. As applied to demolition and renovation operations, this term also includes regulated asbestos-containing material waste and materials contaminated with asbestos including disposable equipment and clothing.

Asbestos mill means any facility engaged in converting, or in any intermediate step in converting, asbestos ore into commercial asbestos. Outside storage of asbestos material is not considered a part of the asbestos mill.

Asbestos tailings means any solid waste that contains asbestos and is a product of asbestos mining or milling operations.

Asbestos waste from control devices means any waste material that contains asbestos and is collected by a pollution control device.

Category I nonfriable asbestos-containing material (ACM) means asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy.

Category II nonfriable ACM means any material, excluding Category I nonfriable ACM, containing more than 1 percent asbestos as determined using the methods specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

Commercial asbestos means any material containing asbestos that is extracted from ore and has value because of its asbestos content.

Cutting means to penetrate with a sharp-edged instrument and includes sawing, but does not include shearing, slicing, or punching.

Demolition means the wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations or the intentional burning of any facility.

Emergency renovation operation means a renovation operation that was not planned but results from a sudden, unexpected event that, if not immediately attended to, presents a safety or public health hazard, is necessary to protect equipment from damage, or is necessary to avoid imposing an unreasonable financial burden. This term includes operations necessitated by nonroutine failures of equipment.

Fabricating means any processing (e.g., cutting, sawing, drilling) of a manufactured product that contains commercial asbestos, with the exception of processing at temporary sites (field fabricating) for the construction or restoration of facilities. In the case of friction products, fabricating includes bonding, debonding, grinding, sawing, drilling, or other similar operations performed as part of fabricating.

Facility means any institutional, commercial, public, industrial, or residential structure, installation, or building (including any structure, installation, or building containing condominiums or individual dwelling units operated as a residential cooperative, but excluding residential buildings having four or fewer dwelling units); any ship; and any active or inactive waste disposal site. For purposes of this definition, any building, structure, or installation that contains a loft used as a dwelling is not considered a residential structure, installation, or building. Any structure, installation or building that was previously subject to this subpart is not excluded, regardless of its current use or function.

Facility component means any part of a facility including equipment.

Friable asbestos material means any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy, that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. If the asbestos content is less than 10 percent as determined by a method other than point counting by polarized light microscopy (PLM), verify the asbestos content by point counting using PLM.

Fugitive source means any source of emissions not controlled by an air pollution control device.

Glove bag means a sealed compartment with attached inner gloves used for the handling of asbestos-containing materials. Properly installed and used, glove bags provide a small work area enclosure typically used for small-scale asbestos stripping operations. Information on glove-bag installation, equipment and supplies, and work practices is contained in the Occupational Safety and Health Administration's (OSHA's) final rule on occupational exposure to asbestos (appendix G to 29 CFR 1926.58).

Grinding means to reduce to powder or small fragments and includes mechanical chipping or drilling.

In poor condition means the binding of the material is losing its integrity as indicated by peeling, cracking, or crumbling of the material.

Inactive waste disposal site means any disposal site or portion of it where additional asbestos-containing waste material has not been deposited within the past year.

Installation means any building or structure or any group of buildings or structures at a single demolition or renovation site that are under the control of the same owner or operator (or owner or operator under common control).

Leak-tight means that solids or liquids cannot escape or spill out. It also means dust-tight.

Malfunction means any sudden and unavoidable failure of air pollution control equipment or process equipment or of a process to operate in a normal or usual manner so that emissions of asbestos are increased. Failures of equipment shall not be considered malfunctions if they are caused in any way by poor maintenance, careless operation, or any other preventable upset conditions, equipment breakdown, or process failure.

Manufacturing means the combining of commercial asbestos—or, in the case of woven friction products, the combining of textiles containing commercial asbestos—with any other material(s), including commercial asbestos, and the processing of this combination into a product. Chlorine production is considered a part of manufacturing.

Natural barrier means a natural object that effectively precludes or deters access. Natural barriers include physical obstacles such as cliffs, lakes or other large bodies of water, deep and wide ravines, and mountains. Remoteness by itself is not a natural barrier.

Nonfriable asbestos-containing material means any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy, that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

Nonscheduled renovation operation means a renovation operation necessitated by the routine failure of equipment, which is expected to occur within a given period based on past operating experience, but for which an exact date cannot be predicted.

Outside air means the air outside buildings and structures, including, but not limited to, the air under a bridge or in an open air ferry dock.

Owner or operator of a demolition or renovation activity means any person who owns, leases, operates, controls, or supervises the facility being demolished or renovated or any person who owns, leases, operates, controls, or supervises the demolition or renovation operation, or both.

Particulate asbestos material means finely divided particles of asbestos or material containing asbestos.

Planned renovation operations means a renovation operation, or a number of such operations, in which some RACM will be removed or stripped within a given period of time and that can be predicted. Individual nonscheduled operations are included if a number of such operations can be predicted to occur during a given period of time based on operating experience.

Regulated asbestos-containing material (RACM) means

- (a) Friable asbestos material,
- (b) Category I nonfriable ACM that has become friable,
- (c) Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or
- (d) Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations regulated by this subpart.

Remove means to take out RACM or facility components that contain or are covered with RACM from any facility.

Renovation means altering a facility or one or more facility components in any way, including the stripping or removal of RACM from a facility component. Operations in which load-supporting structural members are wrecked or taken out are demolitions.

Resilient floor covering means asbestos-containing floor tile, including asphalt and vinyl floor tile, and sheet vinyl floor covering containing more than 1 percent asbestos as determined using polarized light microscopy according to the method specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy.

Roadways means surfaces on which vehicles travel. This term includes public and private highways, roads, streets, parking areas, and driveways.

Strip means to take off RACM from any part of a facility or facility components.

Structural member means any load-supporting member of a facility, such as beams and load supporting walls; or any nonload-supporting member, such as ceilings and nonload-supporting walls.

Visible emissions means any emissions, which are visually detectable without the aid of instruments, coming from RACM or asbestos-containing waste material, or from any asbestos milling, manufacturing, or fabricating operation. This does not include condensed, uncombined water vapor.

Waste generator means any owner or operator of a source covered by this subpart whose act or process produces asbestos-containing waste material.

Waste shipment record means the shipping document, required to be originated and signed by the waste generator, used to track and substantiate the disposition of asbestos-containing waste material.

Working day means Monday through Friday and includes holidays that fall on any of the days Monday through Friday.

[49 FR 13661, Apr. 5, 1984; 49 FR 25453, June 21, 1984, as amended by 55 FR 48414, Nov. 20, 1990; 56 FR 1669, Jan. 16, 1991; 60 FR 31920, June 19, 1995]

§ 61.142 Standard for asbestos mills.

- (a) Each owner or operator of an asbestos mill shall either discharge no visible emissions to the outside air from that asbestos mill, including fugitive sources, or use the methods specified by § 61.152 to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air.
- (b) Each owner or operator of an asbestos mill shall meet the following requirements:
 - (1) Monitor each potential source of asbestos emissions from any part of the mill facility, including air cleaning devices, process equipment, and buildings that house equipment for material processing and handling, at least once each day, during daylight hours, for visible emissions to the outside air during periods of operation. The monitoring shall be by visual observation of at least 15 seconds duration per source of emissions.
 - (2) Inspect each air cleaning device at least once each week for proper operation and for changes that signal the potential for malfunction, including, to the maximum extent possible without dismantling other than opening the device, the presence of tears, holes, and abrasions in filter bags and for dust

deposits on the clean side of bags. For air cleaning devices that cannot be inspected on a weekly basis according to this paragraph, submit to the Administrator, and revise as necessary, a written maintenance plan to include, at a minimum, the following:

- (i) Maintenance schedule.
 - (ii) Recordkeeping plan.
- (3) Maintain records of the results of visible emissions monitoring and air cleaning device inspections using a format similar to that shown in Figures 1 and 2 and include the following:
- (i) Date and time of each inspection.
 - (ii) Presence or absence of visible emissions.
 - (iii) Condition of fabric filters, including presence of any tears, holes, and abrasions.
 - (iv) Presence of dust deposits on clean side of fabric filters.
 - (v) Brief description of corrective actions taken, including date and time.
 - (vi) Daily hours of operation for each air cleaning device.
- (4) Furnish upon request, and make available at the affected facility during normal business hours for inspection by the Administrator, all records required under this section.
- (5) Retain a copy of all monitoring and inspection records for at least 2 years.
- (6) Submit semiannually a copy of visible emission monitoring records to the Administrator if visible emissions occurred during the report period. Semiannual reports shall be postmarked by the 30th day following the end of the six-month period.

Date of inspection (mo/day/yr)	Time of inspection (a.m./p.m.)	Air cleaning device or fugitive source designation or number	Visible emissions observed (yes/no), corrective action taken	Daily operating hours	Inspector's initials

Figure 1. Record of Visible Emission Monitoring

1. Air cleaning device designation or number	_____	_____	_____	_____
2. Date of inspection	_____	_____	_____	_____
3. Time of inspection	_____	_____	_____	_____
4. Is air cleaning device operating properly (yes/no)	_____	_____	_____	_____
5. Tears, holes, or abrasions in fabric filter (yes/no)	_____	_____	_____	_____
6. Dust on clean side of fabric filters (yes/no)	_____	_____	_____	_____
7. Other signs of malfunctions or potential malfunctions (yes/no)	_____	_____	_____	_____
8. Describe other malfunctions or signs of potential malfunctions.	_____ _____ _____			
9. Describe corrective action(s) taken.	_____ _____ _____			
10. Date and time corrective action taken	_____	_____	_____	_____
11. Inspected by	_____			
_____	_____	_____	_____	_____
(Print/Type Name)	(Title)	(Signature)	(Date)	
_____	_____	_____	_____	_____
(Print/Type Name)	(Title)	(Signature)	(Date)	

Figure 2. Air Cleaning Device Inspection Checklist

[55 FR 48416, Nov. 20, 1990, as amended at 64 FR 7467, Feb. 12, 1999]

§ 61.143 Standard for roadways.

No person may construct or maintain a roadway with asbestos tailings or asbestos-containing waste material on that roadway, unless, for asbestos tailings.

- (a) It is a temporary roadway on an area of asbestos ore deposits (asbestos mine): or
- (b) It is a temporary roadway at an active asbestos mill site and is encapsulated with a resinous or bituminous binder. The encapsulated road surface must be maintained at a minimum frequency of once per year to prevent dust emissions; or
- (c) It is encapsulated in asphalt concrete meeting the specifications contained in section 401 of Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, FP-85, 1985, or their equivalent.

[55 FR 48419, Nov. 20, 1990; 56 FR 1669, Jan. 16, 1991]

§ 61.144 Standard for manufacturing.

- (a) **Applicability.** This section applies to the following manufacturing operations using commercial asbestos.
 - (1) The manufacture of cloth, cord, wicks, tubing, tape, twine, rope, thread, yarn, roving, lap, or other textile materials.
 - (2) The manufacture of cement products.
 - (3) The manufacture of fireproofing and insulating materials.
 - (4) The manufacture of friction products.
 - (5) The manufacture of paper, millboard, and felt.
 - (6) The manufacture of floor tile.
 - (7) The manufacture of paints, coatings, caulks, adhesives, and sealants.
 - (8) The manufacture of plastics and rubber materials.
 - (9) The manufacture of chlorine utilizing asbestos diaphragm technology.
 - (10) The manufacture of shotgun shell wads.
 - (11) The manufacture of asphalt concrete.
- (b) **Standard.** Each owner or operator of any of the manufacturing operations to which this section applies shall either:
 - (1) Discharge no visible emissions to the outside air from these operations or from any building or structure in which they are conducted or from any other fugitive sources; or
 - (2) Use the methods specified by § 61.152 to clean emissions from these operations containing particulate asbestos material before they escape to, or are vented to, the outside air.

- (3) Monitor each potential source of asbestos emissions from any part of the manufacturing facility, including air cleaning devices, process equipment, and buildings housing material processing and handling equipment, at least once each day during daylight hours for visible emissions to the outside air during periods of operation. The monitoring shall be by visual observation of at least 15 seconds duration per source of emissions.
- (4) Inspect each air cleaning device at least once each week for proper operation and for changes that signal the potential for malfunctions, including, to the maximum extent possible without dismantling other than opening the device, the presence of tears, holes, and abrasions in filter bags and for dust deposits on the clean side of bags. For air cleaning devices that cannot be inspected on a weekly basis according to this paragraph, submit to the Administrator, and revise as necessary, a written maintenance plan to include, at a minimum, the following:
 - (i) Maintenance schedule.
 - (ii) Recordkeeping plan.
- (5) Maintain records of the results of visible emission monitoring and air cleaning device inspections using a format similar to that shown in Figures 1 and 2 and include the following.
 - (i) Date and time of each inspection.
 - (ii) Presence or absence of visible emissions.
 - (iii) Condition of fabric filters, including presence of any tears, holes and abrasions.
 - (iv) Presence of dust deposits on clean side of fabric filters.
 - (v) Brief description of corrective actions taken, including date and time.
 - (vi) Daily hours of operation for each air cleaning device.
- (6) Furnish upon request, and make available at the affected facility during normal business hours for inspection by the Administrator, all records required under this section.
- (7) Retain a copy of all monitoring and inspection records for at least 2 years.
- (8) Submit semiannually a copy of the visible emission monitoring records to the Administrator if visible emission occurred during the report period. Semiannual reports shall be postmarked by the 30th day following the end of the six-month period.

[49 FR 13661, Apr. 5, 1984, as amended at 55 FR 48419, Nov. 20, 1990; 56 FR 1669, Jan. 16, 1991; 64 FR 7467, Feb. 12, 1999]

§ 61.145 Standard for demolition and renovation.

- (a) **Applicability.** To determine which requirements of paragraphs (a), (b), and (c) of this section apply to the owner or operator of a demolition or renovation activity and prior to the commencement of the demolition or renovation, thoroughly inspect the affected facility or part of the facility where the demolition or renovation operation will occur for the presence of asbestos, including Category I and Category II nonfriable ACM. The requirements of paragraphs (b) and (c) of this section apply to each owner or operator of a demolition or renovation activity, including the removal of RACM as follows:
 - (1) In a facility being demolished, all the requirements of paragraphs (b) and (c) of this section apply, except as provided in paragraph (a)(3) of this section, if the combined amount of RACM is

- (i) At least 80 linear meters (260 linear feet) on pipes or at least 15 square meters (160 square feet) on other facility components, or
 - (ii) At least 1 cubic meter (35 cubic feet) off facility components where the length or area could not be measured previously.
- (2) In a facility being demolished, only the notification requirements of paragraphs (b)(1), (2), (3)(i) and (iv), and (4)(i) through (vii) and (4)(ix) and (xvi) of this section apply, if the combined amount of RACM is
 - (i) Less than 80 linear meters (260 linear feet) on pipes and less than 15 square meters (160 square feet) on other facility components, and
 - (ii) Less than one cubic meter (35 cubic feet) off facility components where the length or area could not be measured previously or there is no asbestos.
- (3) If the facility is being demolished under an order of a State or local government agency, issued because the facility is structurally unsound and in danger of imminent collapse, only the requirements of paragraphs (b)(1), (b)(2), (b)(3)(iii), (b)(4) (except (b)(4)(viii)), (b)(5), and (c)(4) through (c)(9) of this section apply.
- (4) In a facility being renovated, including any individual nonscheduled renovation operation, all the requirements of paragraphs (b) and (c) of this section apply if the combined amount of RACM to be stripped, removed, dislodged, cut, drilled, or similarly disturbed is
 - (i) At least 80 linear meters (260 linear feet) on pipes or at least 15 square meters (160 square feet) on other facility components, or
 - (ii) At least 1 cubic meter (35 cubic feet) off facility components where the length or area could not be measured previously.
 - (iii) To determine whether paragraph (a)(4) of this section applies to planned renovation operations involving individual nonscheduled operations, predict the combined additive amount of RACM to be removed or stripped during a calendar year of January 1 through December 31.
 - (iv) To determine whether paragraph (a)(4) of this section applies to emergency renovation operations, estimate the combined amount of RACM to be removed or stripped as a result of the sudden, unexpected event that necessitated the renovation.
- (5) Owners or operators of demolition and renovation operations are exempt from the requirements of §§ 61.05(a), 61.07, and 61.09.
- (b) **Notification requirements.** Each owner or operator of a demolition or renovation activity to which this section applies shall:
 - (1) Provide the Administrator with written notice of intention to demolish or renovate. Delivery of the notice by U.S. Postal Service, commercial delivery service, or hand delivery is acceptable.
 - (2) Update notice, as necessary, including when the amount of asbestos affected changes by at least 20 percent.
 - (3) Postmark or deliver the notice as follows:

- (i) At least 10 working days before asbestos stripping or removal work or any other activity begins (such as site preparation that would break up, dislodge or similarly disturb asbestos material), if the operation is described in paragraphs (a) (1) and (4) (except (a)(4)(iii) and (a)(4)(iv)) of this section. If the operation is as described in paragraph (a)(2) of this section, notification is required 10 working days before demolition begins.
- (ii) At least 10 working days before the end of the calendar year preceding the year for which notice is being given for renovations described in paragraph (a)(4)(iii) of this section.
- (iii) As early as possible before, but not later than, the following working day if the operation is a demolition ordered according to paragraph (a)(3) of this section or, if the operation is a renovation described in paragraph (a)(4)(iv) of this section.
- (iv) For asbestos stripping or removal work in a demolition or renovation operation, described in paragraphs (a) (1) and (4) (except (a)(4)(iii) and (a)(4)(iv)) of this section, and for a demolition described in paragraph (a)(2) of this section, that will begin on a date other than the one contained in the original notice, notice of the new start date must be provided to the Administrator as follows:
 - (A) When the asbestos stripping or removal operation or demolition operation covered by this paragraph will begin after the date contained in the notice,
 - (1) Notify the Administrator of the new start date by telephone as soon as possible before the original start date, and
 - (2) Provide the Administrator with a written notice of the new start date as soon as possible before, and no later than, the original start date. Delivery of the updated notice by the U.S. Postal Service, commercial delivery service, or hand delivery is acceptable.
 - (B) When the asbestos stripping or removal operation or demolition operation covered by this paragraph will begin on a date earlier than the original start date,
 - (1) Provide the Administrator with a written notice of the new start date at least 10 working days before asbestos stripping or removal work begins.
 - (2) For demolitions covered by paragraph (a)(2) of this section, provide the Administrator written notice of a new start date at least 10 working days before commencement of demolition. Delivery of updated notice by U.S. Postal Service, commercial delivery service, or hand delivery is acceptable.
 - (C) In no event shall an operation covered by this paragraph begin on a date other than the date contained in the written notice of the new start date.
- (4) Include the following in the notice:
 - (i) An indication of whether the notice is the original or a revised notification.
 - (ii) Name, address, and telephone number of both the facility owner and operator and the asbestos removal contractor owner or operator.
 - (iii) Type of operation: demolition or renovation.
 - (iv) Description of the facility or affected part of the facility including the size (square meters [square feet] and number of floors), age, and present and prior use of the facility.

- (v) Procedure, including analytical methods, employed to detect the presence of RACM and Category I and Category II nonfriable ACM.
 - (vi) Estimate of the approximate amount of RACM to be removed from the facility in terms of length of pipe in linear meters (linear feet), surface area in square meters (square feet) on other facility components, or volume in cubic meters (cubic feet) if off the facility components. Also, estimate the approximate amount of Category I and Category II nonfriable ACM in the affected part of the facility that will not be removed before demolition.
 - (vii) Location and street address (including building number or name and floor or room number, if appropriate), city, county, and state, of the facility being demolished or renovated.
 - (viii) Scheduled starting and completion dates of asbestos removal work (or any other activity, such as site preparation that would break up, dislodge, or similarly disturb asbestos material) in a demolition or renovation; planned renovation operations involving individual nonscheduled operations shall only include the beginning and ending dates of the report period as described in paragraph (a)(4)(iii) of this section.
 - (ix) Scheduled starting and completion dates of demolition or renovation.
 - (x) Description of planned demolition or renovation work to be performed and method(s) to be employed, including demolition or renovation techniques to be used and description of affected facility components.
 - (xi) Description of work practices and engineering controls to be used to comply with the requirements of this subpart, including asbestos removal and waste-handling emission control procedures.
 - (xii) Name and location of the waste disposal site where the asbestos-containing waste material will be deposited.
 - (xiii) A certification that at least one person trained as required by paragraph (c)(8) of this section will supervise the stripping and removal described by this notification. This requirement shall become effective 1 year after promulgation of this regulation.
 - (xiv) For facilities described in paragraph (a)(3) of this section, the name, title, and authority of the State or local government representative who has ordered the demolition, the date that the order was issued, and the date on which the demolition was ordered to begin. A copy of the order shall be attached to the notification.
 - (xv) For emergency renovations described in paragraph (a)(4)(iv) of this section, the date and hour that the emergency occurred, a description of the sudden, unexpected event, and an explanation of how the event caused an unsafe condition, or would cause equipment damage or an unreasonable financial burden.
 - (xvi) Description of procedures to be followed in the event that unexpected RACM is found or Category II nonfriable ACM becomes crumbled, pulverized, or reduced to powder.
 - (xvii) Name, address, and telephone number of the waste transporter.
- (5) The information required in paragraph (b)(4) of this section must be reported using a form similar to that shown in Figure 3.

- (c) ***Procedures for asbestos emission control.*** Each owner or operator of a demolition or renovation activity to whom this paragraph applies, according to paragraph (a) of this section, shall comply with the following procedures:
- (1) Remove all RACM from a facility being demolished or renovated before any activity begins that would break up, dislodge, or similarly disturb the material or preclude access to the material for subsequent removal. RACM need not be removed before demolition if:
 - (i) It is Category I nonfriable ACM that is not in poor condition and is not friable.
 - (ii) It is on a facility component that is encased in concrete or other similarly hard material and is adequately wet whenever exposed during demolition; or
 - (iii) It was not accessible for testing and was, therefore, not discovered until after demolition began and, as a result of the demolition, the material cannot be safely removed. If not removed for safety reasons, the exposed RACM and any asbestos-contaminated debris must be treated as asbestos-containing waste material and adequately wet at all times until disposed of.
 - (iv) They are Category II nonfriable ACM and the probability is low that the materials will become crumbled, pulverized, or reduced to powder during demolition.
 - (2) When a facility component that contains, is covered with, or is coated with RACM is being taken out of the facility as a unit or in sections:
 - (i) Adequately wet all RACM exposed during cutting or disjoining operations; and
 - (ii) Carefully lower each unit or section to the floor and to ground level, not dropping, throwing, sliding, or otherwise damaging or disturbing the RACM.
 - (3) When RACM is stripped from a facility component while it remains in place in the facility, adequately wet the RACM during the stripping operation.
 - (i) In renovation operations, wetting is not required if:
 - (A) The owner or operator has obtained prior written approval from the Administrator based on a written application that wetting to comply with this paragraph would unavoidably damage equipment or present a safety hazard; and
 - (B) The owner or operator uses of the following emission control methods:
 - (1) A local exhaust ventilation and collection system designed and operated to capture the particulate asbestos material produced by the stripping and removal of the asbestos materials. The system must exhibit no visible emissions to the outside air or be designed and operated in accordance with the requirements in § 61.152.
 - (2) A glove-bag system designed and operated to contain the particulate asbestos material produced by the stripping of the asbestos materials.
 - (3) Leak-tight wrapping to contain all RACM prior to dismantlement.
 - (ii) In renovation operations where wetting would result in equipment damage or a safety hazard, and the methods allowed in paragraph (c)(3)(i) of this section cannot be used, another method may be used after obtaining written approval from the Administrator based upon a determination that it is equivalent to wetting in controlling emissions or to the methods allowed in paragraph (c)(3)(i) of this section.

- (iii) A copy of the Administrator's written approval shall be kept at the worksite and made available for inspection.
- (4) After a facility component covered with, coated with, or containing RACM has been taken out of the facility as a unit or in sections pursuant to paragraph (c)(2) of this section, it shall be stripped or contained in leak-tight wrapping, except as described in paragraph (c)(5) of this section. If stripped, either:
 - (i) Adequately wet the RACM during stripping; or
 - (ii) Use a local exhaust ventilation and collection system designed and operated to capture the particulate asbestos material produced by the stripping. The system must exhibit no visible emissions to the outside air or be designed and operated in accordance with the requirements in § 61.152.
- (5) For large facility components such as reactor vessels, large tanks, and steam generators, but not beams (which must be handled in accordance with paragraphs (c)(2), (3), and (4) of this section), the RACM is not required to be stripped if the following requirements are met:
 - (i) The component is removed, transported, stored, disposed of, or reused without disturbing or damaging the RACM.
 - (ii) The component is encased in a leak-tight wrapping.
 - (iii) The leak-tight wrapping is labeled according to § 61.149(d)(1)(i), (ii), and (iii) during all loading and unloading operations and during storage.
- (6) For all RACM, including material that has been removed or stripped:
 - (i) Adequately wet the material and ensure that it remains wet until collected and contained or treated in preparation for disposal in accordance with § 61.150; and
 - (ii) Carefully lower the material to the ground and floor, not dropping, throwing, sliding, or otherwise damaging or disturbing the material.
 - (iii) Transport the material to the ground via leak-tight chutes or containers if it has been removed or stripped more than 50 feet above ground level and was not removed as units or in sections.
 - (iv) RACM contained in leak-tight wrapping that has been removed in accordance with paragraphs (c)(4) and (c)(3)(i)(B)(3) of this section need not be wetted.
- (7) When the temperature at the point of wetting is below 0 °C (32 °F):
 - (i) The owner or operator need not comply with paragraph (c)(2)(i) and the wetting provisions of paragraph (c)(3) of this section.
 - (ii) The owner or operator shall remove facility components containing, coated with, or covered with RACM as units or in sections to the maximum extent possible.
 - (iii) During periods when wetting operations are suspended due to freezing temperatures, the owner or operator must record the temperature in the area containing the facility components at the beginning, middle, and end of each workday and keep daily temperature records available for inspection by the Administrator during normal business hours at the demolition or renovation site. The owner or operator shall retain the temperature records for at least 2 years.

- (8) Effective 1 year after promulgation of this regulation, no RACM shall be stripped, removed, or otherwise handled or disturbed at a facility regulated by this section unless at least one on-site representative, such as a foreman or management-level person or other authorized representative, trained in the provisions of this regulation and the means of complying with them, is present. Every 2 years, the trained on-site individual shall receive refresher training in the provisions of this regulation. The required training shall include as a minimum: applicability; notifications; material identification; control procedures for removals including, at least, wetting, local exhaust ventilation, negative pressure enclosures, glove-bag procedures, and High Efficiency Particulate Air (HEPA) filters; waste disposal work practices; reporting and recordkeeping; and asbestos hazards and worker protection. Evidence that the required training has been completed shall be posted and made available for inspection by the Administrator at the demolition or renovation site.
- (9) For facilities described in paragraph (a)(3) of this section, adequately wet the portion of the facility that contains RACM during the wrecking operation.
- (10) If a facility is demolished by intentional burning, all RACM including Category I and Category II nonfriable ACM must be removed in accordance with the NESHAP before burning.

NOTIFICATION OF DEMOLITION AND RENOVATION

Operator Project #	Postmark	Date Received	Notification #
I. TYPE OF NOTIFICATION (O=Original R=Revised C=Cancelled):			
II. FACILITY INFORMATION (Identify owner, removal contractor, and other operator)			
OWNER NAME:			
Address:			
City:	State:	Zip:	
Contact:	Tel:		
REMOVAL CONTRACTOR:			
Address:			
City:	State:	Zip:	
Contact:	Tel:		
OTHER OPERATOR:			
Address:			
City:	State:	Zip:	
Contact:	Tel:		
III. TYPE OF OPERATION (D=Demo O=Ordered Demo R=Renovation E=Emer.Renovation):			
IV. IS ASBESTOS PRESENT? (Yes/No)			
V. FACILITY DESCRIPTION (Include building name, number and floor or room number)			
Bldg Name:			
Address:			
City:	State:	County:	
Site Location:			
Building Size:	# of Floors:	Age in Years:	
Present User:		Prior User:	
VI. PROCEDURE, INCLUDING ANALYTICAL METHOD, IF APPROPRIATE, USED TO DETECT THE PRESENCE OF ASBESTOS MATERIAL:			
VII. APPROXIMATE AMOUNT OF ASBESTOS, INCLUDING:		Nonfriable Asbestos Material Not To Be Removed	
1. Regulated ACM to be removed		Cat I	
2. Category I ACM Not Removed		Cat II	
3. Category II ACM Not Removed		UNIT	
Pipes	RACM To Be Removed	Ln Ft:	Ln m:
Surface Area		Sq Ft:	Sq m:
Vol RACM Off Facility Component		Cu Ft:	Cu m:
VIII. SCHEDULED DATES ASBESTOS REMOVAL (MM/DD/YY) Start: Complete:			
IX. SCHEDULED DATES DEMO/RENOVATION (MM/DD/YY) Start: Complete:			

Continued on page two

Figure 3. Notification of Demolition and Renovation

NOTIFICATION OF DEMOLITION AND RENOVATION (continued)

X. DESCRIPTION OF PLANNED DEMOLITION OR RENOVATION WORK, AND METHOD(S) TO BE USED:		
XI. DESCRIPTION OF WORK PRACTICES AND ENGINEERING CONTROLS TO BE USED TO PREVENT EMISSIONS OF ASBESTOS AT THE DEMOLITION AND RENOVATION SITE:		
XII. WASTE TRANSPORTER #1		
Name:		
Address:		
City:	State:	Zip:
Contact Person:		Telephone:
WASTE TRANSPORTER #2		
Name:		
Address:		
City:	State:	Zip:
Contact Person:		Telephone:
XIII. WASTE DISPOSAL SITE		
Name:		
Location:		
City:	State:	Zip:
Telephone:		
XIV. IF DEMOLITION ORDERED BY A GOVERNMENT AGENCY, PLEASE IDENTIFY THE AGENCY BELOW:		
Name:	Title:	
Authority:		
Date of Order (MM/DD/YY):	Date Ordered to Begin (MM/DD/YY):	
XV. FOR EMERGENCY RENOVATIONS		
Date and Hour of Emergency (MM/DD/YY):		
Description of the Sudden, Unexpected Event:		
Explanation of how the event caused unsafe conditions or would cause equipment damage or an unreasonable financial burden:		
XVI. DESCRIPTION OF PROCEDURES TO BE FOLLOWED IN THE EVENT THAT UNEXPECTED ASBESTOS IS FOUND OR PREVIOUSLY NONFRIABLE ASBESTOS MATERIAL BECOMES CRUMBLED, PULVERIZED, OR REDUCED TO POWDER.		
XVI. I CERTIFY THAT AN INDIVIDUAL TRAINED IN THE PROVISIONS OF THIS REGULATION (40 CFR PART 61, SUBPART M) WILL BE ON-SITE DURING THE DEMOLITION OR RENOVATION AND EVIDENCE THAT THE REQUIRED TRAINING HAS BEEN ACCOMPLISHED BY THIS PERSON WILL BE AVAILABLE FOR INSPECTION DURING NORMAL BUSINESS HOURS. (Required 1 year after promulgation)		
_____ (Signature of Owner/Operator)		_____ (Date)
XVII. I CERTIFY THAT THE ABOVE INFORMATION IS CORRECT.		
_____ (Signature of Owner/Operator)		_____ (Date)

Figure 3. Notification of Demolition and Renovation

[55 FR 48419, Nov. 20, 1990; 56 FR 1669, Jan. 16, 1991]

§ 61.146 Standard for spraying.

The owner or operator of an operation in which asbestos-containing materials are spray applied shall comply with the following requirements:

- (a) For spray-on application on buildings, structures, pipes, and conduits, do not use material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy, except as provided in paragraph (c) of this section.
- (b) For spray-on application of materials that contain more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy, on equipment and machinery, except as provided in paragraph (c) of this section:
 - (1) Notify the Administrator at least 20 days before beginning the spraying operation. Include the following information in the notice:
 - (i) Name and address of owner or operator.
 - (ii) Location of spraying operation.
 - (iii) Procedures to be followed to meet the requirements of this paragraph.
 - (2) Discharge no visible emissions to the outside air from spray-on application of the asbestos-containing material or use the methods specified by § 61.152 to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air.
- (c) The requirements of paragraphs (a) and (b) of this section do not apply to the spray-on application of materials where the asbestos fibers in the materials are encapsulated with a bituminous or resinous binder during spraying and the materials are not friable after drying.
- (d) Owners or operators of sources subject to this paragraph are exempt from the requirements of §§ 61.05(a), 61.07 and 61.09.

[49 FR 13661, Apr. 5, 1984. Redesignated and amended at 55 FR 48424, Nov. 20, 1990; 60 FR 31920, June 19, 1995]

§ 61.147 Standard for fabricating.

- (a) **Applicability.** This section applies to the following fabricating operations using commercial asbestos:
 - (1) The fabrication of cement building products.
 - (2) The fabrication of friction products, except those operations that primarily install asbestos friction materials on motor vehicles.
 - (3) The fabrication of cement or silicate board for ventilation hoods; ovens; electrical panels; laboratory furniture, bulkheads, partitions, and ceilings for marine construction; and flow control devices for the molten metal industry.
- (b) **Standard.** Each owner or operator of any of the fabricating operations to which this section applies shall either:

- (1) Discharge no visible emissions to the outside air from any of the operations or from any building or structure in which they are conducted or from any other fugitive sources; or
- (2) Use the methods specified by § 61.152 to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air.
- (3) Monitor each potential source of asbestos emissions from any part of the fabricating facility, including air cleaning devices, process equipment, and buildings that house equipment for material processing and handling, at least once each day, during daylight hours, for visible emissions to the outside air during periods of operation. The monitoring shall be by visual observation of at least 15 seconds duration per source of emissions.
- (4) Inspect each air cleaning device at least once each week for proper operation and for changes that signal the potential for malfunctions, including, to the maximum extent possible without dismantling other than opening the device, the presence of tears, holes, and abrasions in filter bags and for dust deposits on the clean side of bags. For air cleaning devices that cannot be inspected on a weekly basis according to this paragraph, submit to the Administrator, and revise as necessary, a written maintenance plan to include, at a minimum, the following:
 - (i) Maintenance schedule.
 - (ii) Recordkeeping plan.
- (5) Maintain records of the results of visible emission monitoring and air cleaning device inspections using a format similar to that shown in Figures 1 and 2 and include the following:
 - (i) Date and time of each inspection.
 - (ii) Presence or absence of visible emissions.
 - (iii) Condition of fabric filters, including presence of any tears, holes, and abrasions.
 - (iv) Presence of dust deposits on clean side of fabric filters.
 - (v) Brief description of corrective actions taken, including date and time.
 - (vi) Daily hours of operation for each air cleaning device.
- (6) Furnish upon request and make available at the affected facility during normal business hours for inspection by the Administrator, all records required under this section.
- (7) Retain a copy of all monitoring and inspection records for at least 2 years.
- (8) Submit semiannually a copy of the visible emission monitoring records to the Administrator if visible emission occurred during the report period. Semiannual reports shall be postmarked by the 30th day following the end of the six-month period.

[49 FR 13661, Apr. 5, 1984. Redesignated and amended at 55 FR 48424, Nov. 20, 1991; 64 FR 7467, Feb. 12, 1999]

§ 61.148 Standard for insulating materials.

No owner or operator of a facility may install or reinstall on a facility component any insulating materials that contain commercial asbestos if the materials are either molded and friable or wet-applied and friable after drying. The provisions of this section do not apply to spray-applied insulating materials regulated under § 61.146.

[55 FR 48424, Nov. 20, 1990]

§ 61.149 Standard for waste disposal for asbestos mills.

Each owner or operator of any source covered under the provisions of § 61.142 shall:

- (a) Deposit all asbestos-containing waste material at a waste disposal site operated in accordance with the provisions of § 61.154; and
- (b) Discharge no visible emissions to the outside air from the transfer of control device asbestos waste to the tailings conveyor, or use the methods specified by § 61.152 to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air. Dispose of the asbestos waste from control devices in accordance with § 61.150(a) or paragraph (c) of this section; and
- (c) Discharge no visible emissions to the outside air during the collection, processing, packaging, or on-site transporting of any asbestos-containing waste material, or use one of the disposal methods specified in paragraphs (c) (1) or (2) of this section, as follows:
 - (1) Use a wetting agent as follows:
 - (i) Adequately mix all asbestos-containing waste material with a wetting agent recommended by the manufacturer of the agent to effectively wet dust and tailings, before depositing the material at a waste disposal site. Use the agent as recommended for the particular dust by the manufacturer of the agent.
 - (ii) Discharge no visible emissions to the outside air from the wetting operation or use the methods specified by § 61.152 to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air.
 - (iii) Wetting may be suspended when the ambient temperature at the waste disposal site is less than -9.5°C (15°F), as determined by an appropriate measurement method with an accuracy of $\pm 1^{\circ}\text{C}$ ($\pm 2^{\circ}\text{F}$). During periods when wetting operations are suspended, the temperature must be recorded at least at hourly intervals, and records must be retained for at least 2 years in a form suitable for inspection.
 - (2) Use an alternative emission control and waste treatment method that has received prior written approval by the Administrator. To obtain approval for an alternative method, a written application must be submitted to the Administrator demonstrating that the following criteria are met:
 - (i) The alternative method will control asbestos emissions equivalent to currently required methods.
 - (ii) The suitability of the alternative method for the intended application.
 - (iii) The alternative method will not violate other regulations.
 - (iv) The alternative method will not result in increased water pollution, land pollution, or occupational hazards.
- (d) When waste is transported by vehicle to a disposal site:
 - (1) Mark vehicles used to transport asbestos-containing waste material during the loading and unloading of the waste so that the signs are visible. The markings must:
 - (i) Be displayed in such a manner and location that a person can easily read the legend.

- (ii) Conform to the requirements for 51 cm × 36 cm (20 in × 14 in) upright format signs specified in 29 CFR 1910.145(d)(4) and this paragraph; and
- (iii) Display the following legend in the lower panel with letter sizes and styles of a visibility at least equal to those specified in this paragraph.

LEGEND

DANGER

ASBESTOS DUST HAZARD

CANCER AND LUNG DISEASE HAZARD

AUTHORIZED PERSONNEL ONLY

NOTATION

2.5 CM (1 INCH) SANS SERIF, GOTHIC OR BLOCK

2.5 CM (1 INCH) SANS SERIF, GOTHIC OR BLOCK

1.9 CM (3/4 INCH) SANS SERIF, GOTHIC OR BLOCK

14 POINT GOTHIC

Spacing between any two lines must be at least equal to the height of the upper of the two lines.

- (2) For off-site disposal, provide a copy of the waste shipment record, described in paragraph (e)(1) of this section, to the disposal site owner or operator at the same time as the asbestos-containing waste material is delivered to the disposal site.
- (e) For all asbestos-containing waste material transported off the facility site:
 - (1) Maintain asbestos waste shipment records, using a form similar to that shown in Figure 4, and include the following information:
 - (i) The name, address, and telephone number of the waste generator.
 - (ii) The name and address of the local, State, or EPA Regional agency responsible for administering the asbestos NESHAP program.
 - (iii) The quantity of the asbestos-containing waste material in cubic meters (cubic yards).
 - (iv) The name and telephone number of the disposal site operator.
 - (v) The name and physical site location of the disposal site.
 - (vi) The date transported.
 - (vii) The name, address, and telephone number of the transporter(s).

- (viii) A certification that the contents of this consignment are fully and accurately described by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.
- (2) For waste shipments where a copy of the waste shipment record, signed by the owner or operator of the designated disposal site, is not received by the waste generator within 35 days of the date the waste was accepted by the initial transporter, contact the transporter and/or the owner or operator of the designated disposal site to determine the status of the waste shipment.
- (3) Report in writing to the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the waste generator if a copy of the waste shipment record, signed by the owner or operator of the designated waste disposal site, is not received by the waste generator within 45 days of the date the waste was accepted by the initial transporter. Include in the report the following information:
 - (i) A copy of the waste shipment record for which a confirmation of delivery was not received, and
 - (ii) A cover letter signed by the waste generator explaining the efforts taken to locate the asbestos waste shipment and the results of those efforts.
- (4) Retain a copy of all waste shipment records, including a copy of the waste shipment record signed by the owner or operator of the designated waste disposal site, for at least 2 years.
- (f) Furnish upon request, and make available for inspection by the Administrator, all records required under this section.

Generator	1. Work site name and mailing address		Owner's name	Owner's telephone no.
	2. Operator's name and address			Operator's telephone no.
	3. Waste disposal site (WDS) name, mailing address, and physical site location			WDS phone no.
	4. Name, and address of responsible agency			
	5. Description of materials		6. Containers No. Type	7. Total quantity m ³ (yd ³)
Transporter	8. Special handling instructions and additional information			
	9. OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.			
	Printed/typed name & title		Signature	Month Day Year
	10. Transporter 1 (Acknowledgment of receipt of materials)			
	Printed/typed name & title		Signature	Month Day Year
Disposal Site	Address and telephone no.			
	11. Transporter 2 (Acknowledgment of receipt of materials)			
	Printed/typed name & title		Signature	Month Day Year
	Address and telephone no.			
	12. Discrepancy indication space			
Disposal Site	13. Waste disposal site owner or operator: Certification of receipt of asbestos materials covered by this manifest except as noted in item 12.			
	Printed/typed name & title		Signature	Month Day Year

(Continued)

Figure 4. Waste Shipment Record

INSTRUCTIONS

Waste Generator Section (Items 1-9)

1. Enter the name of the facility at which asbestos waste is generated and the address where the facility is located. In the appropriate spaces, also enter the name of the owner of the facility and the owner's phone number.
2. If a demolition or renovation, enter the name and address of the company and authorized agent responsible for performing the asbestos removal. In the appropriate spaces, also enter the phone number of the operator.
3. Enter the name, address, and physical site location of the waste disposal site (WDS) that will be receiving the asbestos materials. In the appropriate spaces, also enter the phone number of the WDS. Enter "on-site" if the waste will be disposed of on the generator's property.
4. Provide the name and address of the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program.
5. Indicate the types of asbestos waste materials generated. If from a demolition or renovation, indicate the amount of asbestos that is
 - Friable asbestos material
 - Nonfriable asbestos material
6. Enter the number of containers used to transport the asbestos materials listed in item 5. Also enter one of the following container codes used in transporting each type of asbestos material (specify any other type of container used if not listed below):
 - DM - Metal drums, barrels
 - DP - Plastic drums, barrels
 - BA - 6 mil plastic bags or wrapping
7. Enter the quantities of each type of asbestos material removed in units of cubic meters (cubic yards).
8. Use this space to indicate special transportation, treatment, storage or disposal or Bill of Lading information. If an alternate waste disposal site is designated, note it here. Emergency response telephone numbers or similar information may be included here.
9. The authorized agent of the waste generator must read and then sign and date this certification. The date is the date of receipt by transporter.

NOTE: The waste generator must retain a copy of this form.

(continued)

Transporter Section (Items 10 & 11)

10. & 11. Enter name, address, and telephone number of each transporter used, if applicable. Print or type the full name and title of person accepting responsibility and acknowledging receipt of materials as listed on this waste shipment record for transport. Enter date of receipt and signature.

NOTE: The transporter must retain a copy of this form.

Disposal Site Section (Items 12 & 13)

12. The authorized representative of the WDS must note in this space any discrepancy between waste described on this manifest and waste actually received as well as any improperly enclosed or contained waste. Any rejected materials should be listed and destination of those materials provided. A site that converts asbestos-containing waste material to nonasbestos material is considered a WDS.
13. The signature (by hand) of the authorized WDS agent indicates acceptance and agreement with statements on this manifest except as noted in item 12. The date is the date of signature and receipt of shipment.

NOTE: The WDS must retain a completed copy of this form. The WDS must also send a completed copy to the operator listed in item 2.

Figure 4. Waste Shipment Record

§ 61.150 Standard for waste disposal for manufacturing, fabricating, demolition, renovation, and spraying operations.

Each owner or operator of any source covered under the provisions of §§ 61.144, 61.145, 61.146, and 61.147 shall comply with the following provisions:

- (a) Discharge no visible emissions to the outside air during the collection, processing (including incineration), packaging, or transporting of any asbestos-containing waste material generated by the source, or use one of the emission control and waste treatment methods specified in paragraphs (a) (1) through (4) of this section.
 - (1) Adequately wet asbestos-containing waste material as follows:
 - (i) Mix control device asbestos waste to form a slurry; adequately wet other asbestos-containing waste material; and
 - (ii) Discharge no visible emissions to the outside air from collection, mixing, wetting, and handling operations, or use the methods specified by § 61.152 to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air; and

- (iii) After wetting, seal all asbestos-containing waste material in leak-tight containers while wet; or, for materials that will not fit into containers without additional breaking, put materials into leak-tight wrapping; and
 - (iv) Label the containers or wrapped materials specified in paragraph (a)(1)(iii) of this section using warning labels specified by Occupational Safety and Health Standards of the Department of Labor, Occupational Safety and Health Administration (OSHA) under 29 CFR 1910.1001(j)(4) or 1926.1101(k)(8). The labels shall be printed in letters of sufficient size and contrast so as to be readily visible and legible.
 - (v) For asbestos-containing waste material to be transported off the facility site, label containers or wrapped materials with the name of the waste generator and the location at which the waste was generated.
- (2) Process asbestos-containing waste material into nonfriable forms as follows:
- (i) Form all asbestos-containing waste material into nonfriable pellets or other shapes;
 - (ii) Discharge no visible emissions to the outside air from collection and processing operations, including incineration, or use the method specified by § 61.152 to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air.
- (3) For facilities demolished where the RACM is not removed prior to demolition according to §§ 61.145(c)(1) (i), (ii), (iii), and (iv) or for facilities demolished according to § 61.145(c)(9), adequately wet asbestos-containing waste material at all times after demolition and keep wet during handling and loading for transport to a disposal site. Asbestos-containing waste materials covered by this paragraph do not have to be sealed in leak-tight containers or wrapping but may be transported and disposed of in bulk.
- (4) Use an alternative emission control and waste treatment method that has received prior approval by the Administrator according to the procedure described in § 61.149(c)(2).
- (5) As applied to demolition and renovation, the requirements of paragraph (a) of this section do not apply to Category I nonfriable ACM waste and Category II nonfriable ACM waste that did not become crumbled, pulverized, or reduced to powder.
- (b) All asbestos-containing waste material shall be deposited as soon as is practical by the waste generator at:
- (1) A waste disposal site operated in accordance with the provisions of § 61.154, or
 - (2) An EPA-approved site that converts RACM and asbestos-containing waste material into nonasbestos (asbestos-free) material according to the provisions of § 61.155.
 - (3) The requirements of paragraph (b) of this section do not apply to Category I nonfriable ACM that is not RACM.
- (c) Mark vehicles used to transport asbestos-containing waste material during the loading and unloading of waste so that the signs are visible. The markings must conform to the requirements of §§ 61.149(d)(1) (i), (ii), and (iii).
- (d) For all asbestos-containing waste material transported off the facility site:
- (1) Maintain waste shipment records, using a form similar to that shown in Figure 4, and include the following information:

- (i) The name, address, and telephone number of the waste generator.
 - (ii) The name and address of the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program.
 - (iii) The approximate quantity in cubic meters (cubic yards).
 - (iv) The name and telephone number of the disposal site operator.
 - (v) The name and physical site location of the disposal site.
 - (vi) The date transported.
 - (vii) The name, address, and telephone number of the transporter(s).
 - (viii) A certification that the contents of this consignment are fully and accurately described by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.
- (2) Provide a copy of the waste shipment record, described in paragraph (d)(1) of this section, to the disposal site owners or operators at the same time as the asbestos-containing waste material is delivered to the disposal site.
- (3) For waste shipments where a copy of the waste shipment record, signed by the owner or operator of the designated disposal site, is not received by the waste generator within 35 days of the date the waste was accepted by the initial transporter, contact the transporter and/or the owner or operator of the designated disposal site to determine the status of the waste shipment.
- (4) Report in writing to the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the waste generator if a copy of the waste shipment record, signed by the owner or operator of the designated waste disposal site, is not received by the waste generator within 45 days of the date the waste was accepted by the initial transporter. Include in the report the following information:
- (i) A copy of the waste shipment record for which a confirmation of delivery was not received, and
 - (ii) A cover letter signed by the waste generator explaining the efforts taken to locate the asbestos waste shipment and the results of those efforts.
- (5) Retain a copy of all waste shipment records, including a copy of the waste shipment record signed by the owner or operator of the designated waste disposal site, for at least 2 years.
- (e) Furnish upon request, and make available for inspection by the Administrator, all records required under this section.

[55 FR 48429, Nov. 20, 1990; 56 FR 1669, Jan. 16, 1991, as amended at 68 FR 54793, Sept. 18, 2003]

§ 61.151 Standard for inactive waste disposal sites for asbestos mills and manufacturing and fabricating operations.

Each owner or operator of any inactive waste disposal site that was operated by sources covered under § 61.142, 61.144, or 61.147 and received deposits of asbestos-containing waste material generated by the sources, shall:

- (a) Comply with one of the following:
- (1) Either discharge no visible emissions to the outside air from an inactive waste disposal site subject to this paragraph; or
 - (2) Cover the asbestos-containing waste material with at least 15 centimeters (6 inches) of compacted nonasbestos-containing material, and grow and maintain a cover of vegetation on the area adequate to prevent exposure of the asbestos-containing waste material. In desert areas where vegetation would be difficult to maintain, at least 8 additional centimeters (3 inches) of well-graded, nonasbestos crushed rock may be placed on top of the final cover instead of vegetation and maintained to prevent emissions; or
 - (3) Cover the asbestos-containing waste material with at least 60 centimeters (2 feet) of compacted nonasbestos-containing material, and maintain it to prevent exposure of the asbestos-containing waste; or
 - (4) For inactive waste disposal sites for asbestos tailings, a resinous or petroleum-based dust suppression agent that effectively binds dust to control surface air emissions may be used instead of the methods in paragraphs (a) (1), (2), and (3) of this section. Use the agent in the manner and frequency recommended for the particular asbestos tailings by the manufacturer of the dust suppression agent to achieve and maintain dust control. Obtain prior written approval of the Administrator to use other equally effective dust suppression agents. For purposes of this paragraph, any used, spent, or other waste oil is not considered a dust suppression agent.
- (b) Unless a natural barrier adequately deters access by the general public, install and maintain warning signs and fencing as follows, or comply with paragraph (a)(2) or (a)(3) of this section.
- (1) Display warning signs at all entrances and at intervals of 100 m (328 ft) or less along the property line of the site or along the perimeter of the sections of the site where asbestos-containing waste material was deposited. The warning signs must:
 - (i) Be posted in such a manner and location that a person can easily read the legend; and
 - (ii) Conform to the requirements for 51 cm × 36 cm (20" × 14") upright format signs specified in 29 CFR 1910.145(d)(4) and this paragraph; and
 - (iii) Display the following legend in the lower panel with letter sizes and styles of a visibility at least equal to those specified in this paragraph.

Legend	Notation
Asbestos Waste Disposal Site	2.5 cm (1 inch) Sans Serif, Gothic or Block
Do Not Create Dust	1.9 cm (³ / ₄ inch) Sans Serif, Gothic or Block
Breathing Asbestos is Hazardous to Your Health	14 Point Gothic.

Spacing between any two lines must be at least equal to the height of the upper of the two lines.

- (2) Fence the perimeter of the site in a manner adequate to deter access by the general public.

- (3) When requesting a determination on whether a natural barrier adequately deters public access, supply information enabling the Administrator to determine whether a fence or a natural barrier adequately deters access by the general public.
- (c) The owner or operator may use an alternative control method that has received prior approval of the Administrator rather than comply with the requirements of paragraph (a) or (b) of this section.
- (d) Notify the Administrator in writing at least 45 days prior to excavating or otherwise disturbing any asbestos-containing waste material that has been deposited at a waste disposal site under this section, and follow the procedures specified in the notification. If the excavation will begin on a date other than the one contained in the original notice, notice of the new start date must be provided to the Administrator at least 10 working days before excavation begins and in no event shall excavation begin earlier than the date specified in the original notification. Include the following information in the notice:
 - (1) Scheduled starting and completion dates.
 - (2) Reason for disturbing the waste.
 - (3) Procedures to be used to control emissions during the excavation, storage, transport, and ultimate disposal of the excavated asbestos-containing waste material. If deemed necessary, the Administrator may require changes in the emission control procedures to be used.
 - (4) Location of any temporary storage site and the final disposal site.
- (e) Within 60 days of a site becoming inactive and after the effective date of this subpart, record, in accordance with State law, a notation on the deed to the facility property and on any other instrument that would normally be examined during a title search; this notation will in perpetuity notify any potential purchaser of the property that:
 - (1) The land has been used for the disposal of asbestos-containing waste material;
 - (2) The survey plot and record of the location and quantity of asbestos-containing waste disposed of within the disposal site required in § 61.154(f) have been filed with the Administrator; and
 - (3) The site is subject to 40 CFR part 61, subpart M.

[49 FR 13661, Apr. 5, 1984, as amended at 53 FR 36972, Sept. 23, 1988. Redesignated and amended at 55 FR 48429, Nov. 20, 1990]

§ 61.152 Air-cleaning.

- (a) The owner or operator who uses air cleaning, as specified in §§ 61.142(a), 61.144(b)(2), 61.145(c)(3)(i)(B)(1), 61.145(c)(4)(ii), 61.145(c)(11)(i), 61.146(b)(2), 61.147(b)(2), 61.149(b), 61.149(c)(1)(ii), 61.150(a)(1)(ii), 61.150(a)(2)(ii), and 61.155(e) shall:
 - (1) Use fabric filter collection devices, except as noted in paragraph (b) of this section, doing all of the following:
 - (i) Ensuring that the airflow permeability, as determined by ASTM Method D737-75, does not exceed $9 \text{ m}^3/\text{min}/\text{m}^2$ ($30 \text{ ft}^3/\text{min}/\text{ft}^2$) for woven fabrics or $11^3/\text{min}/\text{m}^2$ ($35 \text{ ft}^3/\text{min}/\text{ft}^2$) for felted fabrics, except that $12 \text{ m}^3/\text{min}/\text{m}^2$ ($40 \text{ ft}^3/\text{min}/\text{ft}^2$) for woven and $14 \text{ m}^3/\text{min}/\text{m}^2$ ($45 \text{ ft}^3/\text{min}/\text{ft}^2$) for felted fabrics is allowed for filtering air from asbestos ore dryers; and

- (ii) Ensuring that felted fabric weighs at least 475 grams per square meter (14 ounces per square yard) and is at least 1.6 millimeters (one-sixteenth inch) thick throughout; and
 - (iii) Avoiding the use of synthetic fabrics that contain fill yarn other than that which is spun.
- (2) Properly install, use, operate, and maintain all air-cleaning equipment authorized by this section. Bypass devices may be used only during upset or emergency conditions and then only for so long as it takes to shut down the operation generating the particulate asbestos material.
- (3) For fabric filter collection devices installed after January 10, 1989, provide for easy inspection for faulty bags.
- (b) There are the following exceptions to paragraph (a)(1):
 - (1) After January 10, 1989, if the use of fabric creates a fire or explosion hazard, or the Administrator determines that a fabric filter is not feasible, the Administrator may authorize as a substitute the use of wet collectors designed to operate with a unit contacting energy of at least 9.95 kilopascals (40 inches water gage pressure).
 - (2) Use a HEPA filter that is certified to be at least 99.97 percent efficient for 0.3 micron particles.
 - (3) The Administrator may authorize the use of filtering equipment other than described in paragraphs (a)(1) and (b)(1) and (2) of this section if the owner or operator demonstrates to the Administrator's satisfaction that it is equivalent to the described equipment in filtering particulate asbestos material.

[49 FR 13661, Apr. 5, 1984; 49 FR 25453, June 21, 1984, as amended at 51 FR 8199, Mar. 10, 1986. Redesignated and amended at 55 FR 48430, Nov. 20, 1990]

§ 61.153 Reporting.

- (a) Any new source to which this subpart applies (with the exception of sources subject to §§ 61.143, 61.145, 61.146, and 61.148), which has an initial startup date preceding the effective date of this revision, shall provide the following information to the Administrator postmarked or delivered within 90 days of the effective date. In the case of a new source that does not have an initial startup date preceding the effective date, the information shall be provided, postmarked or delivered, within 90 days of the initial startup date. Any owner or operator of an existing source shall provide the following information to the Administrator within 90 days of the effective date of this subpart unless the owner or operator of the existing source has previously provided this information to the Administrator. Any changes in the information provided by any existing source shall be provided to the Administrator, postmarked or delivered, within 30 days after the change.
 - (1) A description of the emission control equipment used for each process; and
 - (i) If the fabric device uses a woven fabric, the airflow permeability in $\text{m}^3/\text{min}/\text{m}^2$ and; if the fabric is synthetic, whether the fill yarn is spun or not spun; and
 - (ii) If the fabric filter device uses a felted fabric, the density in g/m^2 , the minimum thickness in inches, and the airflow permeability in $\text{m}^3/\text{min}/\text{m}^2$.
 - (2) If a fabric filter device is used to control emissions,
 - (i) The airflow permeability in $\text{m}^3/\text{min}/\text{m}^2$ ($\text{ft}^3/\text{min}/\text{ft}^2$) if the fabric filter device uses a woven fabric, and, if the fabric is synthetic, whether the fill yarn is spun or not spun; and

- (ii) If the fabric filter device uses a felted fabric, the density in g/m^2 (oz/yd^2), the minimum thickness in millimeters (inches), and the airflow permeability in $\text{m}^3/\text{min}/\text{m}^2$ ($\text{ft}^3/\text{min}/\text{ft}^2$).
- (3) If a HEPA filter is used to control emissions, the certified efficiency.
- (4) For sources subject to §§ 61.149 and 61.150:
 - (i) A brief description of each process that generates asbestos-containing waste material; and
 - (ii) The average volume of asbestos-containing waste material disposed of, measured in m^3/day (yd^3/day); and
 - (iii) The emission control methods used in all stages of waste disposal; and
 - (iv) The type of disposal site or incineration site used for ultimate disposal, the name of the site operator, and the name and location of the disposal site.
- (5) For sources subject to §§ 61.151 and 61.154:
 - (i) A brief description of the site; and
 - (ii) The method or methods used to comply with the standard, or alternative procedures to be used.
- (b) The information required by paragraph (a) of this section must accompany the information required by § 61.10. Active waste disposal sites subject to § 61.154 shall also comply with this provision. Roadways, demolition and renovation, spraying, and insulating materials are exempted from the requirements of § 61.10(a). The information described in this section must be reported using the format of appendix A of this part as a guide.

(Sec. 114. Clean Air Act as amended (42 U.S.C. 7414))

[49 FR 13661, Apr. 5, 1984. Redesignated and amended at 55 FR 48430, Nov. 20, 1990; 56 FR 1669, Jan. 16, 1991]

§ 61.154 Standard for active waste disposal sites.

Each owner or operator of an active waste disposal site that receives asbestos-containing waste material from a source covered under § 61.149, 61.150, or 61.155 shall meet the requirements of this section:

- (a) Either there must be no visible emissions to the outside air from any active waste disposal site where asbestos-containing waste material has been deposited, or the requirements of paragraph (c) or (d) of this section must be met.
- (b) Unless a natural barrier adequately deters access by the general public, either warning signs and fencing must be installed and maintained as follows, or the requirements of paragraph (c)(1) of this section must be met.
 - (1) Warning signs must be displayed at all entrances and at intervals of 100 m (330 ft) or less along the property line of the site or along the perimeter of the sections of the site where asbestos-containing waste material is deposited. The warning signs must:
 - (i) Be posted in such a manner and location that a person can easily read the legend; and
 - (ii) Conform to the requirements of 51 cm × 36 cm (20" × 14") upright format signs specified in 29 CFR 1910.145(d)(4) and this paragraph; and

- (iii) Display the following legend in the lower panel with letter sizes and styles of a visibility at least equal to those specified in this paragraph.

Legend	Notation
Asbestos Waste Disposal Site	2.5 cm (1 inch) Sans Serif, Gothic or Block.
Do Not Create Dust	1.9 cm (³ / ₄ inch) Sans Serif, Gothic or Block.
Breathing Asbestos is Hazardous to Your Health	14 Point Gothic.

Spacing between any two lines must be at least equal to the height of the upper of the two lines.

- (2) The perimeter of the disposal site must be fenced in a manner adequate to deter access by the general public.
- (3) Upon request and supply of appropriate information, the Administrator will determine whether a fence or a natural barrier adequately deters access by the general public.
- (c) Rather than meet the no visible emission requirement of paragraph (a) of this section, at the end of each operating day, or at least once every 24-hour period while the site is in continuous operation, the asbestos-containing waste material that has been deposited at the site during the operating day or previous 24-hour period shall:
- (1) Be covered with at least 15 centimeters (6 inches) of compacted nonasbestos-containing material, or
- (2) Be covered with a resinous or petroleum-based dust suppression agent that effectively binds dust and controls wind erosion. Such an agent shall be used in the manner and frequency recommended for the particular dust by the dust suppression agent manufacturer to achieve and maintain dust control. Other equally effective dust suppression agents may be used upon prior approval by the Administrator. For purposes of this paragraph, any used, spent, or other waste oil is not considered a dust suppression agent.
- (d) Rather than meet the no visible emission requirement of paragraph (a) of this section, use an alternative emissions control method that has received prior written approval by the Administrator according to the procedures described in § 61.149(c)(2).
- (e) For all asbestos-containing waste material received, the owner or operator of the active waste disposal site shall:
- (1) Maintain waste shipment records, using a form similar to that shown in Figure 4, and include the following information:
- (i) The name, address, and telephone number of the waste generator.
- (ii) The name, address, and telephone number of the transporter(s).
- (iii) The quantity of the asbestos-containing waste material in cubic meters (cubic yards).

(iv) The presence of improperly enclosed or uncovered waste, or any asbestos-containing waste material not sealed in leak-tight containers. Report in writing to the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the waste generator (identified in the waste shipment record), and, if different, the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the disposal site, by the following working day, the presence of a significant amount of improperly enclosed or uncovered waste. Submit a copy of the waste shipment record along with the report.

(v) The date of the receipt.

(2) As soon as possible and no longer than 30 days after receipt of the waste, send a copy of the signed waste shipment record to the waste generator.

(3) Upon discovering a discrepancy between the quantity of waste designated on the waste shipment records and the quantity actually received, attempt to reconcile the discrepancy with the waste generator. If the discrepancy is not resolved within 15 days after receiving the waste, immediately report in writing to the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the waste generator (identified in the waste shipment record), and, if different, the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the disposal site. Describe the discrepancy and attempts to reconcile it, and submit a copy of the waste shipment record along with the report.

(4) Retain a copy of all records and reports required by this paragraph for at least 2 years.

(f) Maintain, until closure, records of the location, depth and area, and quantity in cubic meters (cubic yards) of asbestos-containing waste material within the disposal site on a map or diagram of the disposal area.

(g) Upon closure, comply with all the provisions of § 61.151.

(h) Submit to the Administrator, upon closure of the facility, a copy of records of asbestos waste disposal locations and quantities.

(i) Furnish upon request, and make available during normal business hours for inspection by the Administrator, all records required under this section.

(j) Notify the Administrator in writing at least 45 days prior to excavating or otherwise disturbing any asbestos-containing waste material that has been deposited at a waste disposal site and is covered. If the excavation will begin on a date other than the one contained in the original notice, notice of the new start date must be provided to the Administrator at least 10 working days before excavation begins and in no event shall excavation begin earlier than the date specified in the original notification. Include the following information in the notice:

(1) Scheduled starting and completion dates.

(2) Reason for disturbing the waste.

(3) Procedures to be used to control emissions during the excavation, storage, transport, and ultimate disposal of the excavated asbestos-containing waste material. If deemed necessary, the Administrator may require changes in the emission control procedures to be used.

(4) Location of any temporary storage site and the final disposal site.

(Secs. 112 and 301(a) of the Clean Air Act as amended (42 U.S.C. 7412, 7601(a))

[49 FR 13661, Apr. 5, 1990. Redesignated and amended at 55 FR 48431, Nov. 20, 1990; 56 FR 1669, Jan. 16, 1991]

§ 61.155 Standard for operations that convert asbestos-containing waste material into nonasbestos (asbestos-free) material.

Each owner or operator of an operation that converts RACM and asbestos-containing waste material into nonasbestos (asbestos-free) material shall:

- (a) Obtain the prior written approval of the Administrator to construct the facility. To obtain approval, the owner or operator shall provide the Administrator with the following information:
 - (1) Application to construct pursuant to § 61.07.
 - (2) In addition to the information requirements of § 61.07(b)(3), a
 - (i) Description of waste feed handling and temporary storage.
 - (ii) Description of process operating conditions.
 - (iii) Description of the handling and temporary storage of the end product.
 - (iv) Description of the protocol to be followed when analyzing output materials by transmission electron microscopy.
 - (3) Performance test protocol, including provisions for obtaining information required under paragraph (b) of this section.
 - (4) The Administrator may require that a demonstration of the process be performed prior to approval of the application to construct.
- (b) Conduct a start-up performance test. Test results shall include:
 - (1) A detailed description of the types and quantities of nonasbestos material, RACM, and asbestos-containing waste material processed, e.g., asbestos cement products, friable asbestos insulation, plaster, wood, plastic, wire, etc. Test feed is to include the full range of materials that will be encountered in actual operation of the process.
 - (2) Results of analyses, using polarized light microscopy, that document the asbestos content of the wastes processed.
 - (3) Results of analyses, using transmission electron microscopy, that document that the output materials are free of asbestos. Samples for analysis are to be collected as 8-hour composite samples (one 200-gram (7-ounce) sample per hour), beginning with the initial introduction of RACM or asbestos-containing waste material and continuing until the end of the performance test.
 - (4) A description of operating parameters, such as temperature and residence time, defining the full range over which the process is expected to operate to produce nonasbestos (asbestos-free) materials. Specify the limits for each operating parameter within which the process will produce nonasbestos (asbestos-free) materials.
 - (5) The length of the test.
- (c) During the initial 90 days of operation,

- (1) Continuously monitor and log the operating parameters identified during start-up performance tests that are intended to ensure the production of nonasbestos (asbestos-free) output material.
 - (2) Monitor input materials to ensure that they are consistent with the test feed materials described during start-up performance tests in paragraph (b)(1) of this section.
 - (3) Collect and analyze samples, taken as 10-day composite samples (one 200-gram (7-ounce) sample collected every 8 hours of operation) of all output material for the presence of asbestos. Composite samples may be for fewer than 10 days. Transmission electron microscopy (TEM) shall be used to analyze the output material for the presence of asbestos. During the initial 90-day period, all output materials must be stored on-site until analysis shows the material to be asbestos-free or disposed of as asbestos-containing waste material according to § 61.150.
- (d) After the initial 90 days of operation,
- (1) Continuously monitor and record the operating parameters identified during start-up performance testing and any subsequent performance testing. Any output produced during a period of deviation from the range of operating conditions established to ensure the production of nonasbestos (asbestos-free) output materials shall be:
 - (i) Disposed of as asbestos-containing waste material according to § 61.150, or
 - (ii) Recycled as waste feed during process operation within the established range of operating conditions, or
 - (iii) Stored temporarily on-site in a leak-tight container until analyzed for asbestos content. Any product material that is not asbestos-free shall be either disposed of as asbestos-containing waste material or recycled as waste feed to the process.
 - (2) Collect and analyze monthly composite samples (one 200-gram (7-ounce) sample collected every 8 hours of operation) of the output material. Transmission electron microscopy shall be used to analyze the output material for the presence of asbestos.
- (e) Discharge no visible emissions to the outside air from any part of the operation, or use the methods specified by § 61.152 to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air.
- (f) Maintain records on-site and include the following information:
- (1) Results of start-up performance testing and all subsequent performance testing, including operating parameters, feed characteristic, and analyses of output materials.
 - (2) Results of the composite analyses required during the initial 90 days of operation under § 61.155(c).
 - (3) Results of the monthly composite analyses required under § 61.155(d).
 - (4) Results of continuous monitoring and logs of process operating parameters required under § 61.155(c) and (d).
 - (5) The information on waste shipments received as required in § 61.154(e).
 - (6) For output materials where no analyses were performed to determine the presence of asbestos, record the name and location of the purchaser or disposal site to which the output materials were sold or deposited, and the date of sale or disposal.
 - (7) Retain records required by paragraph (f) of this section for at least 2 years.

- (g) Submit the following reports to the Administrator:
- (1) A report for each analysis of product composite samples performed during the initial 90 days of operation.

(2) A quarterly report, including the following information concerning activities during each consecutive 3-month period:

(i) Results of analyses of monthly product composite samples.

(ii) A description of any deviation from the operating parameters established during performance testing, the duration of the deviation, and steps taken to correct the deviation.

(iii) Disposition of any product produced during a period of deviation, including whether it was recycled, disposed of as asbestos-containing waste material, or stored temporarily on-site until analyzed for asbestos content.

(iv) The information on waste disposal activities as required in § 61.154(f).

(h) Nonasbestos (asbestos-free) output material is not subject to any of the provisions of this subpart. Output materials in which asbestos is detected, or output materials produced when the operating parameters deviated from those established during the start-up performance testing, unless shown by TEM analysis to be asbestos-free, shall be considered to be asbestos-containing waste and shall be handled and disposed of according to §§ 61.150 and 61.154 or reprocessed while all of the established operating parameters are being met.
- [55 FR 48431, Nov. 20, 1990]
- § 61.156 Cross-reference to other asbestos regulations.
- In addition to this subpart, the regulations referenced in Table 1 also apply to asbestos and may be applicable to those sources specified in §§ 61.142 through 61.151, 61.154, and 61.155 of this subpart. These cross-references are presented for the reader's information and to promote compliance with the cited regulations.
- TABLE 1—CROSS-REFERENCE TO OTHER ASBESTOS REGULATIONS
- | Agency | CFR citation | Comment |
|--------|----------------------------|--|
| EPA | 40 CFR part 763, subpart E | Requires schools to inspect for asbestos and implement response actions and submit asbestos management plans to States. Specifies use of accredited inspectors, air sampling methods, and waste disposal procedures. |
| | 40 CFR part 427 | Effluent standards for asbestos manufacturing source categories. |
| | 40 CFR part 763, subpart G | Protects public employees performing asbestos abatement work in States not covered by OSHA asbestos standard. |
- 40 CFR 61.156 (enhanced display)

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Agency	CFR citation	Comment
OSHA	29 CFR 1910.1001	Worker protection measures-engineering controls, worker training, labeling, respiratory protection, bagging of waste, permissible exposure level.
	29 CFR 1926.1101	Worker protection measures for all construction work involving asbestos, including demolition and renovation-work practices, worker training, bagging of waste, permissible exposure level.
MSHA	30 CFR part 56, subpart D	Specifies exposure limits, engineering controls, and respiratory protection measures for workers in surface mines.
	30 CFR part 57, subpart D	Specifies exposure limits, engineering controls, and respiratory protection measures for workers in underground mines.
DOT	49 CFR parts 171 and 172	Regulates the transportation of asbestos-containing waste material. Requires waste containment and shipping papers.

[55 FR 48432, Nov. 20, 1990, as amended at 60 FR 31920, June 19, 1995; 68 FR 54793, Sept. 18, 2003; 69 FR 43324, July 20, 2004]

§ 61.157 Delegation of authority.

- (a) In delegating implementation and enforcement authority to a State under section 112(d) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.
- (b) Authorities that will not be delegated to States:
 - (1) Section 61.149(c)(2)
 - (2) Section 61.150(a)(4)
 - (3) Section 61.151(c)
 - (4) Section 61.152(b)(3)
 - (5) Section 61.154(d)
 - (6) Section 61.155(a).

[55 FR 48433, Nov. 20, 1990]

Appendix A to Subpart M of Part 61—Interpretive Rule Governing Roof Removal Operations

I. Applicability of the Asbestos NESHAP

1.1. Asbestos-containing material (ACM) is material containing more than one percent asbestos as determined using the methods specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy. The NESHAP classifies ACM as either “friable” or “nonfriable”. Friable ACM is ACM that, when dry, can be crumbled, pulverized or reduced to powder by hand pressure. Nonfriable ACM is ACM that, when dry, cannot be crumbled, pulverized or reduced to powder by hand pressure.

1.2. Nonfriable ACM is further classified as either Category I ACM or Category II ACM. Category I ACM and Category II ACM are distinguished from each other by their potential to release fibers when damaged. Category I ACM includes asbestos-containing gaskets, packings, resilient floor coverings, resilient floor covering mastic, and asphalt roofing products containing more than one percent asbestos. Asphalt roofing products which may contain asbestos include built-up roofing; asphalt-containing single ply membrane systems; asphalt shingles; asphalt-containing underlayment felts; asphalt-containing roof coatings and mastics; and asphalt-containing base flashings. ACM roofing products that use other bituminous or resinous binders (such as coal tars or pitches) are also considered to be Category I ACM. Category II ACM includes all other nonfriable ACM, for example, asbestos-cement (A/C) shingles, A/C tiles, and transite boards or panels containing more than one percent asbestos. Generally speaking, Category II ACM is more likely to become friable when damaged than is Category I ACM. The applicability of the NESHAP to Category I and II ACM depends on: (1) the condition of the material at the time of demolition or renovation, (2) the nature of the operation to which the material will be subjected, (3) the amount of ACM involved.

1.3. Asbestos-containing material regulated under the NESHAP is referred to as “regulated asbestos-containing material” (RACM). RACM is defined in § 61.141 of the NESHAP and includes: (1) friable asbestos-containing material; (2) Category I nonfriable ACM that has become friable; (3) Category I nonfriable ACM that has been or will be sanded, ground, cut, or abraded; or (4) Category II nonfriable ACM that has already been or is likely to become crumbled, pulverized, or reduced to powder. If the coverage threshold for RACM is met or exceeded in a renovation or demolition operation, then all friable ACM in the operation, and in certain situations, nonfriable ACM in the operation, are subject to the NESHAP.

A. Threshold Amounts of Asbestos-Containing Roofing Material

1. A.1. The NESHAP does not cover roofing projects on single family homes or on residential buildings containing four or fewer dwelling units. 40 CFR 61.141. For other roofing renovation projects, if the total asbestos-containing roof area undergoing renovation is less than 160 ft², the NESHAP does not apply, regardless of the removal method to be used, the type of material (Category I or II), or its condition (friable versus nonfriable). 40 CFR 61.145(a)(4). However, EPA would recommend the use of methods that damage asbestos-containing roofing material as little as possible. EPA has determined that where a rotating blade (RB) roof cutter or equipment that similarly damages the roofing material is used to remove Category I nonfriable asbestos-containing roofing material, the removal of 5580 ft² of that material will create 160 ft² of RACM. For the purposes of this interpretive rule, “RB roof cutter” means an engine-powered roof cutting machine with one or more rotating cutting blades the edges of which are blunt. (Equipment with blades having sharp or tapered edges, and/or which does not use a rotating blade, is used for “slicing” rather than “cutting” the roofing material; such equipment is not included in the term “RB roof cutter”.) Therefore, it is EPA’s interpretation that when an RB roof cutter or equipment that similarly damages the roofing material is used to remove Category I nonfriable asbestos-containing roofing material, any project that is 5580 ft² or greater is subject to the NESHAP; conversely, it is EPA’s interpretation that when an RB roof cutter or

equipment that similarly damages the roofing material is used to remove Category I nonfriable asbestos-containing roofing material in a roof removal project that is less than 5580 ft², the project is not subject to the NESHAP, except that notification is always required for demolitions. EPA further construes the NESHAP to mean that if slicing or other methods that do not sand, grind, cut or abrade will be used on Category I nonfriable ACM, the NESHAP does not apply, regardless of the area of roof to be removed.

1.A.2. For asbestos cement (A/C) shingles (or other Category II roofing material), if the area of the roofing material to be removed is at least 160 ft² and the removal methods will crumble, pulverize, reduce to powder, or contaminate with RACM (from other ACM that has been crumbled, pulverized or reduced to powder) 160 ft² or more of such roofing material, the removal is subject to the NESHAP. Conversely, if the area of the A/C shingles (or other Category II roofing materials) to be removed is less than 160 ft², the removal is not subject to the NESHAP regardless of the removal method used, except that notification is always required for demolitions. 40 CFR 61.145(a). However, EPA would recommend the use of methods that damage asbestos-containing roofing material as little as possible. If A/C shingles (or other Category II roofing materials) are removed without 160 ft² or more of such roofing material being crumbled, pulverized, reduced to powder, or contaminated with RACM (from other ACM that has been crumbled, pulverized or reduced to powder), the operation is not subject to the NESHAP, even where the total area of the roofing material to be removed exceeds 160 ft²; provided, however, that if the renovation includes other operations involving RACM, the roof removal operation is covered if the total area of RACM from all renovation activities exceeds 160 ft². See the definition of regulated asbestos-containing material (RACM), 40 CFR 61.141.

1.A.3. Only roofing material that meets the definition of ACM can qualify as RACM subject to the NESHAP. Therefore, to determine if a removal operation that meets or exceeds the coverage threshold is subject to the NESHAP, any suspect roofing material (*i.e.* roofing material that may be ACM) should be tested for asbestos. If any such roofing material contains more than one percent asbestos and if the removal operation is covered by the NESHAP, then EPA must be notified and the work practices in § 61.145(c) must be followed. In EPA's view, if a removal operation involves at least the threshold level of suspect material, a roofing contractor may choose not to test for asbestos if the contractor follows the notification and work practice requirements of the NESHAP.

B. A/C Shingle Removal (Category II ACM Removal)

1.B.1. A/C shingles, which are Category II nonfriable ACM, become regulated ACM if the material has a high probability of becoming or has become crumbled, pulverized or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations. 40 CFR 61.141. However, merely breaking an A/C shingle (or any other category II ACM) that is not friable may not necessarily cause the material to become RACM. A/C shingles are typically nailed to buildings on which they are attached. EPA believes that the extent of breakage that will normally result from carefully removing A/C shingles and lowering the shingles to the ground will not result in crumbling, pulverizing or reducing the shingles to powder. Conversely, the extent of breakage that will normally occur if the A/C shingles are dropped from a building or scraped off of a building with heavy machinery would cause the shingles to become RACM. EPA therefore construes the NESHAP to mean that the removal of A/C shingles that are not friable, using methods that do not crumble, pulverize, or reduce the

A/C shingles to powder (such as pry bars, spud bars and shovels to carefully pry the material), is not subject to the NESHAP provided that the A/C shingles are properly handled during and after removal, as discussed in this paragraph and the asbestos NESHAP. This interpretation also applies to other Category II nonfriable asbestos-containing roofing materials.

C. Cutting vs. Slicing and Manual Methods for Removal of Category I ACM

1.C.1. Because of damage to the roofing material, and the potential for fiber release, roof removal operations using rotating blade (RB) roof cutters or other equipment that sand, grind, cut or abrade the roof material are subject to the NESHAP. As EPA interprets the NESHAP, the use of certain manual methods (using equipment such as axes, hatchets, or knives, spud bars, pry bars, and shovels, but not saws) or methods that slice, shear, or punch (using equipment such as a power slicer or power plow) does not constitute "cutting, sanding, grinding or abrading." This is because these methods do not destroy the structural matrix or integrity of the material such that the material is crumbled, pulverized or reduced to powder. Hence, it is EPA's interpretation that when such methods are used, assuming the roof material is not friable, the removal operation is not subject to the regulation.

1.C.2. Power removers or power tear-off machines are typically used to pry the roofing material up from the deck after the roof membrane has been cut. It is EPA's interpretation that when these machines are used to pry roofing material up, their use is not regulated by the NESHAP.

1.C.3. As noted previously, the NESHAP only applies to the removal of asbestos-containing roofing materials. Thus, the NESHAP does not apply to the use of RB cutters to remove non-asbestos built up roofing (BUR). On roofs containing some asbestos-containing and some non-asbestos-containing materials, coverage under the NESHAP depends on the methods used to remove each type of material in addition to other coverage thresholds specified above. For example, it is not uncommon for existing roofs to be made of non-asbestos BUR and base flashings that do contain asbestos. In that situation, EPA construes the NESHAP to be inapplicable to the removal of the non-asbestos BUR using an RB cutter so long as the RB cutter is not used to cut 5580 ft² or more of the asbestos-containing base flashing or other asbestos-containing material into sections. In addition, the use of methods that slice, shear, punch or pry could then be used to remove the asbestos flashings and not trigger coverage under the NESHAP.

II. Notification

2.1. Notification for a demolition is always required under the NESHAP. However, EPA believes that few roof removal jobs constitute "demolitions" as defined in the NESHAP (§ 61.141). In particular, it is EPA's view that the removal of roofing systems (i.e., the roof membrane, insulation, surfacing, coatings, flashings, mastic, shingles, and felt underlayment), when such removal is not a part of a demolition project, constitutes a "renovation" under the NESHAP. If the operation is a renovation, and Category I roofing material is being removed using either manual methods or slicing, notification is not required by the NESHAP. If Category II material is not friable and will be removed without crumbling, pulverizing, or reducing it to powder, no notification is required. Also, if the renovation involves less than the threshold area for

applicability as discussed above, then no notification is required. However, if a roof removal meets the applicability and threshold requirements under the NESHAP, then EPA (or the delegated agency) must be notified in advance of the removal in accordance with the requirements of § 61.145(b), as follows:

- Notification must be given in writing at least 10 working days in advance and must include the information in § 61.145(b)(4), except for emergency renovations as discussed below.
- The notice must be updated as necessary, including, for example, when the amount of asbestos-containing roofing material reported changes by 20 percent or more.
- EPA must be notified if the start date of the roof removal changes. If the start date of a roof removal project is changed to an earlier date, EPA must be provided with a written notice of the new start date at least 10 working days in advance. If the start date changes to a later date, EPA must be notified by telephone as soon as possible before the original start date and a written notice must be sent as soon as possible.
- For emergency renovations (as defined in § 61.141), where work must begin immediately to avoid safety or public health hazards, equipment damage, or unreasonable financial burden, the notification must be postmarked or delivered to EPA as soon as possible, but no later than the following work day.

III. Emission Control Practices

A. Requirements To Adequately Wet and Discharge No Visible Emission

3.A.1. The principal controls contained in the NESHAP for removal operations include requirements that the affected material be adequately wetted, and that asbestos waste be handled, collected, and disposed of properly. The requirements for disposal of waste materials are discussed separately in section IV below. The emission control requirements discussed in this section III apply only to roof removal operations that are covered by the NESHAP as set forth in Section I above.

3. A.2. For any operation subject to the NESHAP, the regulation (§§ 61.145(c)(2)(i), (3), (6)(i)) requires that RACM be adequately wet (as defined in § 61.141) during the operation that damages or disturbs the asbestos material until collected for disposal.

3.A.3. When using an RB roof cutter (or any other method that sands, grinds, cuts or abrades the roofing material) to remove Category I asbestos-containing roofing material, the emission control requirements of § 61.145(c) apply as discussed in Section I above. EPA will consider a roof removal project to be in compliance with the “adequately wet” and “discharge no visible emission” requirements of the NESHAP if the RB roof cutter is equipped and operated with the following: (1) a blade guard that completely encloses the blade and extends down close to the roof surface; and (2) a device for spraying a fine mist of water inside the blade guard, and which device is in operation during the cutting of the roof.

B. Exemptions From Wetting Requirements

3. B.1. The NESHAP provides that, in certain instances, wetting may not be required during the cutting of Category I asbestos roofing material with an RB roof cutter. If EPA determines in accordance with § 61.145(c)(3)(i), that wetting will unavoidably damage the building, equipment inside the building, or will present a safety hazard while stripping the ACM from a facility component that remains in place, the roof removal operation will be exempted from the requirement to wet during cutting. EPA must have sufficient written information on which to base such a decision. Before proceeding with a dry removal, the contractor must have received EPA's written approval. Such exemptions will be made on a case-by-case basis.
3. B.2. It is EPA's view that, in most instances, exemptions from the wetting requirements are not necessary. Where EPA grants an exemption from wetting because of the potential for damage to the building, damage to equipment within the building or a safety hazard, the NESHAP specifies alternative control methods (§ 61.145(c)(3)(i)(B)). Alternative control methods include (a) the use of local exhaust ventilation systems that capture the dust, and do not produce visible emissions, or (b) methods that are designed and operated in accordance with the requirements of § 61.152, or (c) other methods that have received the written approval of EPA. EPA will consider an alternative emission control method in compliance with the NESHAP if the method has received written approval from EPA and the method is being implemented consistent with the approved procedures (§ 61.145(c)(3)(ii) or § 61.152(b)(3)).
3. B.3. An exemption from wetting is also allowed when the air or roof surface temperature at the point of wetting is below freezing, as specified in § 61.145(c)(7). If freezing temperatures are indicated as the reason for not wetting, records must be kept of the temperature at the beginning, middle and end of the day on which wetting is not performed and the records of temperature must be retained for at least 2 years. 42 CFR § 61.145(c)(7)(iii). It is EPA's interpretation that in such cases, no written application to, or written approval by the Administrator is needed for using emission control methods listed in § 61.145(c)(3)(i)(B), or alternative emission control methods that have been previously approved by the Administrator. However, such written application or approval is required for alternative emission control methods that have not been previously approved. Any dust and debris collected from cutting must still be kept wet and placed in containers. All of the other requirements for notification and waste disposal would continue to apply as described elsewhere in this notice and the Asbestos NESHAP.

C. Waste Collection and Handling

3. C.1. It is EPA's interpretation that waste resulting from slicing and other methods that do not cut, grind, sand or abrade Category I nonfriable asbestos-containing roofing material is not subject to the NESHAP and can be disposed of as nonasbestos waste. EPA further construes the NESHAP to provide that if Category II roofing material (such as A/C shingles) is removed and disposed of without crumbling, pulverizing, or reducing it to powder, the waste from the removal is not subject to the NESHAP waste disposal requirements. EPA also interprets the NESHAP to be inapplicable to waste resulting from roof removal operations that do not meet or exceed the coverage thresholds described in section I above. Of course, other State, local, or Federal regulations may apply.
3. C.2. It is EPA's interpretation that when an RB roof cutter, or other method that similarly damages the roofing material, is used to cut Category I asbestos containing roofing material, the damaged material from the cut (the sawdust or debris) is considered asbestos containing

waste subject to § 61.150 of the NESHAP, provided the coverage thresholds discussed above in section 1 are met or exceeded. This sawdust or debris must be disposed of at a disposal site operated in accordance with the NESHAP. It is also EPA's interpretation of the NESHAP that if the remainder of the roof is free of the sawdust and debris generated by the cutting, or if such sawdust or debris is collected as discussed below in paragraphs 3.C.3, 3.C.4, 3.C.5 and 3.C.6, the remainder of the roof can be disposed of as nonasbestos waste because it is considered to be Category I nonfriable material (as long as the remainder of the roof is in fact nonasbestos material or if it is Category I asbestos material and the removal methods do not further sand, grind, cut or abrade the roof material). EPA further believes that if the roof is not cleaned of such sawdust or debris, *i.e.*, it is contaminated, then it must be treated as asbestos-containing waste material and be handled in accordance with § 61.150.

3. C.3. In order to be in compliance with the NESHAP while using an RB roof cutter (or device that similarly damages the roofing material) to cut Category I asbestos containing roofing material, the dust and debris resulting from the cutting of the roof should be collected as soon as possible after the cutting operation, and kept wet until collected and placed in leak-tight containers. EPA believes that where the blade guard completely encloses the blade and extends down close to the roof surface and is equipped with a device for spraying a fine mist of water inside the blade guard, and the spraying device is in operation during the cutting, most of the dust and debris from cutting will be confined along the cut. The most efficient methods to collect the dust and debris from cutting are to immediately collect or vacuum up the damaged material where it lies along the cut using a filtered vacuum cleaner or debris collector that meets the requirements of 40 CFR 61.152 to clean up as much of the debris as possible, or to gently sweep up the bulk of the debris, and then use a filtered vacuum cleaner that meets the requirements of 40 CFR 61.152 to clean up as much of the remainder of the debris as possible. On smooth surfaced roofs (nonaggregate roofs), sweeping up the debris and then wet wiping the surface may be done in place of using a filtered vacuum cleaner. It is EPA's view that if these decontamination procedures are followed, the remaining roofing material does not have to be collected and disposed of as asbestos waste. Additionally, it is EPA's view that where such decontamination procedures are followed, if the remaining portions of the roof are non-asbestos or Category I nonfriable asbestos material, and if the remaining portions are removed using removal methods that slice, shear, punch or pry, as discussed in section 1.C above, then the remaining portions do not have to be collected and disposed of as asbestos waste and the NESHAP's no visible emissions and adequately wet requirements are not applicable to the removal of the remaining portions. In EPA's interpretation, the failure of a filtered vacuum cleaner or debris collector to collect larger chunks or pieces of damaged roofing material created by the RB roof cutter does not require the remaining roofing material to be handled and disposed of as asbestos waste, provided that such visible chunks or pieces of roofing material are collected (e.g. by gentle sweeping) and disposed of as asbestos waste. Other methods of decontamination may not be adequate, and should be approved by the local delegated agency.
3. C.4. In EPA's interpretation, if the debris from the cutting is not collected immediately, it will be necessary to lightly mist the dust or debris, until it is collected, as discussed above, and placed in containers. The dust or debris should be lightly misted frequently enough to prevent the material from drying, and to prevent airborne emissions, prior to collection as described above. It is EPA's interpretation of the NESHAP that if these procedures are followed, the remaining roofing material does not have to be collected and disposed of as asbestos waste, as long as the remaining roof material is in fact nonasbestos material or if it is Category I asbestos material and the removal methods do not further sand, grind, cut or abrade the roof material.

3. C.

5. It is EPA's interpretation that, provided the roofing material is not friable prior to the cutting operation, and provided the roofing material has not been made friable by the cutting operation, the appearance of rough, jagged or damaged edges on the remaining roofing material, due to the use of an RB roof cutter, does not require that such remaining roofing material be handled and disposed of as asbestos waste. In addition, it is also EPA's interpretation that if the sawdust or debris generated by the use of an RB roof cutter has been collected as discussed in paragraphs 3.C.3, 3.C.4 and 3.C.6, the presence of dust along the edge of the remaining roof material does not render such material "friable" for purposes of this interpretive rule or the NESHAP, provided the roofing material is not friable prior to the cutting operation, and provided that the remaining roofing material near the cutline has not been made friable by the cutting operation. Where roofing material near the cutline has been made friable by the use of the RB cutter (*i.e.* where such remaining roofing material near the cutline can be crumbled, pulverized or reduced to powder using hand pressure), it is EPA's interpretation that the use of an encapsulant will ensure that such friable material need not be treated or disposed of as asbestos containing waste material. The encapsulant may be applied to the friable material after the roofing material has been collected into stacks for subsequent disposal as nonasbestos waste. It is EPA's view that if the encapsulation procedure set forth in this paragraph is followed in operations where roofing material near the cutline has been rendered friable by the use of an RB roof cutter, and if the decontamination procedures set forth in paragraph 3.C.3 have been followed, the NESHAP's no visible emissions and adequately wet requirements would be met for the removal, handling and disposal of the remaining roofing material.

3.C.6. As one way to comply with the NESHAP, the dust and debris from cutting can be placed in leak-tight containers, such as plastic bags, and the containers labeled using warning labels required by OSHA (29 CFR 1926.58). In addition, the containers must have labels that identify the waste generator (such as the name of the roofing contractor, abatement contractor, and/or building owner or operator) and the location of the site at which the waste was generated.

IV. Waste Disposal

A. Disposal Requirements

4.A.1. Section 61.150(b) requires that, as soon as is practical, all collected dust and debris from cutting as well as any contaminated roofing squares, must be taken to a landfill that is operated in accordance with § 61.154 or to an EPA-approved site that converts asbestos waste to nonasbestos material in accordance with § 61.155. During the loading and unloading of affected waste, asbestos warning signs must be affixed to the vehicles.

B. Waste Shipment Record

4.B.1. For each load of asbestos waste that is regulated under the NESHAP, a waste shipment record (WSR) must be maintained in accordance with § 61.150(d). Information that must be maintained for each waste load includes the following:

- Name, address, and telephone number of the waste generator
- Name and address of the local, State, or EPA regional office responsible for administering the asbestos NESHAP program
- Quantity of waste in cubic meters (or cubic yards)
- Name and telephone number of the disposal site operator
- Name and physical site location of the disposal site
- Date transported
- Name, address, and telephone number of the transporter(s)
- Certification that the contents meet all government regulations for transport by highways.

4.B.2. The waste generator is responsible for ensuring that a copy of the WSR is delivered to the disposal site along with the waste shipment. If a copy of the WSR signed by the disposal site operator is not returned to the waste generator within 35 days, the waste generator must contact the transporter and/or the disposal site to determine the status of the waste shipment. 40 CFR 61.150(d)(3). If the signed WSR is not received within 45 days, the waste generator must report, in writing, to the responsible NESHAP program agency and send along a copy of the WSR. 40 CFR 61.150(d)(4). Copies of WSRs, including those signed by the disposal site operator, must be retained for at least 2 years. 40 CFR 61.150(d)(5).

V. Training

- 5.1. For those roof removals that are subject to the NESHAP, at least one on-site supervisor trained in the provisions of the NESHAP must be present during the removal of the asbestos roofing material. 40 CFR 61.145(c)(8). In EPA's view, this person can be a job foreman, a hired consultant, or someone who can represent the building owner or contractor responsible for the removal. In addition to the initial training requirement, a refresher training course is required every 2 years. The NESHAP training requirements became effective on November 20, 1991.
- 5.2. Asbestos training courses developed specifically to address compliance with the NESHAP in roofing work, as well as courses developed for other purposes can satisfy this requirement of the NESHAP, as long as the course covers the areas specified in the regulation. EPA believes that Asbestos Hazard Emergency Response Act (AHERA) training courses will, for example, satisfy the NESHAP training requirements. However, nothing in this interpretive rule or in the NESHAP shall be deemed to require that roofing contractors or roofing workers performing operations covered by the NESHAP must be trained or accredited under AHERA, as amended by the Asbestos School Hazard Abatement Reauthorization Act (ASHARA). Likewise, state or local authorities may independently impose additional training, licensing, or accreditation requirements on roofing contractors performing operations covered by the NESHAP, but such additional training, licensing or accreditation is not called for by this interpretive rule or the federal NESHAP.
- 5.3. For removal of Category I asbestos containing roofing material where RB roof cutters or equipment that similarly damages the asbestos-containing roofing material are used, the NESHAP training requirements (§ 61.145(c)(8)) apply as discussed in Section I above. It is

EPA's intention that removal of Category I asbestos-containing roofing material using hatchets, axes, knives, and/or the use of spud bars, pry bars and shovels to lift the roofing material, or similar removal methods that slice, punch, or shear the roof membrane are not subject to the training requirements, since these methods do not cause the roof removal to be subject to the NESHAP. Likewise, it is EPA's intention that roof removal operations involving Category II nonfriable ACM are not subject to the training requirements where such operations are not subject to the NESHAP as discussed in section I above.

[59 FR 31158, June 17, 1994, as amended at 60 FR 31920, June 19, 1995]

This content is from the eCFR and is authoritative but unofficial.

Title 40 —Protection of Environment

Chapter I —Environmental Protection Agency

Subchapter C —Air Programs

Part 61 —National Emission Standards for Hazardous Air Pollutants

Authority: 42 U.S.C. 7401 *et seq.*

Source: 38 FR 8826, Apr. 6, 1973, unless otherwise noted.

Subpart V National Emission Standard for Equipment Leaks (Fugitive Emission Sources)

- § 61.240 Applicability and designation of sources.
- § 61.241 Definitions.
- § 61.242-1 Standards: General.
- § 61.242-2 Standards: Pumps.
- § 61.242-3 Standards: Compressors.
- § 61.242-4 Standards: Pressure relief devices in gas/vapor service.
- § 61.242-5 Standards: Sampling connecting systems.
- § 61.242-6 Standards: Open-ended valves or lines.
- § 61.242-7 Standards: Valves.
- § 61.242-8 Standards: Pressure relief services in liquid service and connectors.
- § 61.242-9 Standards: Surge control vessels and bottoms receivers.
- § 61.242-10 Standards: Delay of repair.
- § 61.242-11 Standards: Closed-vent systems and control devices.
- § 61.243-1 Alternative standards for valves in VHAP service—allowable percentage of valves leaking.
- § 61.243-2 Alternative standards for valves in VHAP service—skip period leak detection and repair.
- § 61.244 Alternative means of emission limitation.
- § 61.245 Test methods and procedures.
- § 61.246 Recordkeeping requirements.
- § 61.247 Reporting requirements.

Table 1 to Subpart V of Part 61

Surge Control Vessels and Bottoms Receivers at Existing
Sources

Table 2 to Subpart V of Part 61

Surge Control Vessels and Bottoms Receivers at New Sources

Subpart V—National Emission Standard for Equipment Leaks (Fugitive Emission Sources)

Source: 49 FR 23513, June 6, 1984, unless otherwise noted.

§ 61.240 Applicability and designation of sources.

- (a) The provisions of this subpart apply to each of the following sources that are intended to operate in volatile hazardous air pollutant (VHAP) service: pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, surge control vessels, bottoms receivers, and control devices or systems required by this subpart.
- (b) The provisions of this subpart apply to the sources listed in paragraph (a) after the date of promulgation of a specific subpart in part 61.
- (c) While the provisions of this subpart are effective, a source to which this subpart applies that is also subject to the provisions of 40 CFR part 60 only will be required to comply with the provisions of this subpart.
- (d) *Alternative means of compliance* —
 - (1) *Option to comply with part 65.* Owners or operators may choose to comply with 40 CFR part 65 to satisfy the requirements of §§ 61.242-1 through 61.247 for equipment that is subject to this subpart and that is part of the same process unit. When choosing to comply with 40 CFR part 65, the requirements of §§ 61.245(d) and 61.246(i) and (j) still apply. Other provisions applying to owners or operators who choose to comply with 40 CFR part 65 are provided in 40 CFR 65.1.
 - (2) *Part 65, subpart C or F.* For owners or operators choosing to comply with 40 CFR part 65, each surge control vessel and bottoms receiver subject to this subpart that meets the conditions specified in table 1 or table 2 of this subpart shall meet the requirements for storage vessels in 40 CFR part 65, subpart C; all other equipment subject to this subpart shall meet the requirements in 40 CFR part 65, subpart F.
 - (3) *Part 61, subpart A.* Owners or operators who choose to comply with 40 CFR part 65, subpart C or F, must also comply with §§ 61.01, 61.02, 61.05 through 61.08, 61.10(b) through (d), 61.11, and 61.15 for that equipment. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (d)(3) do not apply to owners or operators of equipment subject to this subpart complying with 40 CFR part 65, subpart C or F, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart C or F, must comply with 40 CFR part 65, subpart A.
 - (4) *Rules referencing this subpart.* Owners or operators referenced to this subpart from subpart F or J of this part may choose to comply with 40 CFR part 65 for all equipment listed in paragraph (a) of this section.

[49 FR 23513, June 6, 1984, as amended at 65 FR 78280, Dec. 14, 2000]

§ 61.241 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act, in subpart A of part 61, or in specific subparts of part 61; and the following terms shall have specific meaning given them:

Bottoms receiver means a tank that collects distillation bottoms before the stream is sent for storage or for further downstream processing.

Closed-vent system means a system that is not open to atmosphere and that is composed of hard-piping, ductwork, connections, and, if necessary, flow-inducing devices that transport gas or vapor from a piece or pieces of equipment to a control device or back to a process.

Connector means flanged, screwed, welded, or other joined fittings used to connect two pipe lines or a pipe line and a piece of equipment. For the purpose of reporting and recordkeeping, connector means flanged fittings that are not covered by insulation or other materials that prevent location of the fittings.

Control device means an enclosed combustion device, vapor recovery system, or flare.

Double block and bleed system means two block valves connected in series with a bleed valve or line that can vent the line between the two block valves.

Duct work means a conveyance system such as those commonly used for heating and ventilation systems. It is often made of sheet metal and often has sections connected by screws or crimping. Hard-piping is not ductwork.

Equipment means each pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, valve, connector, surge control vessel, bottoms receiver in VHAP service, and any control devices or systems required by this subpart.

First attempt at repair means to take rapid action for the purpose of stopping or reducing leakage of organic material to atmosphere using best practices.

In gas/vapor service means that a piece of equipment contains process fluid that is in the gaseous state at operating conditions.

Fuel gas means gases that are combusted to derive useful work or heat.

Fuel gas system means the offsite and onsite piping and flow and pressure control system that gathers gaseous stream(s) generated by onsite operations, may blend them with other sources of gas, and transports the gaseous stream for use as fuel gas in combustion devices or in-process combustion equipment, such as furnaces and gas turbines, either singly or in combination.

Hard-piping means pipe or tubing that is manufactured and properly installed using good engineering judgement and standards such as ASME B31.3, Process Piping (available from the American Society of Mechanical Engineers, PO Box 2900, Fairfield, NJ 07007-2900).

In liquid service means that a piece of equipment is not in gas/vapor service.

In-situ sampling systems means nonextractive samplers or in-line samplers.

In vacuum service means that equipment is operating at an internal pressure which is at least 5 kilopascals (kPa) (0.7 psia) below ambient pressure.

In VHAP service means that a piece of equipment either contains or contacts a fluid (liquid or gas) that is at least 10 percent by weight a volatile hazardous air pollutant (VHAP) as determined according to the provisions of § 61.245(d). The provisions of § 61.245(d) also specify how to determine that a piece of equipment is not in VHAP service.

In VOC service means, for the purposes of this subpart, that (a) the piece of equipment contains or contacts a process fluid that is at least 10 percent VOC by weight (see 40 CFR 60.2 for the definition of volatile organic compound or VOC and 40 CFR 60.485(d) to determine whether a piece of equipment is not in VOC service) and (b) the piece of equipment is not in heavy liquid service as defined in 40 CFR 60.481.

Maximum true vapor pressure means the equilibrium partial pressure exerted by the total VHAP in the stored or transferred liquid at the temperature equal to the highest calendar-month average of the liquid storage or transfer temperature for liquids stored or transferred above or below the ambient temperature or at the local maximum monthly average temperature as reported by the National Weather Service for liquids stored or transferred at the ambient temperature, as determined:

- (1) In accordance with methods described in American Petroleum Institute Publication 2517, Evaporative Loss From External Floating-Roof Tanks (incorporated by reference as specified in § 61.18); or
- (2) As obtained from standard reference texts; or
- (3) As determined by the American Society for Testing and Materials Method D2879-83, Standard Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope (incorporated by reference as specified in § 61.18); or
- (4) Any other method approved by the Administrator.

Open-ended valve or line means any valve, except pressure relief valves, having one side of the valve seat in contact with process fluid and one side open to atmosphere, either directly or through open piping.

Pressure release means the emission of materials resulting from the system pressure being greater than the set pressure of the pressure relief device.

Process unit means equipment assembled to produce a VHAP or its derivatives as intermediates or final products, or equipment assembled to use a VHAP in the production of a product. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient product storage facilities.

Process unit shutdown means a work practice or operational procedure that stops production from a process unit or part of a process unit. An unscheduled work practice or operational procedure that stops production from a process unit or part of a process unit for less than 24 hours is not a process unit shutdown. The use of spare equipment and technically feasible bypassing of equipment without stopping production are not process unit shutdowns.

Repaired means that equipment is adjusted, or otherwise altered, to eliminate a leak.

Sampling connection system means an assembly of equipment within a process unit used during periods of representative operation to take samples of the process fluid. Equipment used to take non-routine grab samples is not considered a sampling connection system.

Semiannual means a 6-month period; the first semiannual period concludes on the last day of the last month during the 180 days following initial startup for new sources; and the first semiannual period concludes on the last day of the last full month during the 180 days after the effective date of a specific subpart that references this subpart for existing sources.

Sensor means a device that measures a physical quantity or the change in a physical quantity, such as temperature, pressure, flow rate, pH, or liquid level.

Stuffing box pressure means the fluid (liquid or gas) pressure inside the casing or housing of a piece of equipment, on the process side of the inboard seal.

Surge control vessel means feed drums, recycle drums, and intermediate vessels. Surge control vessels are used within a process unit when in-process storage, mixing, or management of flow rates of volumes is needed on a recurring or ongoing basis to assist in production of a product.

Volatile hazardous air pollutant or VHAP means a substance regulated under this part for which a standard for equipment leaks of the substance has been proposed and promulgated. Benzene is a VHAP. Vinyl chloride is a VHAP.

[49 FR 23513, June 6, 1984; 49 FR 38946, Oct. 2, 1984, as amended at 51 FR 34915, Sept. 30, 1986; 54 FR 38076, Sept. 14, 1989; 65 FR 62158, Oct. 17, 2000; 65 FR 78280, Dec. 14, 2000]

§ 61.242-1 Standards: General.

- (a) Each owner or operator subject to the provisions of this subpart shall demonstrate compliance with the requirements of §§ 61.242-1 to 61.242-11 for each new and existing source as required in 40 CFR 61.05, except as provided in §§ 61.243 and 61.244.
- (b) Compliance with this subpart will be determined by review of records, review of performance test results, and inspection using the methods and procedures specified in § 61.245.
- (c)
 - (1) An owner or operator may request a determination of alternative means of emission limitation to the requirements of §§ 61.242-2, 61.242-3, 61.242-5, 61.242-6, 61.242-7, 61.242-8, 61.242-9 and 61.242-11 as provided in § 61.244.
 - (2) If the Administrator makes a determination that a means of emission limitation is at least a permissible alternative to the requirements of § 61.242-2, 61.242-3, 61.242-5, 61.242-6, 61.242-7, 61.242-8, 61.242-9 or 61.242-11, an owner or operator shall comply with the requirements of that determination.
- (d) Each piece of equipment to which this subpart applies shall be marked in such a manner that it can be distinguished readily from other pieces of equipment.
- (e) Equipment that is in vacuum service is excluded from the requirements of § 61.242-2, to § 61.242-11 if it is identified as required in § 61.246(e)(5).

[49 FR 23513, June 6, 1984; 49 FR 38946, Oct. 2, 1984]

§ 61.242-2 Standards: Pumps.

- (a)
 - (1) Each pump shall be monitored monthly to detect leaks by the methods specified in § 61.245(b), except as provided in § 61.242-1(c) and paragraphs (d), (e), (f) and (g) of this section.
 - (2) Each pump shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal.

(b)

- (1) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.
- (2) If there are indications of liquids dripping from the pump seal, a leak is detected.

(c)

- (1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in § 61.242-10.

- (2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(d) Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of paragraphs (a) and (b) of this section, provided the following requirements are met:

- (1) Each dual mechanical seal system is:

- (i) Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure; or
- (ii) Equipped with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed-vent system to a control device that complies with the requirements of § 61.242-11; or
- (iii) Equipped with a system that purges the barrier fluid into a process stream with zero VHAP emissions to atmosphere.

- (2) The barrier fluid is not in VHAP service and, if the pump is covered by standards under 40 CFR part 60, is not in VOC service.

- (3) Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.

- (4) Each pump is checked by visual inspection each calendar week for indications of liquids dripping from the pump seal.

- (i) If there are indications of liquid dripping from the pump seal at the time of the weekly inspection, the pump shall be monitored as specified in § 61.245 to determine the presence of VOC and VHAP in the barrier fluid.
- (ii) If the monitor reading (taking into account any background readings) indicates the presence of VHAP, a leak is detected. For the purpose of this paragraph, the monitor may be calibrated with VHAP, or may employ a gas chromatography column to limit the response of the monitor to VHAP, at the option of the owner or operator.

- (iii) If an instrument reading of 10,000 ppm or greater (total VOC) is measured, a leak is detected.

- (5) Each sensor as described in paragraph (d)(3) of this section is checked daily or is equipped with an audible alarm.

(6)

- (i) The owner or operator determines, based on design considerations and operating experience, criteria applicable to the presence and frequency of drips and to the sensor that indicates failure of the seal system, the barrier fluid system, or both.

- (ii) If indications of liquids dripping from the pump seal exceed the criteria established in paragraph (d)(6)(i) of this section, or if, based on the criteria established in paragraph (d)(6)(i) of this section, the sensor indicates failure of the seal system, the barrier fluid system, or both, a leak is detected.
 - (iii) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after it is detected, except as provided in § 61.242-10.
 - (iv) A first attempt at repair shall be made no later than five calendar days after each leak is detected.
- (e) Any pump that is designated, as described in § 61.246(e)(2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraphs (a), (c), and (d) if the pump:
- (1) Has no externally actuated shaft penetrating the pump housing,
 - (2) Is demonstrated to be operating with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the method specified in § 61.245(c), and
 - (3) Is tested for compliance with paragraph (e)(2) initially upon designation, annually, and at other times requested by the Administrator.
- (f) If any pump is equipped with a closed-vent system capable of capturing and transporting any leakage from the seal or seals to a process or fuel gas system or to a control device that complies with the requirements of § 61.242-11, it is exempt from the requirements of paragraphs (a) through (e) of this section.
- (g) Any pump that is designated, as described in § 61.246(f)(1), as an unsafe-to-monitor pump is exempt from the monitoring and inspection requirements of paragraphs (a) and (d)(4) through (6) of this section if:
- (1) The owner or operator of the pump demonstrates that the pump is unsafe-to-monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (a) of this section; and
 - (2) The owner or operator of the pump has a written plan that requires monitoring of the pump as frequently as practicable during safe-to-monitor times but not more frequently than the periodic monitoring schedule otherwise applicable, and repair of the equipment according to the procedures in paragraph (c) of this section if a leak is detected.
- (h) Any pump that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement of paragraphs (a)(2) and (d)(4) of this section, and the daily requirements of paragraph (d)(5) of this section, provided that each pump is visually inspected as often as practicable and at least monthly.

[49 FR 23513, June 6, 1984, as amended at 49 FR 38946, Oct. 2, 1984; 55 FR 28349, July 10, 1990; 65 FR 78281, Dec. 14, 2000]

§ 61.242-3 Standards: Compressors.

- (a) Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of process fluid to atmosphere, except as provided in § 61.242-1(c) and paragraphs (h) and (i) of this section.

- (b) Each compressor seal system as required in paragraph (a) shall be:
 - (1) Operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or
 - (2) Equipped with a barrier fluid system degassing reservoir that is routed to a process or fuel gas system or connected by a closed-vent system to a control device that complies with the requirements of § 61.242-11; or
 - (3) Equipped with a system that purges the barrier fluid into a process stream with zero VHAP emissions to atmosphere.
- (c) The barrier fluid shall not be in VHAP service and, if the compressor is covered by standards under 40 CFR part 60, shall not be in VOC service.
- (d) Each barrier fluid system as described in paragraphs (a)-(c) of this section shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.
- (e)
 - (1) Each sensor as required in paragraph (d) of this section shall be checked daily or shall be equipped with an audible alarm unless the compressor is located within the boundary of an unmanned plant site.
 - (2) The owner or operator shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.
- (f) If the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined under paragraph (e)(2) of this section, a leak is detected.
- (g)
 - (1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in § 61.242-10.
 - (2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
- (h) A compressor is exempt from the requirements of paragraphs (a) and (b) of this section if it is equipped with a closed-vent system to capture and transport leakage from the compressor drive shaft back to a process or fuel gas system or to a control device that complies with the requirements of § 61.242-11, except as provided in paragraph (i) of this section.
- (i) Any Compressor that is designated, as described in § 61.246(e)(2), for no detectable emission as indicated by an instrument reading of less than 500 ppm above background is exempt from the requirements of paragraphs (a)-(h) if the compressor:
 - (1) Is demonstrated to be operating with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the method specified in § 61.245(c); and
 - (2) Is tested for compliance with paragraph (i)(1) initially upon designation, annually, and at other times requested by the Administrator.

[49 FR 23513, June 6, 1984; 49 FR 38946, Oct. 2, 1984, as amended at 65 FR 78281, Dec. 14, 2000]

§ 61.242-4 Standards: Pressure relief devices in gas/vapor service.

- (a) Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the method specified in § 61.245(c).
- (b)
 - (1) After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in § 61.242-10.
 - (2) No later than 5 calendar days after the pressure release, the pressure relief device shall be monitored to confirm the condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the method specified in § 61.245(c).
- (c) Any pressure relief device that is routed to a process or fuel gas system or equipped with a closed-vent system capable of capturing and transporting leakage from the pressure relief device to a control device as described in § 61.242-11 is exempt from the requirements of paragraphs (a) and (b) of this section.
- (d)
 - (1) Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the requirements of paragraphs (a) and (b) of this section, provided the owner or operator complies with the requirements in paragraph (d)(2) of this section.
 - (2) After each pressure release, a new rupture disk shall be installed upstream of the pressure relief device as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in § 61.242-10.

[49 FR 23513, June 6, 1984; 49 FR 38946, Oct. 2, 1984, as amended at 65 FR 78281, Dec. 14, 2000]

§ 61.242-5 Standards: Sampling connecting systems.

- (a) Each sampling connection system shall be equipped with a closed-purge, closed-loop, or closed vent system, except as provided in § 61.242-1(c). Gases displaced during filling of the sample container are not required to be collected or captured.
- (b) Each closed-purge, closed-loop, or closed vent system as required in paragraph (a) of this section shall comply with the requirements specified in paragraphs (b)(1) through (4) of this section:
 - (1) Return the purged process fluid directly to the process line; or
 - (2) Collect and recycle the purged process fluid; or
 - (3) Be designed and operated to capture and transport all the purged process fluid to a control device that complies with the requirements of § 61.242-11; or
 - (4) Collect, store, and transport the purged process fluid to any of the following systems or facilities:
 - (i) A waste management unit as defined in 40 CFR 63.111 if the waste management unit is subject to and operated in compliance with the provisions of 40 CFR part 63, subpart G, applicable to Group 1 wastewater streams; or

- (ii) A treatment, storage, or disposal facility subject to regulation under 40 CFR part 262, 264, 265, or 266; or
 - (iii) A facility permitted, licensed, or registered by a State to manage municipal or industrial solid waste, if the process fluids are not hazardous waste as defined in 40 CFR part 261.
- (c) In-situ sampling systems and sampling systems without purges are exempt from the requirements of paragraphs (a) and (b) of this section.

[65 FR 78281, Dec. 14, 2000]

§ 61.242-6 Standards: Open-ended valves or lines.

- (a)
- (1) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in § 61.242-1(c).
 - (2) The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line.
- (b) Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.
- (c) When a double block and bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with paragraph (a) at all other times.
- (d) Open-ended valves or lines in an emergency shutdown system which are designed to open automatically in the event of a process upset are exempt from the requirements of paragraphs (a), (b) and (c) of this section.
- (e) Open-ended valves or lines containing materials which would autocatalytically polymerize or would present an explosion, serious overpressure, or other safety hazard if capped or equipped with a double block and bleed system as specified in paragraphs (a) through (c) of this section are exempt from the requirements of paragraphs (a) through (c) of this section.

[49 FR 23513, June 6, 1984, as amended at 65 FR 78282, Dec. 14, 2000]

§ 61.242-7 Standards: Valves.

- (a) Each valve shall be monitored monthly to detect leaks by the method specified in § 61.245(b) and shall comply with paragraphs (b)-(e), except as provided in paragraphs (f), (g), and (h) of this section, § 61.243-1 or § 61.243-2, and § 61.242-1(c).
- (b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.
- (c)
- (1) Any valve for which a leak is not detected for 2 successive months may be monitored the first month of every quarter, beginning with the next quarter, until a leak is detected.
 - (2) If a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months.

(d)

(1) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in § 61.242-10.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(e) First attempts at repair include, but are not limited to, the following best practices where practicable:

(1) Tightening of bonnet bolts;

(2) Replacement of bonnet bolts;

(3) Tightening of packing gland nuts; and

(4) Injection of lubricant into lubricated packing.

(f) Any valve that is designated, as described in § 61.246(e)(2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraph (a) if the valve:

(1) Has no external actuating mechanism in contact with the process fluid;

(2) Is operated with emissions less than 500 ppm above background, as measured by the method specified in § 61.245(c); and

(3) Is tested for compliance with paragraph (f)(2) initially upon designation, annually, and at other times requested by the Administrator.

(g) Any valve that is designated, as described in § 61.246(f)(1), as an unsafe-to-monitor valve is exempt from the requirements of paragraph (a) if:

(1) The owner or operator of the valve demonstrates that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (a); and

(2) The owner or operator of the valve has a written plan that requires monitoring of the valve as frequent as practicable during safe-to-monitor times.

(h) Any valve that is designated, as described in § 61.246(f)(2), as a difficult-to-monitor valve is exempt from the requirements of paragraph (a) if:

(1) The owner or operator of the valve demonstrates that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface;

(2) The process unit within which the valve is located is an existing process unit; and

(3) The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year.

§ 61.242-8 Standards: Pressure relief services in liquid service and connectors.

(a) If evidence of a potential leak is found by visual, audible, olfactory, or any other detection method at pressure relief devices in liquid service and connectors, the owner or operator shall follow either one of the following procedures, except as provided in § 61.242-1(c):

(1) The owner or operator shall monitor the equipment within 5 days by the method specified in § 61.245(b) and shall comply with the requirements of paragraphs (b) through (d) of this section.

- (2) The owner or operator shall eliminate the visual, audible, olfactory, or other indication of a potential leak.
- (b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.
- (c)
 - (1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in § 61.242-10.
 - (2) The first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
- (d) First attempts at repair include, but are not limited to, the best practices described under § 61.242-7(e).

[49 FR 23513, June 6, 1984; 49 FR 38946, Oct. 2, 1984, as amended at 65 FR 78282, Dec. 14, 2000]

§ 61.242-9 Standards: Surge control vessels and bottoms receivers.

Each surge control vessel or bottoms receiver that is not routed back to the process and that meets the conditions specified in table 1 or table 2 of this subpart shall be equipped with a closed-vent system capable of capturing and transporting any leakage from the vessel back to the process or to a control device as described in § 61.242-11, except as provided in § 61.242-1(c); or comply with the requirements of 40 CFR 63.119(b) or (c).

[65 FR 78282, Dec. 14, 2000]

§ 61.242-10 Standards: Delay of repair.

- (a) Delay of repair of equipment for which leaks have been detected will be allowed if repair within 15 days is technically infeasible without a process unit shutdown. Repair of this equipment shall occur before the end of the next process unit shutdown.
- (b) Delay of repair of equipment for which leaks have been detected will be allowed for equipment that is isolated from the process and that does not remain in VHAP service.
- (c) Delay of repair for valves will be allowed if:
 - (1) The owner or operator demonstrates that emissions of purged material resulting from immediate repair are greater than the fugitive emissions likely to result from delay of repair, and
 - (2) When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with § 61.242-11.
- (d) Delay of repair for pumps will be allowed if:
 - (1) Repair requires the use of a dual mechanical seal system that includes a barrier fluid system, and
 - (2) Repair is completed as soon as practicable, but not later than 6 months after the leak was detected.
- (e) Delay of repair beyond a process unit shutdown will be allowed for a valve if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next process unit shutdown will not be allowed unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown.

[49 FR 23513, June 6, 1984, as amended at 65 FR 78282, Dec. 14, 2000]

§ 61.242-11 Standards: Closed-vent systems and control devices.

- (a) Owners or operators of closed-vent systems and control devices used to comply with provisions of this subpart shall comply with the provisions of this section, except as provided in § 61.242-1(c).
- (b) Vapor recovery systems (for example, condensers and absorbers) shall be designed and operated to recover the organic vapors vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume, whichever is less stringent.
- (c) Enclosed combustion devices shall be designed and operated to reduce the VHAP emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent, or to provide a minimum residence time of 0.50 seconds at a minimum temperature of 760 °C.
- (d) Flares shall used to comply with this subpart shall comply with the requirements of § 60.18.
- (e) Owners or operators of control devices that are used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their design.
- (f) Except as provided in paragraphs (i) through (k) of this section, each closed vent system shall be inspected according to the procedures and schedule specified in paragraph (f)(1) or (2) of this section, as applicable.
 - (1) If the vapor collection system or closed vent system is constructed of hard-piping, the owner or operator shall comply with the following requirements:
 - (i) Conduct an initial inspection according to the procedures in § 61.245(b); and
 - (ii) Conduct annual visual inspections for visible, audible, or olfactory indications of leaks.
 - (2) If the vapor collection system or closed vent system is constructed of ductwork, the owner or operator shall:
 - (i) Conduct an initial inspection according to the procedures in § 61.245(b); and
 - (ii) Conduct annual inspections according to the procedures in § 61.245(b).
- (g) Leaks, as indicated by an instrument reading greater than 500 parts per million by volume above background or by visual inspections, shall be repaired as soon as practicable except as provided in paragraph (h) of this section.
 - (1) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.
 - (2) Repair shall be completed no later than 15 calendar days after the leak is detected.
- (h) Delay of repair of a closed vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown, or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next process unit shutdown.
- (i) If a vapor collection system or closed vent system is operated under a vacuum, it is exempt from the inspection requirements of paragraphs (f)(1)(i) and (2) of this section.

- (j) Any parts of the closed vent system that are designated, as described in paragraph (l)(1) of this section, as unsafe-to-inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (2) of this section if they comply with the following requirements:
 - (1) The owner or operator determines that the equipment is unsafe-to-inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with paragraph (f)(1)(i) or (2) of this section; and
 - (2) The owner or operator has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times.
- (k) Any parts of the closed vent system that are designated, as described in paragraph (l)(2) of this section, as difficult-to-inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (2) of this section if they comply with the following requirements:
 - (1) The owner or operator determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface; and
 - (2) The owner or operator has a written plan that requires inspection of the equipment at least once every 5 years. A closed vent system is exempt from inspection if it is operated under a vacuum.
- (l) The owner or operator shall record the following information:
 - (1) Identification of all parts of the closed vent system that are designated as unsafe-to-inspect, an explanation of why the equipment is unsafe-to-inspect, and the plan for inspecting the equipment.
 - (2) Identification of all parts of the closed vent system that are designated as difficult-to-inspect, an explanation of why the equipment is difficult-to-inspect, and the plan for inspecting the equipment.
 - (3) For each inspection during which a leak is detected, a record of the information specified in § 61.246(c).
 - (4) For each inspection conducted in accordance with § 61.245(b) during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.
 - (5) For each visual inspection conducted in accordance with paragraph (f)(1)(ii) of this section during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.
- (m) Closed vent systems and control devices used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them.

[49 FR 23513, June 6, 1984; 49 FR 38946, Oct. 2, 1984, as amended at 51 FR 2702, Jan. 21, 1986; 65 FR 62158, Oct. 17, 2000; 65 FR 78282, Dec. 14, 2000]

§ 61.243-1 Alternative standards for valves in VHAP service—allowable percentage of valves leaking.

- (a) An owner or operator may elect to have all valves within a process unit to comply with an allowable percentage of valves leaking of equal to or less than 2.0 percent.
- (b) The following requirements shall be met if an owner or operator decides to comply with an allowable percentage of valves leaking:

- (1) An owner or operator must notify the Administrator that the owner or operator has elected to have all valves within a process unit to comply with the allowable percentage of valves leaking before implementing this alternative standard, as specified in § 61.247(d).
 - (2) A performance test as specified in paragraph (c) of this section shall be conducted initially upon designation, annually, and at other times requested by the Administrator.
 - (3) If a valve leak is detected, it shall be repaired in accordance with § 61.242-7(d) and (e).
- (c) Performance tests shall be conducted in the following manner:
- (1) All valves in VHAP service within the process unit shall be monitored within 1 week by the methods specified in § 61.245(b).
 - (2) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.
 - (3) The leak percentage shall be determined by dividing the number of valves in VHAP service for which leaks are detected by the number of valves in VHAP service within the process unit.
- (d) Owner or operators who elect to have all valves comply with this alternative standard shall not have a process unit with a leak percentage greater than 2.0 percent.
- (e) If an owner or operator decides no longer to comply with § 61.243-1, the owner or operator must notify the Administrator in writing that the work practice standard described in § 61.242-7(a)-(e) will be followed.

§ 61.243-2 Alternative standards for valves in VHAP service—skip period leak detection and repair.

- (a)
- (1) An owner or operator may elect for all valves within a process unit to comply with one of the alternative work practices specified in paragraphs (b)(2) and (3) of this section.
 - (2) An owner or operator must notify the Administrator before implementing one of the alternative work practices, as specified in § 61.247(d).
- (b)
- (1) An owner or operator shall comply initially with the requirements for valves, as described in § 61.242-7.
 - (2) After 2 consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than 2.0, an owner or operator may begin to skip one of the quarterly leak detection periods for the valves in VHAP service.
 - (3) After five consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than 2.0, an owner or operator may begin to skip three of the quarterly leak detection periods for the valves in VHAP service.
 - (4) If the percentage of valves leaking is greater than 2.0, the owner or operator shall comply with the requirements as described in § 61.242-7 but may again elect to use this section.

[49 FR 23513, June 6, 1984, as amended at 65 FR 62158, Oct. 17, 2000]

§ 61.244 Alternative means of emission limitation.

- (a) Permission to use an alternative means of emission limitation under section 112(e)(3) of the Clean Air Act shall be governed by the following procedures:
- (b) Where the standard is an equipment, design, or operational requirement:
 - (1) Each owner or operator applying for permission shall be responsible for collecting and verifying test data for an alternative means of emission limitation to test data for the equipment, design, and operational requirements.
 - (2) The Administrator may condition the permission on requirements that may be necessary to assure operation and maintenance to achieve the same emission reduction as the equipment, design, and operational requirements.
- (c) Where the standard is a work practice:
 - (1) Each owner or operator applying for permission shall be responsible for collecting and verifying test data for an alternative means of emission limitation.
 - (2) For each source for which permission is requested, the emission reduction achieved by the required work practices shall be demonstrated for a minimum period of 12 months.
 - (3) For each source for which permission is requested, the emission reduction achieved by the alternative means of emission limitation shall be demonstrated.
 - (4) Each owner or operator applying for permission shall commit in writing each source to work practices that provide for emission reductions equal to or greater than the emission reductions achieved by the required work practices.
 - (5) The Administrator will compare the demonstrated emission reduction for the alternative means of emission limitation to the demonstrated emission reduction for the required work practices and will consider the commitment in paragraph (c)(4).
 - (6) The Administrator may condition the permission on requirements that may be necessary to assure operation and maintenance to achieve the same emission reduction as the required work practices of this subpart.
- (d) An owner or operator may offer a unique approach to demonstrate the alternative means of emission limitation.
- (e)
 - (1) Manufacturers of equipment used to control equipment leaks of a VHAP may apply to the Administrator for permission for an alternative means of emission limitation that achieves a reduction in emissions of the VHAP achieved by the equipment, design, and operational requirements of this subpart.
 - (2) The Administrator will grant permission according to the provisions of paragraphs (b), (c), and (d).

[49 FR 23513, June 6, 1984, as amended at 65 FR 62158, Oct. 17, 2000]

§ 61.245 Test methods and procedures.

- (a) Each owner or operator subject to the provisions of this subpart shall comply with the test methods and procedures requirements provided in this section.
- (b) Monitoring, as required in §§ 61.242, 61.243, 61.244, and 61.135, shall comply with the following requirements:
 - (1) Monitoring shall comply with Method 21 of appendix A of 40 CFR part 60.
 - (2) The detection instrument shall meet the performance criteria of Method 21.
 - (3) The instrument shall be calibrated before use on each day of its use by the procedures specified in Method 21.
 - (4) Calibration gases shall be:
 - (i) Zero air (less than 10 ppm of hydrocarbon in air); and
 - (ii) A mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane.
 - (5) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Method 21.
- (c) When equipment is tested for compliance with or monitored for no detectable emissions, the owner or operator shall comply with the following requirements:
 - (1) The requirements of paragraphs (b) (1) through (4) shall apply.
 - (2) The background level shall be determined, as set forth in Method 21.
 - (3) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Method 21.
 - (4) The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance.
- (d)
 - (1) Each piece of equipment within a process unit that can conceivably contain equipment in VHAP service is presumed to be in VHAP service unless an owner or operator demonstrates that the piece of equipment is not in VHAP service. For a piece of equipment to be considered not in VHAP service, it must be determined that the percent VHAP content can be reasonably expected never to exceed 10 percent by weight. For purposes of determining the percent VHAP content of the process fluid that is contained in or contacts equipment, procedures that conform to the methods described in ASTM Method D-2267 (incorporated by the reference as specified in § 61.18) shall be used.
 - (2)
 - (i) An owner or operator may use engineering judgment rather than the procedures in paragraph (d)(1) of this section to demonstrate that the percent VHAP content does not exceed 10 percent by weight, provided that the engineering judgment demonstrates that the VHAP content clearly does not exceed 10 percent by weight. When an owner or operator and the Administrator do not agree on whether a piece of equipment is not in VHAP service, however, the procedures in paragraph (d)(1) of this section shall be used to resolve the disagreement.

(ii) If an owner or operator determines that a piece of equipment is in VHAP service, the determination can be revised only after following the procedures in paragraph (d)(1) of this section.

(3) Samples used in determining the percent VHAP content shall be representative of the process fluid that is contained in or contacts the equipment or the gas being combusted in the flare.

(e)

(1) Method 22 of appendix A of 40 CFR part 60 shall be used to determine compliance of flares with the visible emission provisions of this subpart.

(2) The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.

(3) The net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$H_T = K \left(\sum_{i=1}^n C_i H_i \right)$$

Where:

H_T = Net heating value of the sample, MJ/scm (BTU/scf); where the net enthalpy per mole of offgas is based on combustion at 25 °C and 760 mm Hg (77 °F and 14.7 psi), but the standard temperature for determining the volume corresponding to one mole is 20 °C (68 °F).

K = conversion constant, 1.740×10^7 (g-mole) (MJ)/(ppm-scm-kcal) (metric units); or 4.674×10^8 ((g-mole) (Btu)/(ppm-scf-kcal)) (English units)

C_i = Concentration of sample component "i" in ppm, as measured by Method 18 of appendix A to 40 CFR part 60 and ASTM D2504-67, 77, or 88 (Reapproved 1993) (incorporated by reference as specified in § 61.18).

H_i = net heat of combustion of sample component "i" at 25 °C and 760 mm Hg (77 °F and 14.7 psi), kcal/g-mole. The heats of combustion may be determined using ASTM D2382-76 or 88 or D4809-95 (incorporated by reference as specified in § 61.18) if published values are not available or cannot be calculated.

(4) The actual exit velocity of a flare shall be determined by dividing the volumetric flowrate (in units of standard temperature and pressure), as determined by Method 2, 2A, 2C, or 2D, as appropriate, by the unobstructed (free) cross section area of the flare tip.

(5) The maximum permitted velocity, V_{max} , for air-assisted flares shall be determined by the following equation:

$$V_{max} = K_1 + K_2 H_T$$

Where:

V_{max} = Maximum permitted velocity, m/sec (ft/sec).

H_T = Net heating value of the gas being combusted, as determined in paragraph (e)(3) of this section, MJ/scm (Btu/scf).

K_1 = 8.706 m/sec (metric units)

= 28.56 ft/sec (English units)

K_2 = 0.7084 m⁴/(MJ-sec) (metric units)

= 0.087 ft⁴/(Btu-sec) (English units)

[49 FR 23513, June 6, 1984, as amended at 49 FR 38946, Oct. 2, 1984; 49 FR 43647, Oct. 31, 1984; 53 FR 36972, Sept. 23, 1988; 54 FR 38077, Sept. 14, 1989; 65 FR 62158, Oct. 17, 2000]

§ 61.246 Recordkeeping requirements.

(a)

- (1) Each owner or operator subject to the provisions of this subpart shall comply with the recordkeeping requirements of this section.
- (2) An owner or operator of more than one process unit subject to the provisions of this subpart may comply with the recordkeeping requirements for these process units in one recordkeeping system if the system identifies each record by each process unit.

(b) When each leak is detected as specified in §§ 61.242-2, 61.242-3, 61.242-7, 61.242-8, and 61.135, the following requirements apply:

- (1) A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment.
- (2) The identification on a valve may be removed after it has been monitored for 2 successive months as specified in § 61.242-7(c) and no leak has been detected during those 2 months.
- (3) The identification on equipment, except on a valve, may be removed after it has been repaired.

(c) When each leak is detected as specified in §§ 61.242-2, 61.242-3, 61.242-7, 61.242-8, and 61.135, the following information shall be recorded in a log and shall be kept for 2 years in a readily accessible location:

- (1) The instrument and operator identification numbers and the equipment identification number.
- (2) The date the leak was detected and the dates of each attempt to repair the leak.
- (3) Repair methods applied in each attempt to repair the leak.
- (4) "Above 10,000" if the maximum instrument reading measured by the methods specified in § 61.245(a) after each repair attempt is equal to or greater than 10,000 ppm.
- (5) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.
- (6) The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a process shutdown.

- (7) The expected date of successful repair of the leak if a leak is not repaired within 15 calendar days.
- (8) Dates of process unit shutdowns that occur while the equipment is unrepaired.
- (9) The date of successful repair of the leak.
- (d) The following information pertaining to the design requirements for closed-vent systems and control devices described in § 61.242-11 shall be recorded and kept in a readily accessible location:
 - (1) Detailed schematics, design specifications, and piping and instrumentation diagrams.
 - (2) The dates and descriptions of any changes in the design specifications.
 - (3) A description of the parameter or parameters monitored, as required in § 61.242-11(e), to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring.
 - (4) Periods when the closed-vent systems and control devices required in §§ 61.242-2, 61.242-3, 61.242-4, 61.242-5 and 61.242-9 are not operated as designed, including periods when a flare pilot light does not have a flame.
 - (5) Dates of startups and shutdowns of the closed-vent systems and control devices required in §§ 61.242-2, 61.242-3, 61.242-4, 61.242-5 and 61.242-9.
- (e) The following information pertaining to all equipment to which a standard applies shall be recorded in a log that is kept in a readily accessible location:
 - (1) A list of identification numbers for equipment (except welded fittings) subject to the requirements of this subpart.
 - (2)
 - (i) A list of identification numbers for equipment that the owner or operator elects to designate for no detectable emissions as indicated by an instrument reading of less than 500 ppm above background.
 - (ii) The designation of this equipment for no detectable emissions shall be signed by the owner or operator.
 - (3) A list of equipment identification numbers for pressure relief devices required to comply with § 61.242-4(a).
 - (4)
 - (i) The dates of each compliance test required in §§ 61.242-2(e), 61.242-3(i), 61.242-4, 61.242-7(f), and 61.135(g).
 - (ii) The background level measured during each compliance test.
 - (iii) The maximum instrument reading measured at the equipment during each compliance test.
 - (5) A list of identification numbers for equipment in vacuum service.
- (f) The following information pertaining to all valves subject to the requirements of § 61.242-7(g) and (h) and to all pumps subject to the requirements of § 61.242-2(g) shall be recorded in a log that is kept in a readily accessible location:

- (1) A list of identification numbers for valves and pumps that are designated as unsafe to monitor, an explanation for each valve or pump stating why the valve or pump is unsafe to monitor, and the plan for monitoring each valve or pump.
- (2) A list of identification numbers for valves that are designated as difficult to monitor, an explanation for each valve stating why the valve is difficult to monitor, and the planned schedule for monitoring each valve.
- (g) The following information shall be recorded for valves complying with § 61.243-2:
 - (1) A schedule of monitoring.
 - (2) The percent of valves found leaking during each monitoring period.
- (h) The following information shall be recorded in a log that is kept in a readily accessible location:
 - (1) Design criterion required in §§ 61.242-2(d)(5), 61.242-3(e)(2), and 61.135(e)(4) and an explanation of the design criterion; and
 - (2) Any changes to this criterion and the reasons for the changes.
- (i) The following information shall be recorded in a log that is kept in a readily accessible location for use in determining exemptions as provided in the applicability section of this subpart and other specific subparts:
 - (1) An analysis demonstrating the design capacity of the process unit, and
 - (2) An analysis demonstrating that equipment is not in VHAP service.
- (j) Information and data used to demonstrate that a piece of equipment is not in VHAP service shall be recorded in a log that is kept in a readily accessible location.

[49 FR 23513, June 6, 1984, as amended at 49 FR 38946, Oct. 2, 1984; 54 FR 38077, Sept. 14, 1989; 65 FR 78283, Dec. 14, 2000]

§ 61.247 Reporting requirements.

- (a)
 - (1) An owner or operator of any piece of equipment to which this subpart applies shall submit a statement in writing notifying the Administrator that the requirements of §§ 61.242, 61.245, 61.246, and 61.247 are being implemented.
 - (2) In the case of an existing source or a new source which has an initial startup date preceding the effective date, the statement is to be submitted within 90 days of the effective date, unless a waiver of compliance is granted under § 61.11, along with the information required under § 61.10. If a waiver of compliance is granted, the statement is to be submitted on a date scheduled by the Administrator.
 - (3) In the case of new sources which did not have an initial startup date preceding December 14, 2000, the statement required under paragraph (a)(1) of this section shall be submitted with the application for approval of construction, as described in § 61.07.
 - (4) For owners and operators complying with 40 CFR part 65, subpart C or F, the statement required under paragraph (a)(1) of this section shall notify the Administrator that the requirements of 40 CFR part 65, subpart C or F, are being implemented.

- (5) The statement is to contain the following information for each source:
 - (i) Equipment identification number and process unit identification.
 - (ii) Type of equipment (for example, a pump or pipeline valve).
 - (iii) Percent by weight VHAP in the fluid at the equipment.
 - (iv) Process fluid state at the equipment (gas/vapor or liquid).
 - (v) Method of compliance with the standard (for example, “monthly leak detection and repair” or “equipped with dual mechanical seals”).

(b) A report shall be submitted to the Administrator semiannually starting 6 months after the initial report required in paragraph (a) of this section, that includes the following information:

- (1) Process unit identification.
- (2) For each month during the semiannual reporting period,
 - (i) Number of valves for which leaks were detected as described in § 61.242-7(b) of § 61.243-2.
 - (ii) Number of valves for which leaks were not repaired as required in § 61.242-7(d).
 - (iii) Number of pumps for which leaks were detected as described in § 61.242-2 (b) and (d)(6).
 - (iv) Number of pumps for which leaks were not repaired as required in § 61.242-2 (c) and (d)(6).
 - (v) Number of compressors for which leaks were detected as described in § 61.242-3(f).
 - (vi) Number of compressors for which leaks were not repaired as required in § 61.242-3(g).
 - (vii) The facts that explain any delay of repairs and, where appropriate, why a process unit shutdown was technically infeasible.
- (3) Dates of process unit shutdowns which occurred within the semiannual reporting period.
- (4) Revisions to items reported according to paragraph (a) if changes have occurred since the initial report or subsequent revisions to the initial report.

Note: Compliance with the requirements of § 61.10(c) is not required for revisions documented under this paragraph.

- (5) The results of all performance tests and monitoring to determine compliance with no detectable emissions and with §§ 61.243-1 and 61.243-2 conducted within the semiannual reporting period.
- (c) In the first report submitted as required in paragraph (a) of this section, the report shall include a reporting schedule stating the months that semiannual reports shall be submitted. Subsequent reports shall be submitted according to that schedule, unless a revised schedule has been submitted in a previous semiannual report.
- (d) An owner or operator electing to comply with the provisions of §§ 61.243-1 and 61.243-2 shall notify the Administrator of the alternative standard selected 90 days before implementing either of the provisions.
- (e) An application for approval of construction or modification, §§ 61.05(a) and 61.07, will not be required if—
 - (1) The new source complies with the standard, § 61.242;

- (2) The new source is not part of the construction of a process unit; and
- (3) In the next semiannual report required by paragraph (b) of this section, the information in paragraph (a)(5) of this section is reported.
- (f) For owners or operators choosing to comply with 40 CFR part 65, subpart C or F, an application for approval of construction or modification, as required under §§ 61.05 and 61.07 will not be required if:

(1) The new source complies with 40 CFR 65.106 through 65.115 and with 40 CFR part 65, subpart C, for surge control vessels and bottoms receivers;

(2) The new source is not part of the construction of a process unit; and

(3) In the next semiannual report required by 40 CFR 65.120(b) and 65.48(b), the information in paragraph (a)(5) of this section is reported.

[49 FR 23513, June 6, 1984, as amended at 49 FR 38947, Oct. 2, 1984; 54 FR 38077, Sept. 14, 1989; 65 FR 78283, Dec. 14, 2000]

Table 1 to Subpart V of Part 61—Surge Control Vessels and Bottoms Receivers at Existing Sources

Vessel capacity (cubic meters)	Vapor pressure ¹ (kilopascals)
75 ≤capacity <151	≥13.1
151 ≤capacity	≥5.2

¹ Maximum true vapor pressure as defined in § 61.241.

[65 FR 78283, Dec. 14, 2000]

Table 2 to Subpart V of Part 61—Surge Control Vessels and Bottoms Receivers at New Sources

Vessel capacity (cubic meters)	Vapor pressure ¹ (kilopascals)
38 ≤capacity <151	≥13.1
151 ≤capacity	≥0.7

¹ Maximum true vapor pressure as defined in § 61.241.

[65 FR 78283, Dec. 14, 2000]

This content is from the eCFR and is authoritative but unofficial.

Title 40 —Protection of Environment

Chapter I —Environmental Protection Agency

Subchapter C —Air Programs

Part 61 —National Emission Standards for Hazardous Air Pollutants

Authority: 42 U.S.C. 7401 *et seq.*

Source: 38 FR 8826, Apr. 6, 1973, unless otherwise noted.

Subpart FF National Emission Standard for Benzene Waste Operations

- § 61.340 Applicability.
- § 61.341 Definitions.
- § 61.342 Standards: General.
- § 61.343 Standards: Tanks.
- § 61.344 Standards: Surface impoundments.
- § 61.345 Standards: Containers.
- § 61.346 Standards: Individual drain systems.
- § 61.347 Standards: Oil-water separators.
- § 61.348 Standards: Treatment processes.
- § 61.349 Standards: Closed-vent systems and control devices.
- § 61.350 Standards: Delay of repair.
- § 61.351 Alternative standards for tanks.
- § 61.352 Alternative standards for oil-water separators.
- § 61.353 Alternative means of emission limitation.
- § 61.354 Monitoring of operations.
- § 61.355 Test methods, procedures, and compliance provisions.
- § 61.356 Recordkeeping requirements.
- § 61.357 Reporting requirements.
- § 61.358 Delegation of authority.
- § 61.359 *[Reserved]*

Subpart FF—National Emission Standard for Benzene Waste Operations

Source: 55 FR 8346, Mar. 7, 1990, unless otherwise noted.

§ 61.340 Applicability.

- (a) The provisions of this subpart apply to owners and operators of chemical manufacturing plants, coke by-product recovery plants, and petroleum refineries.

- (b) The provisions of this subpart apply to owners and operators of hazardous waste treatment, storage, and disposal facilities that treat, store, or dispose of hazardous waste generated by any facility listed in paragraph (a) of this section. The waste streams at hazardous waste treatment, storage, and disposal facilities subject to the provisions of this subpart are the benzene-containing hazardous waste from any facility listed in paragraph (a) of this section. A hazardous waste treatment, storage, and disposal facility is a facility that must obtain a hazardous waste management permit under subtitle C of the Solid Waste Disposal Act.
- (c) At each facility identified in paragraph (a) or (b) of this section, the following waste is exempt from the requirements of this subpart:
 - (1) Waste in the form of gases or vapors that is emitted from process fluids:
 - (2) Waste that is contained in a segregated stormwater sewer system.
- (d) At each facility identified in paragraph (a) or (b) of this section, any gaseous stream from a waste management unit, treatment process, or wastewater treatment system routed to a fuel gas system, as defined in § 61.341, is exempt from this subpart. No testing, monitoring, recordkeeping, or reporting is required under this subpart for any gaseous stream from a waste management unit, treatment process, or wastewater treatment unit routed to a fuel gas system.

[55 FR 8346, Mar. 7, 1990, as amended at 55 FR 37231, Sept. 10, 1990; 58 FR 3095, Jan. 7, 1993; 67 FR 68531, Nov. 12, 2002]

§ 61.341 Definitions.

Benzene concentration means the fraction by weight of benzene in a waste as determined in accordance with the procedures specified in § 61.355 of this subpart.

Car-seal means a seal that is placed on a device that is used to change the position of a valve (e.g., from opened to closed) in such a way that the position of the valve cannot be changed without breaking the seal.

Chemical manufacturing plant means any facility engaged in the production of chemicals by chemical, thermal, physical, or biological processes for use as a product, co-product, by-product, or intermediate including but not limited to industrial organic chemicals, organic pesticide products, pharmaceutical preparations, paint and allied products, fertilizers, and agricultural chemicals. Examples of chemical manufacturing plants include facilities at which process units are operated to produce one or more of the following chemicals: benzenesulfonic acid, benzene, chlorobenzene, cumene, cyclohexane, ethylene, ethylbenzene, hydroquinone, linear alkylbenzene, nitrobenzene, resorcinol, sulfolane, or styrene.

Closed-vent system means a system that is not open to the atmosphere and is composed of piping, ductwork, connections, and, if necessary, flow inducing devices that transport gas or vapor from an emission source to a control device.

Coke by-product recovery plant means any facility designed and operated for the separation and recovery of coal tar derivatives (by-products) evolved from coal during the coking process of a coke oven battery.

Container means any portable waste management unit in which a material is stored, transported, treated, or otherwise handled. Examples of containers are drums, barrels, tank trucks, barges, dumpsters, tank cars, dump trucks, and ships.

Control device means an enclosed combustion device, vapor recovery system, or flare.

Cover means a device or system which is placed on or over a waste placed in a waste management unit so that the entire waste surface area is enclosed and sealed to minimize air emissions. A cover may have openings necessary for operation, inspection, and maintenance of the waste management unit such as access hatches, sampling ports, and gauge wells provided that each opening is closed and sealed when not in use. Example of covers include a fixed roof installed on a tank, a lid installed on a container, and an air-supported enclosure installed over a waste management unit.

External floating roof means a pontoon-type or double-deck type cover with certain rim sealing mechanisms that rests on the liquid surface in a waste management unit with no fixed roof.

Facility means all process units and product tanks that generate waste within a stationary source, and all waste management units that are used for waste treatment, storage, or disposal within a stationary source.

Fixed roof means a cover that is mounted on a waste management unit in a stationary manner and that does not move with fluctuations in liquid level.

Floating roof means a cover with certain rim sealing mechanisms consisting of a double deck, pontoon single deck, internal floating cover or covered floating roof, which rests upon and is supported by the liquid being contained, and is equipped with a closure seal or seals to close the space between the roof edge and unit wall.

Flow indicator means a device which indicates whether gas flow is present in a line or vent system.

Fuel gas system means the offsite and onsite piping and control system that gathers gaseous streams generated by facility operations, may blend them with sources of gas, if available, and transports the blended gaseous fuel at suitable pressures for use as fuel in heaters, furnaces, boilers, incinerators, gas turbines, and other combustion devices located within or outside the facility. The fuel is piped directly to each individual combustion device, and the system typically operates at pressures over atmospheric.

Individual drain system means the system used to convey waste from a process unit, product storage tank, or waste management unit to a waste management unit. The term includes all process drains and common junction boxes, together with their associated sewer lines and other junction boxes, down to the receiving waste management unit.

Internal floating roof means a cover that rests or floats on the liquid surface inside a waste management unit that has a fixed roof.

Liquid-mounted seal means a foam or liquid-filled primary seal mounted in contact with the liquid between the waste management unit wall and the floating roof continuously around the circumference.

Loading means the introduction of waste into a waste management unit but not necessarily to complete capacity (also referred to as filling).

Maximum organic vapor pressure means the equilibrium partial pressure exerted by the waste at the temperature equal to the highest calendar-month average of the waste storage temperature for waste stored above or below the ambient temperature or at the local maximum monthly average temperature as reported by the National Weather Service for waste stored at the ambient temperature, as determined:

- (1) In accordance with § 60.17(c); or
- (2) As obtained from standard reference texts; or
- (3) In accordance with § 60.17(a)(37); or
- (4) Any other method approved by the Administrator.

No detectable emissions means less than 500 parts per million by volume (ppmv) above background levels, as measured by a detection instrument reading in accordance with the procedures specified in § 61.355(h) of this subpart.

Oil-water separator means a waste management unit, generally a tank or surface impoundment, used to separate oil from water. An oil-water separator consists of not only the separation unit but also the forebay and other separator basins, skimmers, weirs, grit chambers, sludge hoppers, and bar screens that are located directly after the individual drain system and prior to additional treatment units such as an air flotation unit, clarifier, or biological treatment unit. Examples of an oil-water separator include an API separator, parallel-plate interceptor, and corrugated-plate interceptor with the associated ancillary equipment.

Petroleum refinery means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through the distillation of petroleum, or through the redistillation, cracking, or reforming of unfinished petroleum derivatives.

Petroleum means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

Point of waste generation means the location where the waste stream exits the process unit component or storage tank prior to handling or treatment in an operation that is not an integral part of the production process, or in the case of waste management units that generate new wastes after treatment, the location where the waste stream exits the waste management unit component.

Process unit means equipment assembled and connected by pipes or ducts to produce intermediate or final products. A process unit can be operated independently if supplied with sufficient fuel or raw materials and sufficient product storage facilities.

Process unit turnaround means the shutting down of the operations of a process unit, the purging of the contents of the process unit, the maintenance or repair work, followed by restarting of the process.

Process unit turnaround waste means a waste that is generated as a result of a process unit turnaround.

Process wastewater means water which comes in contact with benzene during manufacturing or processing operations conducted within a process unit. Process wastewater is not organic wastes, process fluids, product tank drawdown, cooling tower blowdown, steam trap condensate, or landfill leachate.

Process wastewater stream means a waste stream that contains only process wastewater.

Product tank means a stationary unit that is designed to contain an accumulation of materials that are fed to or produced by a process unit, and is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) which provide structural support.

Product tank drawdown means any material or mixture of materials discharged from a product tank for the purpose of removing water or other contaminants from the product tank.

Safety device means a closure device such as a pressure relief valve, frangible disc, fusible plug, or any other type of device which functions exclusively to prevent physical damage or permanent deformation to a unit or its air emission control equipment by venting gases or vapors directly to the atmosphere during unsafe conditions resulting from an unplanned, accidental, or emergency event. For the purpose of this subpart, a safety device is not used for routine venting of gases or vapors from the vapor headspace underneath a cover such as during filling of the unit or to adjust the pressure in this vapor headspace in response to normal daily diurnal ambient temperature fluctuations. A safety device is designed to remain in a closed position during normal operations and open only when the internal pressure, or another relevant

parameter, exceeds the device threshold setting applicable to the air emission control equipment as determined by the owner or operator based on manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials.

Segregated stormwater sewer system means a drain and collection system designed and operated for the sole purpose of collecting rainfall runoff at a facility, and which is segregated from all other individual drain systems.

Sewer line means a lateral, trunk line, branch line, or other enclosed conduit used to convey waste to a downstream waste management unit.

Slop oil means the floating oil and solids that accumulate on the surface of an oil-water separator.

Sour water stream means a stream that:

- (1) Contains ammonia or sulfur compounds (usually hydrogen sulfide) at concentrations of 10 ppm by weight or more;
- (2) Is generated from separation of water from a feed stock, intermediate, or product that contained ammonia or sulfur compounds; and
- (3) Requires treatment to remove the ammonia or sulfur compounds.

Sour water stripper means a unit that:

- (1) Is designed and operated to remove ammonia or sulfur compounds (usually hydrogen sulfide) from sour water streams;
- (2) Has the sour water streams transferred to the stripper through hard piping or other enclosed system; and
- (3) Is operated in such a manner that the offgases are sent to a sulfur recovery unit, processing unit, incinerator, flare, or other combustion device.

Surface impoundment means a waste management unit which is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials), which is designed to hold an accumulation of liquid wastes or waste containing free liquids, and which is not an injection well. Examples of surface impoundments are holding, storage, settling, and aeration pits, ponds, and lagoons.

Tank means a stationary waste management unit that is designed to contain an accumulation of waste and is constructed primarily of nonearthen materials (e.g., wood, concrete, steel, plastic) which provide structural support.

Treatment process means a stream stripping unit, thin-film evaporation unit, waste incinerator, or any other process used to comply with § 61.348 of this subpart.

Vapor-mounted seal means a foam-filled primary seal mounted continuously around the perimeter of a waste management unit so there is an annular vapor space underneath the seal. The annular vapor space is bounded by the bottom of the primary seal, the unit wall, the liquid surface, and the floating roof.

Waste means any material resulting from industrial, commercial, mining or agricultural operations, or from community activities that is discarded or is being accumulated, stored, or physically, chemically, thermally, or biologically treated prior to being discarded, recycled, or discharged.

Waste management unit means a piece of equipment, structure, or transport mechanism used in handling, storage, treatment, or disposal of waste. Examples of a waste management unit include a tank, surface impoundment, container, oil-water separator, individual drain system, steam stripping unit, thin-film evaporation unit, waste incinerator, and landfill.

Waste stream means the waste generated by a particular process unit, product tank, or waste management unit. The characteristics of the waste stream (e.g., flow rate, benzene concentration, water content) are determined at the point of waste generation. Examples of a waste stream include process wastewater, product tank drawdown, sludge and slop oil removed from waste management units, and landfill leachate.

Wastewater treatment system means any component, piece of equipment, or installation that receives, manages, or treats process wastewater, product tank drawdown, or landfill leachate prior to direct or indirect discharge in accordance with the National Pollutant Discharge Elimination System permit regulations under 40 CFR part 122. These systems typically include individual drain systems, oil-water separators, air flotation units, equalization tanks, and biological treatment units.

Water seal controls means a seal pot, p-leg trap, or other type of trap filled with water (e.g., flooded sewers that maintain water levels adequate to prevent air flow through the system) that creates a water barrier between the sewer line and the atmosphere. The water level of the seal must be maintained in the vertical leg of a drain in order to be considered a water seal.

[55 FR 8346, Mar. 7, 1990; 55 FR 12444, Apr. 3, 1990, as amended at 58 FR 3095, Jan. 7, 1993; 67 FR 68531, Nov. 12, 2002]

§ 61.342 Standards: General.

- (a) An owner or operator of a facility at which the total annual benzene quantity from facility waste is less than 10 megagrams per year (Mg/yr) (11 ton/yr) shall be exempt from the requirements of paragraphs (b) and (c) of this section. The total annual benzene quantity from facility waste is the sum of the annual benzene quantity for each waste stream at the facility that has a flow-weighted annual average water content greater than 10 percent or that is mixed with water, or other wastes, at any time and the mixture has an annual average water content greater than 10 percent. The benzene quantity in a waste stream is to be counted only once without multiple counting if other waste streams are mixed with or generated from the original waste stream. Other specific requirements for calculating the total annual benzene waste quantity are as follows:
 - (1) Wastes that are exempted from control under §§ 61.342(c)(2) and 61.342(c)(3) are included in the calculation of the total annual benzene quantity if they have an annual average water content greater than 10 percent, or if they are mixed with water or other wastes at any time and the mixture has an annual average water content greater than 10 percent.
 - (2) The benzene in a material subject to this subpart that is sold is included in the calculation of the total annual benzene quantity if the material has an annual average water content greater than 10 percent.
 - (3) Benzene in wastes generated by remediation activities conducted at the facility, such as the excavation of contaminated soil, pumping and treatment of groundwater, and the recovery of product from soil or groundwater, are not included in the calculation of total annual benzene quantity for that facility. If the facility's total annual benzene quantity is 10 Mg/yr (11 ton/yr) or more, wastes generated by remediation activities are subject to the requirements of paragraphs (c) through (h) of this section. If the facility is managing remediation waste generated offsite, the benzene in this waste shall be included in the calculation of total annual benzene quantity in facility waste, if the

waste streams have an annual average water content greater than 10 percent, or if they are mixed with water or other wastes at any time and the mixture has an annual average water content greater than 10 percent.

- (4) The total annual benzene quantity is determined based upon the quantity of benzene in the waste before any waste treatment occurs to remove the benzene except as specified in § 61.355(c)(1)(i) (A) through (C).

- (b) Each owner or operator of a facility at which the total annual benzene quantity from facility waste is equal to or greater than 10 Mg/yr (11 ton/yr) as determined in paragraph (a) of this section shall be in compliance with the requirements of paragraphs (c) through (h) of this section no later than 90 days following the effective date, unless a waiver of compliance has been obtained under § 61.11, or by the initial startup for a new source with an initial startup after the effective date.

- (1) The owner or operator of an existing source unable to comply with the rule within the required time may request a waiver of compliance under § 61.10.
- (2) As part of the waiver application, the owner or operator shall submit to the Administrator a plan under § 61.10(b)(3) that is an enforceable commitment to obtain environmental benefits to mitigate the benzene emissions that result from extending the compliance date. The plan shall include the following information:
 - (i) A description of the method of compliance, including the control approach, schedule for installing controls, and quantity of the benzene emissions that result from extending the compliance date;
 - (ii) If the control approach involves a compliance strategy designed to obtain integrated compliance with multiple regulatory requirements, a description of the other regulations involved and their effective dates; and
 - (iii) A description of the actions to be taken at the facility to obtain mitigating environmental benefits, including how the benefits will be obtained, the schedule for these actions, and an estimate of the quantifiable benefits that directly result from these actions.

- (c) Each owner or operator of a facility at which the total annual benzene quantity from facility waste is equal to or greater than 10 Mg/yr (11 ton/yr) as determined in paragraph (a) of this section shall manage and treat the facility waste as follows:

- (1) For each waste stream that contains benzene, including (but not limited to) organic waste streams that contain less than 10 percent water and aqueous waste streams, even if the wastes are not discharged to an individual drain system, the owner or operator shall:
 - (i) Remove or destroy the benzene contained in the waste using a treatment process or wastewater treatment system that complies with the standards specified in § 61.348 of this subpart.
 - (ii) Comply with the standards specified in §§ 61.343 through 61.347 of this subpart for each waste management unit that receives or manages the waste stream prior to and during treatment of the waste stream in accordance with paragraph (c)(1)(i) of this section.

- (iii) Each waste management unit used to manage or treat waste streams that will be recycled to a process shall comply with the standards specified in §§ 61.343 through 61.347. Once the waste stream is recycled to a process, including to a tank used for the storage of production process feed, product, or product intermediates, unless this tank is used primarily for the storage of wastes, the material is no longer subject to paragraph (c) of this section.
- (2) A waste stream is exempt from paragraph (c)(1) of this section provided that the owner or operator demonstrates initially and, thereafter, at least once per year that the flow-weighted annual average benzene concentration for the waste stream is less than 10 ppmw as determined by the procedures specified in § 61.355(c)(2) or § 61.355(c)(3).
- (3) A waste stream is exempt from paragraph (c)(1) of this section provided that the owner or operator demonstrates initially and, thereafter, at least once per year that the conditions specified in either paragraph (c)(3)(i) or (c)(3)(ii) of this section are met.
 - (i) The waste stream is process wastewater that has a flow rate less than 0.02 liters per minute (0.005 gallons per minute) or an annual wastewater quantity of less than 10 Mg/yr (11 ton/yr); or
 - (ii) All of the following conditions are met:
 - (A) The owner or operator does not choose to exempt process wastewater under paragraph (c)(3)(i) of this section,
 - (B) The total annual benzene quantity in all waste streams chosen for exemption in paragraph (c)(3)(ii) of this section does not exceed 2.0 Mg/yr (2.2 ton/yr) as determined in the procedures in § 61.355(j), and
 - (C) The total annual benzene quantity in a waste stream chosen for exemption, including process unit turnaround waste, is determined for the year in which the waste is generated.
- (d) As an alternative to the requirements specified in paragraphs (c) and (e) of this section, an owner or operator of a facility at which the total annual benzene quantity from facility waste is equal to or greater than 10 Mg/yr (11 ton/yr) as determined in paragraph (a) of this section may elect to manage and treat the facility waste as follows:
 - (1) The owner or operator shall manage and treat facility waste other than process wastewater in accordance with the requirements of paragraph (c)(1) of this section.
 - (2) The owner or operator shall manage and treat process wastewater in accordance with the following requirements:
 - (i) Process wastewater shall be treated to achieve a total annual benzene quantity from facility process wastewater less than 1 Mg/yr (1.1 ton/yr). Total annual benzene from facility process wastewater shall be determined by adding together the annual benzene quantity at the point of waste generation for each untreated process wastewater stream plus the annual benzene quantity exiting the treatment process for each process wastewater stream treated in accordance with the requirements of paragraph (c)(1)(i) of this section.
 - (ii) Each treated process wastewater stream identified in paragraph (d)(2)(i) of this section shall be managed and treated in accordance with paragraph (c)(1) of this section.
 - (iii) Each untreated process wastewater stream identified in paragraph (d)(2)(i) of this section is exempt from the requirements of paragraph (c)(1) of this section.

- (e) As an alternative to the requirements specified in paragraphs (c) and (d) of this section, an owner or operator of a facility at which the total annual benzene quantity from facility waste is equal to or greater than 10 Mg/yr (11 ton/yr) as determined in paragraph (a) of this section may elect to manage and treat the facility waste as follows:
 - (1) The owner or operator shall manage and treat facility waste with a flow-weighted annual average water content of less than 10 percent in accordance with the requirements of paragraph (c)(1) of this section; and
 - (2) The owner or operator shall manage and treat facility waste (including remediation and process unit turnaround waste) with a flow-weighted annual average water content of 10 percent or greater, on a volume basis as total water, and each waste stream that is mixed with water or wastes at any time such that the resulting mixture has an annual water content greater than 10 percent, in accordance with the following:
 - (i) The benzene quantity for the wastes described in paragraph (e)(2) of this section must be equal to or less than 6.0 Mg/yr (6.6 ton/yr), as determined in § 61.355(k). Wastes as described in paragraph (e)(2) of this section that are transferred offsite shall be included in the determination of benzene quantity as provided in § 61.355(k). The provisions of paragraph (f) of this section shall not apply to any owner or operator who elects to comply with the provisions of paragraph (e) of this section.
 - (ii) The determination of benzene quantity for each waste stream defined in paragraph (e)(2) of this section shall be made in accordance with § 61.355(k).
- (f) Rather than treating the waste onsite, an owner or operator may elect to comply with paragraph (c)(1)(i) of this section by transferring the waste offsite to another facility where the waste is treated in accordance with the requirements of paragraph (c)(1)(i) of this section. The owner or operator transferring the waste shall:
 - (1) Comply with the standards specified in §§ 61.343 through 61.347 of this subpart for each waste management unit that receives or manages the waste prior to shipment of the waste offsite.
 - (2) Include with each offsite waste shipment a notice stating that the waste contains benzene which is required to be managed and treated in accordance with the provisions of this subpart.
- (g) Compliance with this subpart will be determined by review of facility records and results from tests and inspections using methods and procedures specified in § 61.355 of this subpart.
- (h) Permission to use an alternative means of compliance to meet the requirements of §§ 61.342 through 61.352 of this subpart may be granted by the Administrator as provided in § 61.353 of this subpart.

[55 FR 8346, Mar. 7, 1990, as amended at 58 FR 3095, Jan. 7, 1993; 65 FR 62159, 62160, Oct. 17, 2000]

§ 61.343 Standards: Tanks.

- (a) Except as provided in paragraph (b) of this section and in § 61.351, the owner or operator must meet the standards in paragraph (a)(1) or (2) of this section for each tank in which the waste stream is placed in accordance with § 61.342 (c)(1)(ii). The standards in this section apply to the treatment and storage of the waste stream in a tank, including dewatering.
 - (1) The owner or operator shall install, operate, and maintain a fixed-roof and closed-vent system that routes all organic vapors vented from the tank to a control device.

(i) The fixed-roof shall meet the following requirements:

- (A) The cover and all openings (e.g., access hatches, sampling ports, and gauge wells) shall be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in § 61.355(h) of this subpart.
- (B) Each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that waste is in the tank except when it is necessary to use the opening for waste sampling or removal, or for equipment inspection, maintenance, or repair.
- (C) If the cover and closed-vent system operate such that the tank is maintained at a pressure less than atmospheric pressure, then paragraph (a)(1)(i)(B) of this section does not apply to any opening that meets all of the following conditions:
 - (1) The purpose of the opening is to provide dilution air to reduce the explosion hazard;
 - (2) The opening is designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in § 61.355(h); and
 - (3) The pressure is monitored continuously to ensure that the pressure in the tank remains below atmospheric pressure.

(ii) The closed-vent system and control device shall be designed and operated in accordance with the requirements of § 61.349 of this subpart.

(2) The owner or operator must install, operate, and maintain an enclosure and closed-vent system that routes all organic vapors vented from the tank, located inside the enclosure, to a control device in accordance with the requirements specified in paragraph (e) of this section.

(b) For a tank that meets all the conditions specified in paragraph (b)(1) of this section, the owner or operator may elect to comply with paragraph (b)(2) of this section as an alternative to the requirements specified in paragraph (a)(1) of this section.

(1) The waste managed in the tank complying with paragraph (b)(2) of this section shall meet all of the following conditions:

(i) Each waste stream managed in the tank must have a flow-weighted annual average water content less than or equal to 10 percent water, on a volume basis as total water.

(ii) The waste managed in the tank either:

- (A) Has a maximum organic vapor pressure less than 5.2 kilopascals (kPa) (0.75 pounds per square inch (psi));
- (B) Has a maximum organic vapor pressure less than 27.6 kPa (4.0 psi) and is managed in a tank having design capacity less than 151 m³ (40,000 gal); or
- (C) Has a maximum organic vapor pressure less than 76.6 kPa (11.1 psi) and is managed in a tank having a design capacity less than 75 m³ (20,000 gal).

(2) The owner or operator shall install, operate, and maintain a fixed roof as specified in paragraph (a)(1)(i).

- (3) For each tank complying with paragraph (b) of this section, one or more devices which vent directly to the atmosphere may be used on the tank provided each device remains in a closed, sealed position during normal operations except when the device needs to open to prevent physical damage or permanent deformation of the tank or cover resulting from filling or emptying the tank, diurnal temperature changes, atmospheric pressure changes or malfunction of the unit in accordance with good engineering and safety practices for handling flammable, explosive, or other hazardous materials.
- (c) Each fixed-roof, seal, access door, and all other openings shall be checked by visual inspection initially and quarterly thereafter to ensure that no cracks or gaps occur and that access doors and other openings are closed and gasketed properly.
- (d) Except as provided in § 61.350 of this subpart, when a broken seal or gasket or other problem is identified, or when detectable emissions are measured, first efforts at repair shall be made as soon as practicable, but not later than 45 calendar days after identification.
- (e) Each owner or operator who controls air pollutant emissions by using an enclosure vented through a closed-vent system to a control device must meet the requirements specified in paragraphs (e)(1) through (4) of this section.
 - (1) The tank must be located inside a total enclosure. The enclosure must be designed and operated in accordance with the criteria for a permanent total enclosure as specified in "Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure" in 40 CFR 52.741, appendix B. The enclosure may have permanent or temporary openings to allow worker access; passage of material into or out of the enclosure by conveyor, vehicles, or other mechanical means; entry of permanent mechanical or electrical equipment; or direct airflow into the enclosure. The owner or operator must perform the verification procedure for the enclosure as specified in section 5.0 of Procedure T initially when the enclosure is first installed and, thereafter, annually. A facility that has conducted an initial compliance demonstration and that performs annual compliance demonstrations in accordance with the requirements for Tank Level 2 control requirements 40 CFR 264.1084(i) or 40 CFR 265(i) is not required to make repeat demonstrations of initial and continuous compliance for the purposes of this subpart.
 - (2) The enclosure must be vented through a closed-vent system to a control device that is designed and operated in accordance with the standards for control devices specified in § 61.349.
 - (3) Safety devices, as defined in this subpart, may be installed and operated as necessary on any enclosure, closed-vent system, or control device used to comply with the requirements of paragraphs (e)(1) and (2) of this section.
 - (4) The closed-vent system must be designed and operated in accordance with the requirements of § 61.349.

[55 FR 8346, Mar. 7, 1990, as amended at 55 FR 18331, May 2, 1990; 58 FR 3096, Jan. 7, 1993; 67 FR 68532, Nov. 12, 2002; 68 FR 6082, Feb. 6, 2003; 68 FR 67935, Dec. 4, 2003]

§ 61.344 Standards: Surface impoundments.

- (a) The owner or operator shall meet the following standards for each surface impoundment in which waste is placed in accordance with § 61.342(c)(1)(ii) of this subpart:

- (1) The owner or operator shall install, operate, and maintain on each surface impoundment a cover (e.g., air-supported structure or rigid cover) and closed-vent system that routes all organic vapors vented from the surface impoundment to a control device.
 - (i) The cover shall meet the following requirements:
 - (A) The cover and all openings (e.g., access hatches, sampling ports, and gauge wells) shall be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, initially and thereafter at least once per year by the methods specified in § 61.355(h) of this subpart.
 - (B) Each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that waste is in the surface impoundment except when it is necessary to use the opening for waste sampling or removal, or for equipment inspection, maintenance, or repair.
 - (C) If the cover and closed-vent system operate such that the enclosure of the surface impoundment is maintained at a pressure less than atmospheric pressure, then paragraph (a)(1)(i)(B) of this section does not apply to any opening that meets all of the following conditions:
 - (1) The purpose of the opening is to provide dilution air to reduce the explosion hazard;
 - (2) The opening is designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in § 61.355(h) of this subpart; and
 - (3) The pressure is monitored continuously to ensure that the pressure in the enclosure of the surface impoundment remains below atmospheric pressure.
 - (D) The cover shall be used at all times that waste is placed in the surface impoundment except during removal of treatment residuals in accordance with 40 CFR 268.4 or closure of the surface impoundment in accordance with 40 CFR 264.228. (Note: the treatment residuals generated by these activities may be subject to the requirements of this part.)
 - (ii) The closed-vent system and control device shall be designed and operated in accordance with § 61.349 of this subpart.
- (b) Each cover seal, access hatch, and all other openings shall be checked by visual inspection initially and quarterly thereafter to ensure that no cracks or gaps occur and that access hatches and other openings are closed and gasketed properly.
- (c) Except as provided in § 61.350 of this subpart, when a broken seal or gasket or other problem is identified, or when detectable emissions are measured, first efforts at repair shall be made as soon as practicable, but not later than 15 calendar days after identification.

[55 FR 8346, Mar. 7, 1990, as amended at 58 FR 3097, Jan. 7, 1993]

§ 61.345 Standards: Containers.

- (a) The owner or operator shall meet the following standards for each container in which waste is placed in accordance with § 61.342(c)(1)(ii) of this subpart:

- (1) The owner or operator shall install, operate, and maintain a cover on each container used to handle, transfer, or store waste in accordance with the following requirements:
 - (i) The cover and all openings (e.g., bungs, hatches, and sampling ports) shall be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, initially and thereafter at least once per year by the methods specified in § 61.355(h) of this subpart.
 - (ii) Except as provided in paragraph (a)(4) of this section, each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that waste is in the container except when it is necessary to use the opening for waste loading, removal, inspection, or sampling.
- (2) When a waste is transferred into a container by pumping, the owner or operator shall perform the transfer using a submerged fill pipe. The submerged fill pipe outlet shall extend to within two fill pipe diameters of the bottom of the container while the container is being loaded. During loading of the waste, the cover shall remain in place and all openings shall be maintained in a closed, sealed position except for those openings required for the submerged fill pipe, those openings required for venting of the container to prevent physical damage or permanent deformation of the container or cover, and any openings complying with paragraph (a)(4) of this section.
- (3) Treatment of a waste in a container, including aeration, thermal or other treatment, must be performed by the owner or operator in a manner such that while the waste is being treated the container meets the standards specified in paragraphs (a)(3)(i) through (iii) of this section, except for covers and closed-vent systems that meet the requirements in paragraph (a)(4) of this section.
 - (i) The owner or operator must either:
 - (A) Vent the container inside a total enclosure which is exhausted through a closed-vent system to a control device in accordance with the requirements of paragraphs (a)(3)(ii)(A) and (B) of this section; or
 - (B) Vent the covered or closed container directly through a closed-vent system to a control device in accordance with the requirements of paragraphs (a)(3)(ii)(B) and (C) of this section.
 - (ii) The owner or operator must meet the following requirements, as applicable to the type of air emission control equipment selected by the owner or operator:
 - (A) The total enclosure must be designed and operated in accordance with the criteria for a permanent total enclosure as specified in section 5 of the "Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure" in 40 CFR 52.741, appendix B. The enclosure may have permanent or temporary openings to allow worker access; passage of containers through the enclosure by conveyor or other mechanical means; entry of permanent mechanical or electrical equipment; or direct airflow into the enclosure. The owner or operator must perform the verification procedure for the enclosure as specified in section 5.0 of "Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure" initially when the enclosure is first installed and, thereafter, annually. A facility that has conducted an initial compliance demonstration and that performs annual compliance demonstrations in accordance with the Container Level

3 control requirements in 40 CFR 264.1086(e)(2)(i) or 40 CFR 265.1086(e)(2)(i) is not required to make repeat demonstrations of initial and continuous compliance for the purposes of this subpart.

- (B) The closed-vent system and control device must be designed and operated in accordance with the requirements of § 61.349.
- (C) For a container cover, the cover and all openings (e.g., doors, hatches) must be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, initially and thereafter at least once per year by the methods specified in § 61.355(h).
- (iii) Safety devices, as defined in this subpart, may be installed and operated as necessary on any container, enclosure, closed-vent system, or control device used to comply with the requirements of paragraph (a)(3)(i) of this section.
- (4) If the cover and closed-vent system operate such that the container is maintained at a pressure less than atmospheric pressure, the owner or operator may operate the system with an opening that is not sealed and kept closed at all times if the following conditions are met:
 - (i) The purpose of the opening is to provide dilution air to reduce the explosion hazard;
 - (ii) The opening is designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by methods specified in § 61.355(h); and
 - (iii) The pressure is monitored continuously to ensure that the pressure in the container remains below atmospheric pressure.
- (b) Each cover and all openings shall be visually inspected initially and quarterly thereafter to ensure that they are closed and gasketed properly.
- (c) Except as provided in § 61.350 of this subpart, when a broken seal or gasket or other problem is identified, first efforts at repair shall be made as soon as practicable, but not later than 15 calendar days after identification.

[55 FR 8346, Mar. 7, 1990, as amended at 58 FR 3097, Jan. 7, 1993; 67 FR 68532, Nov. 12, 2002; 68 FR 67936, Dec. 4, 2003]

§ 61.346 Standards: Individual drain systems.

- (a) Except as provided in paragraph (b) of this section, the owner or operator shall meet the following standards for each individual drain system in which waste is placed in accordance with § 61.342(c)(1)(ii) of this subpart:
 - (1) The owner or operator shall install, operate, and maintain on each drain system opening a cover and closed-vent system that routes all organic vapors vented from the drain system to a control device.
 - (i) The cover shall meet the following requirements:
 - (A) The cover and all openings (e.g., access hatches, sampling ports) shall be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, initially and thereafter at least once per year by the methods specified in § 61.355(h) of this subpart.

- (B) Each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that waste is in the drain system except when it is necessary to use the opening for waste sampling or removal, or for equipment inspection, maintenance, or repair.
- (C) If the cover and closed-vent system operate such that the individual drain system is maintained at a pressure less than atmospheric pressure, then paragraph (a)(1)(i)(B) of this section does not apply to any opening that meets all of the following conditions:
 - (1) The purpose of the opening is to provide dilution air to reduce the explosion hazard;
 - (2) The opening is designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in § 61.355(h); and
 - (3) The pressure is monitored continuously to ensure that the pressure in the individual drain system remains below atmospheric pressure.
- (ii) The closed-vent system and control device shall be designed and operated in accordance with § 61.349 of this subpart.
- (2) Each cover seal, access hatch, and all other openings shall be checked by visual inspection initially and quarterly thereafter to ensure that no cracks or gaps occur and that access hatches and other openings are closed and gasketed properly.
- (3) Except as provided in § 61.350 of this subpart, when a broken seal or gasket or other problem is identified, or when detectable emissions are measured, first efforts at repair shall be made as soon as practicable, but not later than 15 calendar days after identification.
- (b) As an alternative to complying with paragraph (a) of this section, an owner or operator may elect to comply with the following requirements:
 - (1) Each drain shall be equipped with water seal controls or a tightly sealed cap or plug.
 - (2) Each junction box shall be equipped with a cover and may have a vent pipe. The vent pipe shall be at least 90 cm (3 ft) in length and shall not exceed 10.2 cm (4 in) in diameter.
 - (i) Junction box covers shall have a tight seal around the edge and shall be kept in place at all times, except during inspection and maintenance.
 - (ii) One of the following methods shall be used to control emissions from the junction box vent pipe to the atmosphere:
 - (A) Equip the junction box with a system to prevent the flow of organic vapors from the junction box vent pipe to the atmosphere during normal operation. An example of such a system includes use of water seal controls on the junction box. A flow indicator shall be installed, operated, and maintained on each junction box vent pipe to ensure that organic vapors are not vented from the junction box to the atmosphere during normal operation.
 - (B) Connect the junction box vent pipe to a closed-vent system and control device in accordance with § 61.349 of this subpart.
 - (3) Each sewer line shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visual gaps or cracks in joints, seals, or other emission interfaces.

- (4) Equipment installed in accordance with paragraphs (b)(1), (b)(2), or (b)(3) of this section shall be inspected as follows:
 - (i) Each drain using water seal controls shall be checked by visual or physical inspection initially and thereafter quarterly for indications of low water levels or other conditions that would reduce the effectiveness of water seal controls.
 - (ii) Each drain using a tightly sealed cap or plug shall be visually inspected initially and thereafter quarterly to ensure caps or plugs are in place and properly installed.
 - (iii) Each junction box shall be visually inspected initially and thereafter quarterly to ensure that the cover is in place and to ensure that the cover has a tight seal around the edge.
 - (iv) The unburied portion of each sewer line shall be visually inspected initially and thereafter quarterly for indication of cracks, gaps, or other problems that could result in benzene emissions.
- (5) Except as provided in § 61.350 of this subpart, when a broken seal, gap, crack or other problem is identified, first efforts at repair shall be made as soon as practicable, but not later than 15 calendar days after identification.

[55 FR 8346, Mar. 7, 1990, as amended at 55 FR 37231, Sept. 10, 1990; 58 FR 3097, Jan. 7, 1993]

§ 61.347 Standards: Oil-water separators.

- (a) Except as provided in § 61.352 of this subpart, the owner or operator shall meet the following standards for each oil-water separator in which waste is placed in accordance with § 61.342(c)(1)(ii) of this subpart:
 - (1) The owner or operator shall install, operate, and maintain a fixed-roof and closed-vent system that routes all organic vapors vented from the oil-water separator to a control device.
 - (i) The fixed-roof shall meet the following requirements:
 - (A) The cover and all openings (e.g., access hatches, sampling ports, and gauge wells) shall be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in § 61.355(h) of this subpart.
 - (B) Each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that waste is in the oil-water separator except when it is necessary to use the opening for waste sampling or removal, or for equipment inspection, maintenance, or repair.
 - (C) If the cover and closed-vent system operate such that the oil-water separator is maintained at a pressure less than atmospheric pressure, then paragraph (a)(1)(i)(B) of this section does not apply to any opening that meets all of the following conditions:
 - (1) The purpose of the opening is to provide dilution air to reduce the explosion hazard;
 - (2) The opening is designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in § 61.355(h); and

- (3) The pressure is monitored continuously to ensure that the pressure in the oil-water separator remains below atmospheric pressure.
- (ii) The closed-vent system and control device shall be designed and operated in accordance with the requirements of § 61.349 of this subpart.
- (b) Each cover seal, access hatch, and all other openings shall be checked by visual inspection initially and quarterly thereafter to ensure that no cracks or gaps occur between the cover and oil-water separator wall and that access hatches and other openings are closed and gasketed properly.
- (c) Except as provided in § 61.350 of this subpart, when a broken seal or gasket or other problem is identified, or when detectable emissions are measured, first efforts at repair shall be made as soon as practicable, but not later than 15 calendar days after identification.

[55 FR 8346, Mar. 7, 1990, as amended at 58 FR 3098, Jan. 7, 1993]

§ 61.348 Standards: Treatment processes.

- (a) Except as provided in paragraph (a)(5) of this section, the owner or operator shall treat the waste stream in accordance with the following requirements:
 - (1) The owner or operator shall design, install, operate, and maintain a treatment process that either:
 - (i) Removes benzene from the waste stream to a level less than 10 parts per million by weight (ppmw) on a flow-weighted annual average basis,
 - (ii) Removes benzene from the waste stream by 99 percent or more on a mass basis, or
 - (iii) Destroys benzene in the waste stream by incinerating the waste in a combustion unit that achieves a destruction efficiency of 99 percent or greater for benzene.
 - (2) Each treatment process complying with paragraphs (a)(1)(i) or (a)(1)(ii) of this section shall be designed and operated in accordance with the appropriate waste management unit standards specified in §§ 61.343 through 61.347 of this subpart. For example, if a treatment process is a tank, then the owner or operator shall comply with § 61.343 of this subpart.
 - (3) For the purpose of complying with the requirements specified in paragraph (a)(1)(i) of this section, the intentional or unintentional reduction in the benzene concentration of a waste stream by dilution of the waste stream with other wastes or materials is not allowed.
 - (4) An owner or operator may aggregate or mix together individual waste streams to create a combined waste stream for the purpose of facilitating treatment of waste to comply with the requirements of paragraph (a)(1) of this section except as provided in paragraph (a)(5) of this section.
 - (5) If an owner or operator aggregates or mixes any combination of process wastewater, product tank drawdown, or landfill leachate subject to § 61.342(c)(1) of this subpart together with other waste streams to create a combined waste stream for the purpose of facilitating management or treatment of waste in a wastewater treatment system, then the wastewater treatment system shall be operated in accordance with paragraph (b) of this section. These provisions apply to above-ground wastewater treatment systems as well as those that are at or below ground level.
- (b) Except for facilities complying with § 61.342(e), the owner or operator that aggregates or mixes individual waste streams as defined in paragraph (a)(5) of this section for management and treatment in a wastewater treatment system shall comply with the following requirements:

- (1) The owner or operator shall design and operate each waste management unit that comprises the wastewater treatment system in accordance with the appropriate standards specified in §§ 61.343 through 61.347 of this subpart.
- (2) The provisions of paragraph (b)(1) of this section do not apply to any waste management unit that the owner or operator demonstrates to meet the following conditions initially and, thereafter, at least once per year:
 - (i) The benzene content of each waste stream entering the waste management unit is less than 10 ppmw on a flow-weighted annual average basis as determined by the procedures specified in § 61.355(c) of this subpart; and
 - (ii) The total annual benzene quantity contained in all waste streams managed or treated in exempt waste management units comprising the facility wastewater treatment systems is less than 1 Mg/yr (1.1 ton/yr). For this determination, total annual benzene quantity shall be calculated as follows:
 - (A) The total annual benzene quantity shall be calculated as the sum of the individual benzene quantities determined at each location where a waste stream first enters an exempt waste management unit. The benzene quantity discharged from an exempt waste management unit shall not be included in this calculation.
 - (B) The annual benzene quantity in a waste stream managed or treated in an enhanced biodegradation unit shall not be included in the calculation of the total annual benzene quantity, if the enhanced biodegradation unit is the first exempt unit in which the waste is managed or treated. A unit shall be considered enhanced biodegradation if it is a suspended-growth process that generates biomass, uses recycled biomass, and periodically removes biomass from the process. An enhanced biodegradation unit typically operates at a food-to-microorganism ratio in the range of 0.05 to 1.0 kg of biological oxygen demand per kg of biomass per day, a mixed liquor suspended solids ratio in the range of 1 to 8 grams per liter (0.008 to 0.7 pounds per liter), and a residence time in the range of 3 to 36 hours.
- (c) The owner and operator shall demonstrate that each treatment process or wastewater treatment system unit, except as provided in paragraph (d) of this section, achieves the appropriate conditions specified in paragraphs (a) or (b) of this section in accordance with the following requirements:
 - (1) Engineering calculations in accordance with requirements specified in § 61.356(e) of this subpart; or
 - (2) Performance tests conducted using the test methods and procedures that meet the requirements specified in § 61.355 of this subpart.
- (d) A treatment process or waste stream is in compliance with the requirements of this subpart and exempt from the requirements of paragraph (c) of this section provided that the owner or operator documents that the treatment process or waste stream is in compliance with other regulatory requirements as follows:
 - (1) The treatment process is a hazardous waste incinerator for which the owner or operator has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 264, subpart O;

- (2) The treatment process is an industrial furnace or boiler burning hazardous waste for energy recovery for which the owner or operator has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 266, subpart D;
 - (3) The waste stream is treated by a means or to a level that meets benzene-specific treatment standards in accordance with the Land Disposal Restrictions under 40 CFR part 268, and the treatment process is designed and operated with a closed-vent system and control device meeting the requirements of § 61.349 of this subpart;
 - (4) The waste stream is treated by a means or to a level that meets benzene-specific effluent limitations or performance standards in accordance with the Effluent Guidelines and Standards under 40 CFR parts 401-464, and the treatment process is designed and operated with a closed-vent system and control device meeting the requirements of § 61.349 of this subpart; or
 - (5) The waste stream is discharged to an underground injection well for which the owner or operator has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 122.
- (e) Except as specified in paragraph (e)(3) of this section, if the treatment process or wastewater treatment system unit has any openings (e.g., access doors, hatches, etc.), all such openings shall be sealed (e.g., gasketed, latched, etc.) and kept closed at all times when waste is being treated, except during inspection and maintenance.
- (1) Each seal, access door, and all other openings shall be checked by visual inspections initially and quarterly thereafter to ensure that no cracks or gaps occur and that openings are closed and gasketed properly.
 - (2) Except as provided in § 61.350 of this subpart, when a broken seal or gasket or other problem is identified, first efforts at repair shall be made as soon as practicable, but not later than 15 calendar days after identification.
 - (3) If the cover and closed-vent system operate such that the treatment process and wastewater treatment system unit are maintained at a pressure less than atmospheric pressure, the owner or operator may operate the system with an opening that is not sealed and kept closed at all times if the following conditions are met:
 - (i) The purpose of the opening is to provide dilution air to reduce the explosion hazard;
 - (ii) The opening is designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in § 61.355(h); and
 - (iii) The pressure is monitored continuously to ensure that the pressure in the treatment process and wastewater treatment system unit remain below atmospheric pressure.
- (f) Except for treatment processes complying with paragraph (d) of this section, the Administrator may request at any time an owner or operator demonstrate that a treatment process or wastewater treatment system unit meets the applicable requirements specified in paragraphs (a) or (b) of this section by conducting a performance test using the test methods and procedures as required in § 61.355 of this subpart.

- (g) The owner or operator of a treatment process or wastewater treatment system unit that is used to comply with the provisions of this section shall monitor the unit in accordance with the applicable requirements in § 61.354 of this subpart.

[55 FR 8346, Mar. 7, 1990, as amended at 55 FR 37231, Sept. 10, 1990; 58 FR 3098, Jan. 7, 1993; 65 FR 62160, Oct. 17, 2000]

§ 61.349 Standards: Closed-vent systems and control devices.

- (a) For each closed-vent system and control device used to comply with standards in accordance with §§ 61.343 through 61.348 of this subpart, the owner or operator shall properly design, install, operate, and maintain the closed-vent system and control device in accordance with the following requirements:
- (1) The closed-vent system shall:
- (i) Be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in § 61.355(h) of this subpart.
 - (ii) Vent systems that contain any bypass line that could divert the vent stream away from a control device used to comply with the provisions of this subpart shall install, maintain, and operate according to the manufacturer's specifications a flow indicator that provides a record of vent stream flow away from the control device at least once every 15 minutes, except as provided in paragraph (a)(1)(ii)(B) of this section.
 - (A) The flow indicator shall be installed at the entrance to any bypass line that could divert the vent stream away from the control device to the atmosphere.
 - (B) Where the bypass line valve is secured in the closed position with a car-seal or a lock-and-key type configuration, a flow indicator is not required.
 - (iii) All gauging and sampling devices shall be gas-tight except when gauging or sampling is taking place.
 - (iv) For each closed-vent system complying with paragraph (a) of this section, one or more devices which vent directly to the atmosphere may be used on the closed-vent system provided each device remains in a closed, sealed position during normal operations except when the device needs to open to prevent physical damage or permanent deformation of the closed-vent system resulting from malfunction of the unit in accordance with good engineering and safety practices for handling flammable, explosive, or other hazardous materials.
- (2) The control device shall be designed and operated in accordance with the following conditions:
- (i) An enclosed combustion device (e.g., a vapor incinerator, boiler, or process heater) shall meet one of the following conditions:
 - (A) Reduce the organic emissions vented to it by 95 weight percent or greater;
 - (B) Achieve a total organic compound concentration of 20 ppmv (as the sum of the concentrations for individual compounds using Method 18) on a dry basis corrected to 3 percent oxygen; or
 - (C) Provide a minimum residence time of 0.5 seconds at a minimum temperature of 760 °C (1,400 °F). If a boiler or process heater issued as the control device, then the vent stream shall be introduced into the flame zone of the boiler or process heater.

- (ii) A vapor recovery system (e.g., a carbon adsorption system or a condenser) shall recover or control the organic emissions vented to it with an efficiency of 95 weight percent or greater, or shall recover or control the benzene emissions vented to it with an efficiency of 98 weight percent or greater.
- (iii) A flare shall comply with the requirements of 40 CFR 60.18.
- (iv) A control device other than those described in paragraphs (a)(2) (i) through (iii) of this section may be used provided that the following conditions are met:
 - (A) The device shall recover or control the organic emissions vented to it with an efficiency of 95 weight percent or greater, or shall recover or control the benzene emissions vented to it with an efficiency of 98 weight percent or greater.
 - (B) The owner or operator shall develop test data and design information that documents the control device will achieve an emission control efficiency of either 95 percent or greater for organic compounds or 98 percent or greater for benzene.
 - (C) The owner or operator shall identify:
 - (1) The critical operating parameters that affect the emission control performance of the device;
 - (2) The range of values of these operating parameters that ensure the emission control efficiency specified in paragraph (a)(2)(iv)(A) of this section is maintained during operation of the device; and
 - (3) How these operating parameters will be monitored to ensure the proper operation and maintenance of the device.
 - (D) The owner or operator shall submit the information and data specified in paragraphs (a)(2)(iv) (B) and (C) of this section to the Administrator prior to operation of the alternative control device.
 - (E) The Administrator will determine, based on the information submitted under paragraph (a)(2)(iv)(D) of this section, if the control device subject to paragraph (a)(2)(iv) of this section meets the requirements of § 61.349. The control device subject to paragraph (a)(2)(iv) of this section may be operated prior to receiving approval from the Administrator. However, if the Administrator determines that the control device does not meet the requirements of § 61.349, the facility may be subject to enforcement action beginning from the time the control device began operation.
- (b) Each closed-vent system and control device used to comply with this subpart shall be operated at all times when waste is placed in the waste management unit vented to the control device except when maintenance or repair of the waste management unit cannot be completed without a shutdown of the control device.
- (c) An owner and operator shall demonstrate that each control device, except for a flare, achieves the appropriate conditions specified in paragraph (a)(2) of this section by using one of the following methods:
 - (1) Engineering calculations in accordance with requirements specified in § 61.356(f) of this subpart; or
 - (2) Performance tests conducted using the test methods and procedures that meet the requirements specified in § 61.355 of this subpart.

- (d) An owner or operator shall demonstrate compliance of each flare in accordance with paragraph (a)(2)(iii) of this section.
- (e) The Administrator may request at any time an owner or operator demonstrate that a control device meets the applicable conditions specified in paragraph (a)(2) of this section by conducting a performance test using the test methods and procedures as required in § 61.355, and for control devices subject to paragraph (a)(2)(iv) of this section, the Administrator may specify alternative test methods and procedures, as appropriate.
- (f) Each closed-vent system and control device shall be visually inspected initially and quarterly thereafter. The visual inspection shall include inspection of ductwork and piping and connections to covers and control devices for evidence of visible defects such as holes in ductwork or piping and loose connections.
- (g) Except as provided in § 61.350 of this subpart, if visible defects are observed during an inspection, or if other problems are identified, or if detectable emissions are measured, a first effort to repair the closed-vent system and control device shall be made as soon as practicable but no later than 5 calendar days after detection. Repair shall be completed no later than 15 calendar days after the emissions are detected or the visible defect is observed.
- (h) The owner or operator of a control device that is used to comply with the provisions of this section shall monitor the control device in accordance with § 61.354(c) of this subpart.

[55 FR 8346, Mar. 7, 1990; 55 FR 12444, Apr. 3, 1990, as amended at 55 FR 37231, Sept. 10, 1990; 58 FR 3098, Jan. 7, 1993; 65 FR 62160, Oct. 17, 2000]

§ 61.350 Standards: Delay of repair.

- (a) Delay of repair of facilities or units that are subject to the provisions of this subpart will be allowed if the repair is technically impossible without a complete or partial facility or unit shutdown.
- (b) Repair of such equipment shall occur before the end of the next facility or unit shutdown.

§ 61.351 Alternative standards for tanks.

- (a) As an alternative to the standards for tanks specified in § 61.343 of this subpart, an owner or operator may elect to comply with one of the following:
 - (1) A fixed roof and internal floating roof meeting the requirements in 40 CFR 60.112b(a)(1);
 - (2) An external floating roof meeting the requirements of 40 CFR 60.112b (a)(2); or
 - (3) An alternative means of emission limitation as described in 40 CFR 60.114b.
- (b) If an owner or operator elects to comply with the provisions of this section, then the owner or operator is exempt from the provisions of § 61.343 of this subpart applicable to the same facilities.

[55 FR 8346, Mar. 7, 1990, as amended at 55 FR 37231, Sept. 10, 1990]

§ 61.352 Alternative standards for oil-water separators.

- (a) As an alternative to the standards for oil-water separators specified in § 61.347 of this subpart, an owner or operator may elect to comply with one of the following:

- (1) A floating roof meeting the requirements in 40 CFR 60.693-2(a); or
 - (2) An alternative means of emission limitation as described in 40 CFR 60.694.
- (b) For portions of the oil-water separator where it is infeasible to construct and operate a floating roof, such as over the weir mechanism, a fixed roof vented to a vapor control device that meets the requirements in §§ 61.347 and 61.349 of this subpart shall be installed and operated.
- (c) Except as provided in paragraph (b) of this section, if an owner or operator elects to comply with the provisions of this section, then the owner or operator is exempt from the provisions in § 61.347 of this subpart applicable to the same facilities.

§ 61.353 Alternative means of emission limitation.

- (a) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in benzene emissions at least equivalent to the reduction in benzene emissions from the source achieved by the applicable design, equipment, work practice, or operational requirements in §§ 61.342 through 61.349, the Administrator will publish in the FEDERAL REGISTER a notice permitting the use of the alternative means for purposes of compliance with that requirement. The notice may condition the permission on requirements related to the operation and maintenance of the alternative means.
- (b) Any notice under paragraph (a) of this section shall be published only after public notice and an opportunity for a hearing.
- (c) Any person seeking permission under this section shall collect, verify, and submit to the Administrator information showing that the alternative means achieves equivalent emission reductions.

[55 FR 8346, Mar. 7, 1990, as amended at 58 FR 3099, Jan. 7, 1993]

§ 61.354 Monitoring of operations.

- (a) Except for a treatment process or waste stream complying with § 61.348(d), the owner or operator shall monitor each treatment process or wastewater treatment system unit to ensure the unit is properly operated and maintained by one of the following monitoring procedures:
- (1) Measure the benzene concentration of the waste stream exiting the treatment process complying with § 61.348(a)(1)(i) at least once per month by collecting and analyzing one or more samples using the procedures specified in § 61.355(c)(3).
 - (2) Install, calibrate, operate, and maintain according to manufacturer's specifications equipment to continuously monitor and record a process parameter (or parameters) for the treatment process or wastewater treatment system unit that indicates proper system operation. The owner or operator shall inspect at least once each operating day the data recorded by the monitoring equipment (e.g., temperature monitor or flow indicator) to ensure that the unit is operating properly.
- (b) If an owner or operator complies with the requirements of § 61.348(b), then the owner or operator shall monitor each wastewater treatment system to ensure the unit is properly operated and maintained by the appropriate monitoring procedure as follows:
- (1) For the first exempt waste management unit in each waste treatment train, other than an enhanced biodegradation unit, measure the flow rate, using the procedures of § 61.355(b), and the benzene concentration of each waste stream entering the unit at least once per month by collecting and analyzing one or more samples using the procedures specified in § 61.355(c)(3).

- (2) For each enhanced biodegradation unit that is the first exempt waste management unit in a treatment train, measure the benzene concentration of each waste stream entering the unit at least once per month by collecting and analyzing one or more samples using the procedures specified in § 61.355(c)(3).
- (c) An owner or operator subject to the requirements in § 61.349 of this subpart shall install, calibrate, maintain, and operate according to the manufacturer's specifications a device to continuously monitor the control device operation as specified in the following paragraphs, unless alternative monitoring procedures or requirements are approved for that facility by the Administrator. The owner or operator shall inspect at least once each operating day the data recorded by the monitoring equipment (e.g., temperature monitor or flow indicator) to ensure that the control device is operating properly.
 - (1) For a thermal vapor incinerator, a temperature monitoring device equipped with a continuous recorder. The device shall have an accuracy of ± 1 percent of the temperature being monitored in $^{\circ}\text{C}$ or ± 0.5 $^{\circ}\text{C}$, whichever is greater. The temperature sensor shall be installed at a representative location in the combustion chamber.
 - (2) For a catalytic vapor incinerator, a temperature monitoring device equipped with a continuous recorder. The device shall be capable of monitoring temperature at two locations, and have an accuracy of ± 1 percent of the temperature being monitored in $^{\circ}\text{C}$ or ± 0.5 $^{\circ}\text{C}$, whichever is greater. One temperature sensor shall be installed in the vent stream at the nearest feasible point to the catalyst bed inlet and a second temperature sensor shall be installed in the vent stream at the nearest feasible point to the catalyst bed outlet.
 - (3) For a flare, a monitoring device in accordance with 40 CFR 60.18(f)(2) equipped with a continuous recorder.
 - (4) For a boiler or process heater having a design heat input capacity less than 44 MW (150×10^6 BTU/hr), a temperature monitoring device equipped with a continuous recorder. The device shall have an accuracy of ± 1 percent of the temperature being monitored in $^{\circ}\text{C}$ or ± 0.5 $^{\circ}\text{C}$, whichever is greater. The temperature sensor shall be installed at a representative location in the combustion chamber.
 - (5) For a boiler or process heater having a design heat input capacity greater than or equal to 44 MW (150×10^6 BTU/hr), a monitoring device equipped with a continuous recorder to measure a parameter(s) that indicates good combustion operating practices are being used.
 - (6) For a condenser, either:
 - (i) A monitoring device equipped with a continuous recorder to measure either the concentration level of the organic compounds or the concentration level of benzene in the exhaust vent stream from the condenser; or
 - (ii) A temperature monitoring device equipped with a continuous recorder. The device shall be capable of monitoring temperature at two locations, and have an accuracy of ± 1 percent of the temperature being monitored in $^{\circ}\text{C}$ or ± 0.5 $^{\circ}\text{C}$, whichever is greater. One temperature sensor shall be installed at a location in the exhaust stream from the condenser, and a second temperature sensor shall be installed at a location in the coolant fluid exiting the condenser.
 - (7) For a carbon adsorption system that regenerates the carbon bed directly in the control device such as a fixed-bed carbon adsorber, either:

- (i) A monitoring device equipped with a continuous recorder to measure either the concentration level of the organic compounds or the benzene concentration level in the exhaust vent stream from the carbon bed; or
 - (ii) A monitoring device equipped with a continuous recorder to measure a parameter that indicates the carbon bed is regenerated on a regular, predetermined time cycle.
- (8) For a vapor recovery system other than a condenser or carbon adsorption system, a monitoring device equipped with a continuous recorder to measure either the concentration level of the organic compounds or the benzene concentration level in the exhaust vent stream from the control device.
- (9) For a control device subject to the requirements of § 61.349(a)(2)(iv), devices to monitor the parameters as specified in § 61.349(a)(2)(iv)(C).
- (d) For a carbon adsorption system that does not regenerate the carbon bed directly on site in the control device (e.g., a carbon canister), either the concentration level of the organic compounds or the concentration level of benzene in the exhaust vent stream from the carbon adsorption system shall be monitored on a regular schedule, and the existing carbon shall be replaced with fresh carbon immediately when carbon breakthrough is indicated. The device shall be monitored on a daily basis or at intervals no greater than 20 percent of the design carbon replacement interval, whichever is greater. As an alternative to conducting this monitoring, an owner or operator may replace the carbon in the carbon adsorption system with fresh carbon at a regular predetermined time interval that is less than the carbon replacement interval that is determined by the maximum design flow rate and either the organic concentration or the benzene concentration in the gas stream vented to the carbon adsorption system.
- (e) An alternative operation or process parameter may be monitored if it can be demonstrated that another parameter will ensure that the control device is operated in conformance with these standards and the control device's design specifications.
- (f) Owners or operators using a closed-vent system that contains any bypass line that could divert a vent stream from a control device used to comply with the provisions of this subpart shall do the following:
 - (1) Visually inspect the bypass line valve at least once every month, checking the position of the valve and the condition of the car-seal or closure mechanism required under § 61.349(a)(1)(ii) to ensure that the valve is maintained in the closed position and the vent stream is not diverted through the bypass line.
 - (2) Visually inspect the readings from each flow monitoring device required by § 61.349(a)(1)(ii) at least once each operating day to check that vapors are being routed to the control device as required.
- (g) Each owner or operator who uses a system for emission control that is maintained at a pressure less than atmospheric pressure with openings to provide dilution air shall install, calibrate, maintain, and operate according to the manufacturer's specifications a device equipped with a continuous recorder to monitor the pressure in the unit to ensure that it is less than atmospheric pressure.

[55 FR 8346, Mar. 7, 1990, as amended at 58 FR 3099, Jan. 7, 1993; 65 FR 62160, Oct. 17, 2000]

§ 61.355 Test methods, procedures, and compliance provisions.

- (a) An owner or operator shall determine the total annual benzene quantity from facility waste by the following procedure:

- (1) For each waste stream subject to this subpart having a flow-weighted annual average water content greater than 10 percent water, on a volume basis as total water, or is mixed with water or other wastes at any time and the resulting mixture has an annual average water content greater than 10 percent as specified in § 61.342(a), the owner or operator shall:
 - (i) Determine the annual waste quantity for each waste stream using the procedures specified in paragraph (b) of this section.
 - (ii) Determine the flow-weighted annual average benzene concentration for each waste stream using the procedures specified in paragraph (c) of this section.
 - (iii) Calculate the annual benzene quantity for each waste stream by multiplying the annual waste quantity of the waste stream times the flow-weighted annual average benzene concentration.
 - (2) Total annual benzene quantity from facility waste is calculated by adding together the annual benzene quantity for each waste stream generated during the year and the annual benzene quantity for each process unit turnaround waste annualized according to paragraph (b)(4) of this section.
 - (3) If the total annual benzene quantity from facility waste is equal to or greater than 10 Mg/yr (11 ton/yr), then the owner or operator shall comply with the requirements of § 61.342 (c), (d), or (e).
 - (4) If the total annual benzene quantity from facility waste is less than 10 Mg/yr (11 ton/yr) but is equal to or greater than 1 Mg/yr (1.1 ton/yr), then the owner or operator shall:
 - (i) Comply with the recordkeeping requirements of § 61.356 and reporting requirements of § 61.357 of this subpart; and
 - (ii) Repeat the determination of total annual benzene quantity from facility waste at least once per year and whenever there is a change in the process generating the waste that could cause the total annual benzene quantity from facility waste to increase to 10 Mg/yr (11 ton/yr) or more.
 - (5) If the total annual benzene quantity from facility waste is less than 1 Mg/yr (1.1 ton/yr), then the owner or operator shall:
 - (i) Comply with the recordkeeping requirements of § 61.356 and reporting requirements of § 61.357 of this subpart; and
 - (ii) Repeat the determination of total annual benzene quantity from facility waste whenever there is a change in the process generating the waste that could cause the total annual benzene quantity from facility waste to increase to 1 Mg/yr (1.1 ton/yr) or more.
 - (6) The benzene quantity in a waste stream that is generated less than one time per year, except as provided for process unit turnaround waste in paragraph (b)(4) of this section, shall be included in the determination of total annual benzene quantity from facility waste for the year in which the waste is generated unless the waste stream is otherwise excluded from the determination of total annual benzene quantity from facility waste in accordance with paragraphs (a) through (c) of this section. The benzene quantity in this waste stream shall not be annualized or averaged over the time interval between the activities that resulted in generation of the waste, for purposes of determining the total annual benzene quantity from facility waste.
- (b) For purposes of the calculation required by paragraph (a) of this section, an owner or operator shall determine the annual waste quantity at the point of waste generation, unless otherwise provided in paragraphs (b) (1), (2), (3), and (4) of this section, by one of the methods given in paragraphs (b) (5) through (7) of this section.

- (1) The determination of annual waste quantity for sour water streams that are processed in sour water strippers shall be made at the point that the water exits the sour water stripper.
- (2) The determination of annual waste quantity for wastes at coke by-product plants subject to and complying with the control requirements of § 61.132, 61.133, 61.134, or 61.139 of subpart L of this part shall be made at the location that the waste stream exits the process unit component or waste management unit controlled by that subpart or at the exit of the ammonia still, provided that the following conditions are met:
 - (i) The transfer of wastes between units complying with the control requirements of subpart L of this part, process units, and the ammonia still is made through hard piping or other enclosed system.
 - (ii) The ammonia still meets the definition of a sour water stripper in § 61.341.
- (3) The determination of annual waste quantity for wastes that are received at hazardous waste treatment, storage, or disposal facilities from offsite shall be made at the point where the waste enters the hazardous waste treatment, storage, or disposal facility.
- (4) The determination of annual waste quantity for each process unit turnaround waste generated only at 2 year or greater intervals, may be made by dividing the total quantity of waste generated during the most recent process unit turnaround by the time period (in the nearest tenth of a year) between the turnaround resulting in generation of the waste and the most recent preceding process turnaround for the unit. The resulting annual waste quantity shall be included in the calculation of the annual benzene quantity as provided in paragraph (a)(1)(iii) of this section for the year in which the turnaround occurs and for each subsequent year until the unit undergoes the next process turnaround. For estimates of total annual benzene quantity as specified in the 90-day report, required under § 61.357(a)(1), the owner or operator shall estimate the waste quantity generated during the most recent turnaround, and the time period between turnarounds in accordance with good engineering practices. If the owner or operator chooses not to annualize process unit turnaround waste, as specified in this paragraph, then the process unit turnaround waste quantity shall be included in the calculation of the annual benzene quantity for the year in which the turnaround occurs.
- (5) Select the highest annual quantity of waste managed from historical records representing the most recent 5 years of operation or, if the facility has been in service for less than 5 years but at least 1 year, from historical records representing the total operating life of the facility;
- (6) Use the maximum design capacity of the waste management unit; or
- (7) Use measurements that are representative of maximum waste generation rates.
- (c) For the purposes of the calculation required by §§ 61.355(a) of this subpart, an owner or operator shall determine the flow-weighted annual average benzene concentration in a manner that meets the requirements given in paragraph (c)(1) of this section using either of the methods given in paragraphs (c)(2) and (c)(3) of this section.
 - (1) The determination of flow-weighted annual average benzene concentration shall meet all of the following criteria:
 - (i) The determination shall be made at the point of waste generation except for the specific cases given in paragraphs (c)(1)(i)(A) through (D) of this section.

- (A) The determination for sour water streams that are processed in sour water strippers shall be made at the point that the water exits the sour water stripper.
- (B) The determination for wastes at coke by-product plants subject to and complying with the control requirements of § 61.132, 61.133, 61.134, or 61.139 of subpart L of this part shall be made at the location that the waste stream exits the process unit component or waste management unit controlled by that subpart or at the exit of the ammonia still, provided that the following conditions are met:
 - (1) The transfer of wastes between units complying with the control requirements of subpart L of this part, process units, and the ammonia still is made through hard piping or other enclosed system.
 - (2) The ammonia still meets the definition of a sour water stripper in § 61.341.
- (C) The determination for wastes that are received from offsite shall be made at the point where the waste enters the hazardous waste treatment, storage, or disposal facility.
- (D) The determination of flow-weighted annual average benzene concentration for process unit turnaround waste shall be made using either of the methods given in paragraph (c)(2) or (c)(3) of this section. The resulting flow-weighted annual average benzene concentration shall be included in the calculation of annual benzene quantity as provided in paragraph (a)(1)(iii) of this section for the year in which the turnaround occurs and for each subsequent year until the unit undergoes the next process unit turnaround.
- (ii) Volatilization of the benzene by exposure to air shall not be used in the determination to reduce the benzene concentration.
- (iii) Mixing or diluting the waste stream with other wastes or other materials shall not be used in the determination—to reduce the benzene concentration.
- (iv) The determination shall be made prior to any treatment of the waste that removes benzene, except as specified in paragraphs (c)(1)(i)(A) through (D) of this section.
- (v) For wastes with multiple phases, the determination shall provide the weighted-average benzene concentration based on the benzene concentration in each phase of the waste and the relative proportion of the phases.
- (2) **Knowledge of the waste.** The owner or operator shall provide sufficient information to document the flow-weighted annual average benzene concentration of each waste stream. Examples of information that could constitute knowledge include material balances, records of chemicals purchases, or previous test results provided the results are still relevant to the current waste stream conditions. If test data are used, then the owner or operator shall provide documentation describing the testing protocol and the means by which sampling variability and analytical variability were accounted for in the determination of the flow-weighted annual average benzene concentration for the waste stream. When an owner or operator and the Administrator do not agree on determinations of the flow-weighted annual average benzene concentration based on knowledge of the waste, the procedures under paragraph (c)(3) of this section shall be used to resolve the disagreement.
- (3) Measurements of the benzene concentration in the waste stream in accordance with the following procedures:

- (i) Collect a minimum of three representative samples from each waste stream. Where feasible, samples shall be taken from an enclosed pipe prior to the waste being exposed to the atmosphere.
- (ii) For waste in enclosed pipes, the following procedures shall be used:
 - (A) Samples shall be collected prior to the waste being exposed to the atmosphere in order to minimize the loss of benzene prior to sampling.
 - (B) A static mixer shall be installed in the process line or in a by-pass line unless the owner or operator demonstrates that installation of a static mixer in the line is not necessary to accurately determine the benzene concentration of the waste stream.
 - (C) The sampling tap shall be located within two pipe diameters of the static mixer outlet.
 - (D) Prior to the initiation of sampling, sample lines and cooling coil shall be purged with at least four volumes of waste.
 - (E) After purging, the sample flow shall be directed to a sample container and the tip of the sampling tube shall be kept below the surface of the waste during sampling to minimize contact with the atmosphere.
 - (F) Samples shall be collected at a flow rate such that the cooling coil is able to maintain a waste temperature less than 10 °C (50 °F).
 - (G) After filling, the sample container shall be capped immediately (within 5 seconds) to leave a minimum headspace in the container.
 - (H) The sample containers shall immediately be cooled and maintained at a temperature below 10 °C (50 °F) for transfer to the laboratory.
- (iii) When sampling from an enclosed pipe is not feasible, a minimum of three representative samples shall be collected in a manner to minimize exposure of the sample to the atmosphere and loss of benzene prior to sampling.
- (iv) Each waste sample shall be analyzed using one of the following test methods for determining the benzene concentration in a waste stream:
 - (A) Method 8020, Aromatic Volatile Organics, in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication No. SW-846 (incorporation by reference as specified in § 61.18 of this part);
 - (B) Method 8021, Volatile Organic Compounds in Water by Purge and Trap Capillary Column Gas Chromatography with Photoionization and Electrolytic Conductivity Detectors in Series in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication No. SW-846 (incorporation by reference as specified in § 61.18 of this part);
 - (C) Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication No. SW-846 (incorporation by reference as specified in § 61.18 of this part);
 - (D) Method 8260, Gas Chromatography/Mass Spectrometry for Volatile Organics: Capillary Column Technique in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication No. SW-846 (incorporation by reference as specified in § 61.18 of this part);

- (E) Method 602, Purgeable Aromatics, as described in 40 CFR part 136, appendix A, Test Procedures for Analysis of Organic Pollutants, for wastewaters for which this is an approved EPA methods; or
- (F) Method 624, Purgeables, as described in 40 CFR part 136, appendix A, Test Procedures for Analysis of Organic Pollutants, for wastewaters for which this is an approved EPA method.
- (v) The flow-weighted annual average benzene concentration shall be calculated by averaging the results of the sample analyses as follows:

$$\bar{C} = \frac{1}{Q_t} \times \sum_{i=1}^n (Q_i)(C_i)$$

Where:

C = Flow-weighted annual average benzene concentration for waste stream, ppmw.

Q_t = Total annual waste quantity for waste stream, kg/yr (lb/yr).

n = Number of waste samples (at least 3).

Q_i = Annual waste quantity for waste stream represented by C_i , kg/yr (lb/yr).

C_i = Measured concentration of benzene in waste sample i, ppmw.

- (d) An owner or operator using performance tests to demonstrate compliance of a treatment process with § 61.348 (a)(1)(i) shall measure the flow-weighted annual average benzene concentration of the waste stream exiting the treatment process by collecting and analyzing a minimum of three representative samples of the waste stream using the procedures in paragraph (c)(3) of this section. The test shall be conducted under conditions that exist when the treatment process is operating at the highest inlet waste stream flow rate and benzene content expected to occur. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a test. The owner or operator shall record all process information as is necessary to document the operating conditions during the test.
- (e) An owner or operator using performance tests to demonstrate compliance of a treatment process with § 61.348(a)(1)(ii) of this subpart shall determine the percent reduction of benzene in the waste stream on a mass basis by the following procedure:
 - (1) The test shall be conducted under conditions that exist when the treatment process is operating at the highest inlet waste stream flow rate and benzene content expected to occur. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a test. The owner or operator shall record all process information as is necessary to document the operating conditions during the test.
 - (2) All testing equipment shall be prepared and installed as specified in the appropriate test methods.
 - (3) The mass flow rate of benzene entering the treatment process (E_b) shall be determined by computing the product of the flow rate of the waste stream entering the treatment process, as determined by the inlet flow meter, and the benzene concentration of the waste stream, as

determined using the sampling and analytical procedures specified in paragraph (c)(2) or (c)(3) of this section. Three grab samples of the waste shall be taken at equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs conducted over a 3-hour period. The mass flow rate of benzene entering the treatment process is calculated as follows:

$$E_b = \frac{K}{n \times 10^6} \left[\sum_{i=1}^n V_i C_i \right]$$

Where:

E_b = Mass flow rate of benzene entering the treatment process, kg/hr (lb/hr).

K = Density of the waste stream, kg/m³ (lb/ft³).

V_i = Average volume flow rate of waste entering the treatment process during each run i , m³/hr (ft³/hr).

C_i = Average concentration of benzene in the waste stream entering the treatment process during each run i , ppmw.

n = Number of runs.

10^6 = Conversion factor for ppmw.

- (4) The mass flow rate of benzene exiting the treatment process (E_a) shall be determined by computing the product of the flow rate of the waste stream exiting the treatment process, as determined by the outlet flow meter or the inlet flow meter, and the benzene concentration of the waste stream, as determined using the sampling and analytical procedures specified in paragraph (c)(2) or (c)(3) of this section. Three grab samples of the waste shall be taken at equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs conducted over the same 3-hour period at which the mass flow rate of benzene entering the treatment process is determined. The mass flow rate of benzene exiting the treatment process is calculated as follows:

$$E_a = \frac{K}{n \times 10^6} \left[\sum_{i=1}^n V_i C_i \right]$$

Where:

E_a = Mass flow rate of benzene exiting the treatment process, kg/hr (lb/hr).

K = Density of the waste stream, kg/m³ (lb/ft³).

V_i = Average volume flow rate of waste exiting the treatment process during each run i , m³/hr (ft³/hr).

C_i = Average concentration of benzene in the waste stream exiting the treatment process during each run i , ppmw.

n = Number of runs.

10^6 = Conversion factor for ppmw.

(f) An owner or operator using performance tests to demonstrate compliance of a treatment process with § 61.348(a)(1)(iii) of this subpart shall determine the benzene destruction efficiency for the combustion unit by the following procedure:

- (1) The test shall be conducted under conditions that exist when the combustion unit is operating at the highest inlet waste stream flow rate and benzene content expected to occur. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a test. The owner or operator shall record all process information necessary to document the operating conditions during the test.
- (2) All testing equipment shall be prepared and installed as specified in the appropriate test methods.
- (3) The mass flow rate of benzene entering the combustion unit shall be determined by computing the product of the flow rate of the waste stream entering the combustion unit, as determined by the inlet flow meter, and the benzene concentration of the waste stream, as determined using the sampling procedures in paragraph (c)(2) or (c)(3) of this section. Three grab samples of the waste shall be taken at equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs conducted over a 3-hour period. The mass flow rate of benzene into the combustion unit is calculated as follows:

$$E_b = \frac{K}{n \times 10^6} \left[\sum_{i=1}^n V_i C_i \right]$$

Where:

E_b = Mass flow rate of benzene entering the combustion unit, kg/hr (lb/hr).

K = Density of the waste stream, kg/m³ (lb/ft³).

V_i = Average volume flow rate of waste entering the combustion unit during each run i , m³/hr (ft³/hr).

C_i = Average concentration of benzene in the waste stream entering the combustion unit during each run i , ppmw.

n = Number of runs.

10^6 = Conversion factor for ppmw.

- (4) The mass flow rate of benzene exiting the combustion unit exhaust stack shall be determined as follows:

- (i) The time period for the test shall not be less than 3 hours during which at least 3 stack gas samples are collected and be the same time period at which the mass flow rate of benzene entering the treatment process is determined. Each sample shall be collected over a 1-hour period (e.g., in a tedlar bag) to represent a time-integrated composite sample and each 1-hour period shall correspond to the periods when the waste feed is sampled.
- (ii) A run shall consist of a 1-hour period during the test. For each run:
 - (A) The reading from each measurement shall be recorded;
 - (B) The volume exhausted shall be determined using Method 2, 2A, 2C, or 2D from appendix A of 40 CFR part 60, as appropriate.
 - (C) The average benzene concentration in the exhaust downstream of the combustion unit shall be determined using Method 18 from appendix A of 40 CFR part 60.
- (iii) The mass of benzene emitted during each run shall be calculated as follows:

$$M_i = D_b VC(10^{-6})$$

Where:

M_i = Mass of benzene emitted during run i , kg (lb).

V = Volume of air-vapor mixture exhausted at standard conditions, m^3 (ft^3).

C = Concentration of benzene measured in the exhaust, ppmv.

D_b = Density of benzene, $3.24 \text{ kg}/m^3$ ($0.202 \text{ lb}/ft^3$).

10^6 = Conversion factor for ppmv.

- (iv) The benzene mass emission rate in the exhaust shall be calculated as follows:

$$E_a = \left(\sum_{i=1}^n M_i \right) / T$$

Where:

E_a = Mass flow rate of benzene emitted from the combustion unit, kg/hr (lb/hr).

M_i = Mass of benzene emitted from the combustion unit during run i , kg (lb).

T = Total time of all runs, hr.

n = Number of runs.

- (5) The benzene destruction efficiency for the combustion unit shall be calculated as follows:

$$R = \frac{E_b - E_a}{E_b} \times 100$$

Where:

R = Benzene destruction efficiency for the combustion unit, percent.

E_b = Mass flow rate of benzene entering the combustion unit, kg/hr (lb/hr).

E_a = Mass flow rate of benzene emitted from the combustion unit, kg/hr (lb/hr).

- (g) An owner or operator using performance tests to demonstrate compliance of a wastewater treatment system unit with § 61.348(b) shall measure the flow-weighted annual average benzene concentration of the wastewater stream where the waste stream enters an exempt waste management unit by collecting and analyzing a minimum of three representative samples of the waste stream using the procedures in paragraph (c)(3) of this section. The test shall be conducted under conditions that exist when the wastewater treatment system is operating at the highest inlet wastewater stream flow rate and benzene content expected to occur. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a test. The owner or operator shall record all process information as is necessary to document the operating conditions during the test.
- (h) An owner or operator shall test equipment for compliance with no detectable emissions as required in §§ 61.343 through 61.347, and § 61.349 of this subpart in accordance with the following requirements:
 - (1) Monitoring shall comply with Method 21 from appendix A of 40 CFR part 60.
 - (2) The detection instrument shall meet the performance criteria of Method 21.
 - (3) The instrument shall be calibrated before use on each day of its use by the procedures specified in Method 21.
 - (4) Calibration gases shall be:
 - (i) Zero air (less than 10 ppm of hydrocarbon in air); and
 - (ii) A mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane.
 - (5) The background level shall be determined as set forth in Method 21.
 - (6) The instrument probe shall be traversed around all potential leak interfaces as close as possible to the interface as described in Method 21.
 - (7) The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared to 500 ppm for determining compliance.
- (i) An owner or operator using a performance test to demonstrate compliance of a control device with either the organic reduction efficiency requirement or the benzene reduction efficiency requirement specified under § 61.349(a)(2) shall use the following procedures:

- (1) The test shall be conducted under conditions that exist when the waste management unit vented to the control device is operating at the highest load or capacity level expected to occur. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a test. The owner or operator shall record all process information necessary to document the operating conditions during the test.
- (2) Sampling sites shall be selected using Method 1 or 1A from appendix A of 40 CFR part 60, as appropriate.
- (3) The mass flow rate of either the organics or benzene entering and exiting the control device shall be determined as follows:
 - (i) The time period for the test shall not be less than 3 hours during which at least 3 stack gas samples are collected. Samples of the vent stream entering and exiting the control device shall be collected during the same time period. Each sample shall be collected over a 1-hour period (e.g., in a tedlar bag) to represent a time-integrated composite sample.
 - (ii) A run shall consist of a 1-hour period during the test. For each run:
 - (A) The reading from each measurement shall be recorded;
 - (B) The volume exhausted shall be determined using Method 2, 2A, 2C, or 2D from appendix A of 40 CFR part 60, as appropriate;
 - (C) The organic concentration or the benzene concentration, as appropriate, in the vent stream entering and exiting the control shall be determined using Method 18 from appendix A of 40 CFR part 60.
 - (iii) The mass of organics or benzene entering and exiting the control device during each run shall be calculated as follows:

$$M_{aj} = \frac{K_1 V_{aj}}{10^6} \left(\sum_{i=1}^n C_{ai} MW_i \right)$$

$$M_{bj} = \frac{K_1 V_{bj}}{10^6} \left(\sum_{i=1}^n C_{bi} MW_i \right)$$

M_{aj} = Mass of organics or benzene in the vent stream entering the control device during run j, kg (lb).

M_{bj} = Mass of organics or benzene in the vent stream exiting the control device during run j, kg (lb).

V_{aj} = Volume of vent stream entering the control device during run j, at standard conditions, m³ (ft³).

V_{bj} = Volume of vent stream exiting the control device during run j, at standard conditions, m³ (ft³).

C_{ai} = Organic concentration of compound i or the benzene concentration measured in the vent stream entering the control device as determined by Method 18, ppm by volume on a dry basis.

C_{bi} = Organic concentration of compound i or the benzene concentration measured in the vent stream exiting the control device as determined by Method 18, ppm by volume on a dry basis.

MW_i = Molecular weight of organic compound i in the vent stream, or the molecular weight of benzene, kg/kg-mol (lb/lb-mole).

n = Number of organic compounds in the vent stream; if benzene reduction efficiency is being demonstrated, then $n = 1$.

K_1 = Conversion factor for molar volume at standard conditions (293 K and 760 mm Hg (527 R and 14.7 psia))
 $= 0.0416 \text{ kg-mol/m}^3$ (0.00118 lb-mol/ft³)

10^{-6} = Conversion factor for ppmv.

- (iv) The mass flow rate of organics or benzene entering and exiting the control device shall be calculated as follows:

$$E_a - \left(\sum_{j=1}^n M_{aj} \right) / T$$

$$E_b - \left(\sum_{j=1}^n M_{bj} \right) / T$$

Where:

E_a = Mass flow rate of organics or benzene entering the control device, kg/hr (lb/hr).

E_b = Mass flow rate of organics or benzene exiting the control device, kg/hr (lb/hr).

M_{aj} = Mass of organics or benzene in the vent stream entering the control device during run j , kg (lb).

M_{bj} = Mass of organics or benzene in the vent stream exiting the control device during run j , kg (lb).

T = Total time of all runs, hr.

n = Number of runs.

- (4) The organic reduction efficiency or the benzene reduction efficiency for the control device shall be calculated as follows:

$$R = \frac{E_a - E_b}{E_a} \times 100$$

Where:

R = Total organic reduction of efficiency or benzene reduction efficiency for the control device, percent.

E_b = Mass flow rate of organics or benzene entering the control device, kg/hr (lb/hr).

E_a = Mass flow rate of organic or benzene emitted from the control device, kg/hr (lb/hr).

- (j) An owner or operator shall determine the benzene quantity for the purposes of the calculation required by § 61.342 (c)(3)(ii)(B) according to the provisions of paragraph (a) of this section, except that the procedures in paragraph (a) of this section shall also apply to wastes with a water content of 10 percent or less.
- (k) An owner or operator shall determine the benzene quantity for the purposes of the calculation required by § 61.342(e)(2) by the following procedure:
 - (1) For each waste stream that is not controlled for air emissions in accordance with § 61.343, 61.344, 61.345, 61.346, 61.347, or 61.348(a), as applicable to the waste management unit that manages the waste, the benzene quantity shall be determined as specified in paragraph (a) of this section, except that paragraph (b)(4) of this section shall not apply, i.e., the waste quantity for process unit turnaround waste is not annualized but shall be included in the determination of benzene quantity for the year in which the waste is generated for the purposes of the calculation required by § 61.342(e)(2).
 - (2) For each waste stream that is controlled for air emissions in accordance with § 61.343, 61.344, 61.345, 61.346, 61.347, or 61.348(a), as applicable to the waste management unit that manages the waste, the determination of annual waste quantity and flow-weighted annual average benzene concentration shall be made at the first applicable location as described in paragraphs (k)(2)(i), (k)(2)(ii), and (k)(2)(iii) of this section and prior to any reduction of benzene concentration through volatilization of the benzene, using the methods given in (k)(2)(iv) and (k)(2)(v) of this section.
 - (i) Where the waste stream enters the first waste management unit not complying with §§ 61.343, 61.344, 61.345, 61.346, 61.347, and 61.348(a) that are applicable to the waste management unit,
 - (ii) For each waste stream that is managed or treated only in compliance with §§ 61.343 through 61.348(a) up to the point of final direct discharge from the facility, the determination of benzene quantity shall be prior to any reduction of benzene concentration through volatilization of the benzene, or
 - (iii) For wastes managed in units controlled for air emissions in accordance with §§ 61.343, 61.344, 61.345, 61.346, 61.347, and 61.348(a), and then transferred offsite, facilities shall use the first applicable offsite location as described in paragraphs (k)(2)(i) and (k)(2)(ii) of this section if they have documentation from the offsite facility of the benzene quantity at this location. Facilities without this documentation for offsite wastes shall use the benzene quantity determined at the point where the transferred waste leaves the facility.
 - (iv) Annual waste quantity shall be determined using the procedures in paragraphs (b)(5), (6), or (7) of this section, and

- (v) The flow-weighted annual average benzene concentration shall be determined using the procedures in paragraphs (c)(2) or (3) of this section.
- (3) The benzene quantity in a waste stream that is generated less than one time per year, including process unit turnaround waste, shall be included in the determination of benzene quantity as determined in paragraph (k)(6) of this section for the year in which the waste is generated. The benzene quantity in this waste stream shall not be annualized or averaged over the time interval between the activities that resulted in generation of the waste for purposes of determining benzene quantity as determined in paragraph (k)(6) of this section.
- (4) The benzene in waste entering an enhanced biodegradation unit, as defined in § 61.348(b)(2)(ii)(B), shall not be included in the determination of benzene quantity, determined in paragraph (k)(6) of this section, if the following conditions are met:
 - (i) The benzene concentration for each waste stream entering the enhanced biodegradation unit is less than 10 ppmw on a flow-weighted annual average basis, and
 - (ii) All prior waste management units managing the waste comply with §§ 61.343, 61.344, 61.345, 61.346, 61.347 and 61.348(a).
- (5) The benzene quantity for each waste stream in paragraph (k)(2) of this section shall be determined by multiplying the annual waste quantity of each waste stream times its flow-weighted annual average benzene concentration.
- (6) The total benzene quantity for the purposes of the calculation required by § 61.342(e)(2) shall be determined by adding together the benzene quantities determined in paragraphs (k)(1) and (k)(5) of this section for each applicable waste stream.
- (7) If the benzene quantity determined in paragraph (6) of this section exceeds 6.0 Mg/yr (6.6 ton/yr) only because of multiple counting of the benzene quantity for a waste stream, the owner or operator may use the following procedures for the purposes of the calculation required by § 61.342(e)(2):
 - (i) Determine which waste management units are involved in the multiple counting of benzene;
 - (ii) Determine the quantity of benzene that is emitted, recovered, or removed from the affected units identified in paragraph (k)(7)(i) of this section, or destroyed in the units if applicable, using either direct measurements or the best available estimation techniques developed or approved by the Administrator.
 - (iii) Adjust the benzene quantity to eliminate the multiple counting of benzene based on the results from paragraph (k)(7)(ii) of this section and determine the total benzene quantity for the purposes of the calculation required by § 61.342(e)(2).
 - (iv) Submit in the annual report required under § 61.357(a) a description of the methods used and the resulting calculations for the alternative procedure under paragraph (k)(7) of this section, the benzene quantity determination from paragraph (k)(6) of this section, and the adjusted benzene quantity determination from paragraph (k)(7)(iii) of this section.

[55 FR 8346, Mar. 7, 1990; 55 FR 12444, Apr. 3, 1990, as amended at 55 FR 37231, Sept. 10, 1990; 58 FR 3099, Jan. 7, 1993; 65 FR 62160, Oct. 17, 2000]

§ 61.356 Recordkeeping requirements.

- (a) Each owner or operator of a facility subject to the provisions of this subpart shall comply with the recordkeeping requirements of this section. Each record shall be maintained in a readily accessible location at the facility site for a period not less than two years from the date the information is recorded unless otherwise specified.
- (b) Each owner or operator shall maintain records that identify each waste stream at the facility subject to this subpart, and indicate whether or not the waste stream is controlled for benzene emissions in accordance with this subpart. In addition the owner or operator shall maintain the following records:
 - (1) For each waste stream not controlled for benzene emissions in accordance with this subpart, the records shall include all test results, measurements, calculations, and other documentation used to determine the following information for the waste stream: waste stream identification, water content, whether or not the waste stream is a process wastewater stream, annual waste quantity, range of benzene concentrations, annual average flow-weighted benzene concentration, and annual benzene quantity.
 - (2) For each waste stream exempt from § 61.342(c)(1) in accordance with § 61.342(c)(3), the records shall include:
 - (i) All measurements, calculations, and other documentation used to determine that the continuous flow of process wastewater is less than 0.02 liters (0.005 gallons) per minute or the annual waste quantity of process wastewater is less than 10 Mg/yr (11 ton/yr) in accordance with § 61.342(c)(3)(i), or
 - (ii) All measurements, calculations, and other documentation used to determine that the sum of the total annual benzene quantity in all exempt waste streams does not exceed 2.0 Mg/yr (2.2 ton/yr) in accordance with § 61.342(c)(3)(ii).
 - (3) For each facility where process wastewater streams are controlled for benzene emissions in accordance with § 61.342(d) of this subpart, the records shall include for each treated process wastewater stream all measurements, calculations, and other documentation used to determine the annual benzene quantity in the process wastewater stream exiting the treatment process.
 - (4) For each facility where waste streams are controlled for benzene emissions in accordance with § 61.342(e), the records shall include for each waste stream all measurements, including the locations of the measurements, calculations, and other documentation used to determine that the total benzene quantity does not exceed 6.0 Mg/yr (6.6 ton/yr).
 - (5) For each facility where the annual waste quantity for process unit turnaround waste is determined in accordance with § 61.355(b)(5), the records shall include all test results, measurements, calculations, and other documentation used to determine the following information: identification of each process unit at the facility that undergoes turnarounds, the date of the most recent turnaround for each process unit, identification of each process unit turnaround waste, the water content of each process unit turnaround waste, the annual waste quantity determined in accordance with § 61.355(b)(5), the range of benzene concentrations in the waste, the annual average flow-weighted benzene concentration of the waste, and the annual benzene quantity calculated in accordance with § 61.355(a)(1)(iii) of this section.

- (6) For each facility where wastewater streams are controlled for benzene emissions in accordance with § 61.348(b)(2), the records shall include all measurements, calculations, and other documentation used to determine the annual benzene content of the waste streams and the total annual benzene quantity contained in all waste streams managed or treated in exempt waste management units.
- (c) An owner or operator transferring waste off-site to another facility for treatment in accordance with § 61.342(f) shall maintain documentation for each offsite waste shipment that includes the following information: Date waste is shipped offsite, quantity of waste shipped offsite, name and address of the facility receiving the waste, and a copy of the notice sent with the waste shipment.
- (d) An owner or operator using control equipment in accordance with §§ 61.343 through 61.347 shall maintain engineering design documentation for all control equipment that is installed on the waste management unit. The documentation shall be retained for the life of the control equipment. If a control device is used, then the owner or operator shall maintain the control device records required by paragraph (f) of this section.
- (e) An owner or operator using a treatment process or wastewater treatment system unit in accordance with § 61.348 of this subpart shall maintain the following records. The documentation shall be retained for the life of the unit.
 - (1) A statement signed and dated by the owner or operator certifying that the unit is designed to operate at the documented performance level when the waste stream entering the unit is at the highest waste stream flow rate and benzene content expected to occur.
 - (2) If engineering calculations are used to determine treatment process or wastewater treatment system unit performance, then the owner or operator shall maintain the complete design analysis for the unit. The design analysis shall include for example the following information: Design specifications, drawings, schematics, piping and instrumentation diagrams, and other documentation necessary to demonstrate the unit performance.
 - (3) If performance tests are used to determine treatment process or wastewater treatment system unit performance, then the owner or operator shall maintain all test information necessary to demonstrate the unit performance.
 - (i) A description of the unit including the following information: type of treatment process; manufacturer name and model number; and for each waste stream entering and exiting the unit, the waste stream type (e.g., process wastewater, sludge, slurry, etc.), and the design flow rate and benzene content.
 - (ii) Documentation describing the test protocol and the means by which sampling variability and analytical variability were accounted for in the determination of the unit performance. The description of the test protocol shall include the following information: sampling locations, sampling method, sampling frequency, and analytical procedures used for sample analysis.
 - (iii) Records of unit operating conditions during each test run including all key process parameters.
 - (iv) All test results.
 - (4) If a control device is used, then the owner or operator shall maintain the control device records required by paragraph (f) of this section.

- (f) An owner or operator using a closed-vent system and control device in accordance with § 61.349 of this subpart shall maintain the following records. The documentation shall be retained for the life of the control device.
 - (1) A statement signed and dated by the owner or operator certifying that the closed-vent system and control device is designed to operate at the documented performance level when the waste management unit vented to the control device is or would be operating at the highest load or capacity expected to occur.
 - (2) If engineering calculations are used to determine control device performance in accordance with § 61.349(c), then a design analysis for the control device that includes for example:
 - (i) Specifications, drawings, schematics, and piping and instrumentation diagrams prepared by the owner or operator, or the control device manufacturer or vendor that describe the control device design based on acceptable engineering texts. The design analysis shall address the following vent stream characteristics and control device operating parameters:
 - (A) For a thermal vapor incinerator, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also establish the design minimum and average temperature in the combustion zone and the combustion zone residence time.
 - (B) For a catalytic vapor incinerator, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also establish the design minimum and average temperatures across the catalyst bed inlet and outlet.
 - (C) For a boiler or process heater, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also establish the design minimum and average flame zone temperatures, combustion zone residence time, and description of method and location where the vent stream is introduced into the flame zone.
 - (D) For a flare, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also consider the requirements specified in 40 CFR 60.18.
 - (E) For a condenser, the design analysis shall consider the vent stream composition, constituent concentration, flow rate, relative humidity, and temperature. The design analysis shall also establish the design outlet organic compound concentration level or the design outlet benzene concentration level, design average temperature of the condenser exhaust vent stream, and the design average temperatures of the coolant fluid at the condenser inlet and outlet.
 - (F) For a carbon adsorption system that regenerates the carbon bed directly on-site in the control device such as a fixed-bed adsorber, the design analysis shall consider the vent stream composition, constituent concentration, flow rate, relative humidity, and temperature. The design analysis shall also establish the design exhaust vent stream organic compound concentration level or the design exhaust vent stream benzene concentration level, number and capacity of carbon beds, type and working capacity of activated carbon used for carbon beds, design total steam flow over the period of each

complete carbon bed regeneration cycle, duration of the carbon bed steaming and cooling/drying cycles, design carbon bed temperature after regeneration, design carbon bed regeneration time, and design service life of carbon.

(G) For a carbon adsorption system that does not regenerate the carbon bed directly on-site in the control device, such as a carbon canister, the design analysis shall consider the vent stream composition, constituent concentration, flow rate, relative humidity, and temperature. The design analysis shall also establish the design exhaust vent stream organic compound concentration level or the design exhaust vent stream benzene concentration level, capacity of carbon bed, type and working capacity of activated carbon used for carbon bed, and design carbon replacement interval based on the total carbon working capacity of the control device and source operating schedule.

(H) For a control device subject to the requirements of § 61.349(a)(2)(iv), the design analysis shall consider the vent stream composition, constituent concentration, and flow rate. The design analysis shall also include all of the information submitted under § 61.349(a)(2)(iv).

(ii) [Reserved]

(3) If performance tests are used to determine control device performance in accordance with § 61.349(c) of this subpart:

(i) A description of how it is determined that the test is conducted when the waste management unit or treatment process is operating at the highest load or capacity level. This description shall include the estimated or design flow rate and organic content of each vent stream and definition of the acceptable operating ranges of key process and control parameters during the test program.

(ii) A description of the control device including the type of control device, control device manufacturer's name and model number, control device dimensions, capacity, and construction materials.

(iii) A detailed description of sampling and monitoring procedures, including sampling and monitoring locations in the system, the equipment to be used, sampling and monitoring frequency, and planned analytical procedures for sample analysis.

(iv) All test results.

(g) An owner or operator shall maintain a record for each visual inspection required by §§ 61.343 through 61.347 of this subpart that identifies a problem (such as a broken seal, gap or other problem) which could result in benzene emissions. The record shall include the date of the inspection, waste management unit and control equipment location where the problem is identified, a description of the problem, a description of the corrective action taken, and the date the corrective action was completed.

(h) An owner or operator shall maintain a record for each test of no detectable emissions required by §§ 61.343 through 61.347 and § 61.349 of this subpart. The record shall include the following information: date the test is performed, background level measured during test, and maximum concentration indicated by the instrument reading measured for each potential leak interface. If detectable emissions are measured at a leak interface, then the record shall also include the waste management unit, control equipment, and leak interface location where detectable emissions were measured, a description of the problem, a description of the corrective action taken, and the date the corrective action was completed.

- (i) For each treatment process and wastewater treatment system unit operated to comply with § 61.348, the owner or operator shall maintain documentation that includes the following information regarding the unit operation:
 - (1) Dates of startup and shutdown of the unit.
 - (2) If measurements of waste stream benzene concentration are performed in accordance with § 61.354(a)(1) of this subpart, the owner or operator shall maintain records that include date each test is performed and all test results.
 - (3) If a process parameter is continuously monitored in accordance with § 61.354(a)(2) of this subpart, the owner or operator shall maintain records that include a description of the operating parameter (or parameters) to be monitored to ensure that the unit will be operated in conformance with these standards and the unit's design specifications, and an explanation of the criteria used for selection of that parameter (or parameters). This documentation shall be kept for the life of the unit.
 - (4) If measurements of waste stream benzene concentration are performed in accordance with § 61.354(b), the owner or operator shall maintain records that include the date each test is performed and all test results.
 - (5) Periods when the unit is not operated as designed.
- (j) For each control device, the owner or operator shall maintain documentation that includes the following information regarding the control device operation:
 - (1) Dates of startup and shutdown of the closed-vent system and control device.
 - (2) A description of the operating parameter (or parameters) to be monitored to ensure that the control device will be operated in conformance with these standards and the control device's design specifications and an explanation of the criteria used for selection of that parameter (or parameters). This documentation shall be kept for the life of the control device.
 - (3) Periods when the closed-vent system and control device are not operated as designed including all periods and the duration when:
 - (i) Any valve car-seal or closure mechanism required under § 61.349(a)(1)(ii) is broken or the by-pass line valve position has changed.
 - (ii) The flow monitoring devices required under § 61.349(a)(1)(ii) indicate that vapors are not routed to the control device as required.
 - (4) If a thermal vapor incinerator is used, then the owner or operator shall maintain continuous records of the temperature of the gas stream in the combustion zone of the incinerator and records of all 3-hour periods of operation during which the average temperature of the gas stream in the combustion zone is more than 28 °C (50 °F) below the design combustion zone temperature.
 - (5) If a catalytic vapor incinerator is used, then the owner or operator shall maintain continuous records of the temperature of the gas stream both upstream and downstream of the catalyst bed of the incinerator, records of all 3-hour periods of operation during which the average temperature measured before the catalyst bed is more than 28 °C (50 °F) below the design gas stream temperature, and records of all 3-hour periods of operation during which the average temperature difference across the catalyst bed is less than 80 percent of the design temperature difference.

- (6) If a boiler or process heater is used, then the owner or operator shall maintain records of each occurrence when there is a change in the location at which the vent stream is introduced into the flame zone as required by § 61.349(a)(2)(i)(C). For a boiler or process heater having a design heat input capacity less than 44 MW (150 × 10⁶ BTU/hr), the owner or operator shall maintain continuous records of the temperature of the gas stream in the combustion zone of the boiler or process heater and records of all 3-hour periods of operation during which the average temperature of the gas stream in the combustion zone is more than 28 °C (50 °F) below the design combustion zone temperature. For a boiler or process heater having a design heat input capacity greater than or equal to 44 MW (150 × 10⁶ BTU/hr), the owner or operator shall maintain continuous records of the parameter(s) monitored in accordance with the requirements of § 61.354(c)(5).
 - (7) If a flare is used, then the owner or operator shall maintain continuous records of the flare pilot flame monitoring and records of all periods during which the pilot flame is absent.
 - (8) If a condenser is used, then the owner or operator shall maintain records from the monitoring device of the parameters selected to be monitored in accordance with § 61.354(c)(6). If concentration of organics or concentration of benzene in the control device outlet gas stream is monitored, then the owner or operator shall record all 3-hour periods of operation during which the concentration of organics or the concentration of benzene in the exhaust stream is more than 20 percent greater than the design value. If the temperature of the condenser exhaust stream and coolant fluid is monitored, then the owner or operator shall record all 3-hour periods of operation during which the temperature of the condenser exhaust vent stream is more than 6 °C (11 °F) above the design average exhaust vent stream temperature, or the temperature of the coolant fluid exiting the condenser is more than 6 °C (11 °F) above the design average coolant fluid temperature at the condenser outlet.
 - (9) If a carbon adsorber is used, then the owner or operator shall maintain records from the monitoring device of the concentration of organics or the concentration of benzene in the control device outlet gas stream. If the concentration of organics or the concentration of benzene in the control device outlet gas stream is monitored, then the owner or operator shall record all 3-hour periods of operation during which the concentration of organics or the concentration of benzene in the exhaust stream is more than 20 percent greater than the design value. If the carbon bed regeneration interval is monitored, then the owner or operator shall record each occurrence when the vent stream continues to flow through the control device beyond the predetermined carbon bed regeneration time.
 - (10) If a carbon adsorber that is not regenerated directly on site in the control device is used, then the owner or operator shall maintain records of dates and times when the control device is monitored, when breakthrough is measured, and shall record the date and time then the existing carbon in the control device is replaced with fresh carbon.
 - (11) If an alternative operational or process parameter is monitored for a control device, as allowed in § 61.354(e) of this subpart, then the owner or operator shall maintain records of the continuously monitored parameter, including periods when the device is not operated as designed.
 - (12) If a control device subject to the requirements of § 61.349(a)(2)(iv) is used, then the owner or operator shall maintain records of the parameters that are monitored and each occurrence when the parameters monitored are outside the range of values specified in § 61.349(a)(2)(iv)(C), or other records as specified by the Administrator.
- (k) An owner or operator who elects to install and operate the control equipment in § 61.351 of this subpart shall comply with the recordkeeping requirements in 40 CFR 60.115b.

- (l) An owner or operator who elects to install and operate the control equipment in § 61.352 of this subpart shall maintain records of the following:
 - (1) The date, location, and corrective action for each visual inspection required by 40 CFR 60.693-2(a)(5), during which a broken seal, gap, or other problem is identified that could result in benzene emissions.
 - (2) Results of the seal gap measurements required by 40 CFR 60.693-2(a).
- (m) If a system is used for emission control that is maintained at a pressure less than atmospheric pressure with openings to provide dilution air, then the owner or operator shall maintain records of the monitoring device and records of all periods during which the pressure in the unit is operated at a pressure that is equal to or greater than atmospheric pressure.
- (n) Each owner or operator using a total enclosure to comply with control requirements for tanks in § 61.343 or the control requirements for containers in § 61.345 must keep the records required in paragraphs (n)(1) and (2) of this section. Owners or operators may use records as required in 40 CFR 264.1089(b)(2)(iv) or 40 CFR 265.1090(b)(2)(iv) for a tank or as required in 40 CFR 264.1089(d)(1) or 40 CFR 265.1090(d)(1) for a container to meet the recordkeeping requirement in paragraph (n)(1) of this section. The owner or operator must make the records of each verification of a total enclosure available for inspection upon request.
 - (1) Records of the most recent set of calculations and measurements performed to verify that the enclosure meets the criteria of a permanent total enclosure as specified in "Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure" in 40 CFR 52.741, appendix B;
 - (2) Records required for a closed-vent system and control device according to the requirements in paragraphs (d) (f), and (j) of this section.

[55 FR 8346, Mar. 7, 1990; 55 FR 12444, Apr. 3, 1990; 55 FR 18331, May 2, 1990, as amended at 58 FR 3103, Jan. 7, 1993; 65 FR 62161, Oct. 17, 2000; 67 FR 68533, Nov. 12, 2002]

§ 61.357 Reporting requirements.

- (a) Each owner or operator of a chemical plant, petroleum refinery, coke by-product recovery plant, and any facility managing wastes from these industries shall submit to the Administrator within 90 days after January 7, 1993, or by the initial startup for a new source with an initial startup after the effective date, a report that summarizes the regulatory status of each waste stream subject to § 61.342 and is determined by the procedures specified in § 61.355(c) to contain benzene. Each owner or operator subject to this subpart who has no benzene onsite in wastes, products, by-products, or intermediates shall submit an initial report that is a statement to this effect. For all other owners or operators subject to this subpart, the report shall include the following information:
 - (1) Total annual benzene quantity from facility waste determined in accordance with § 61.355(a) of this subpart.
 - (2) A table identifying each waste stream and whether or not the waste stream will be controlled for benzene emissions in accordance with the requirements of this subpart.
 - (3) For each waste stream identified as not being controlled for benzene emissions in accordance with the requirements of this subpart the following information shall be added to the table:
 - (i) Whether or not the water content of the waste stream is greater than 10 percent;

- (ii) Whether or not the waste stream is a process wastewater stream, product tank drawdown, or landfill leachate;
 - (iii) Annual waste quantity for the waste stream;
 - (iv) Range of benzene concentrations for the waste stream;
 - (v) Annual average flow-weighted benzene concentration for the waste stream; and
 - (vi) Annual benzene quantity for the waste stream.
- (4) The information required in paragraphs (a) (1), (2), and (3) of this section should represent the waste stream characteristics based on current configuration and operating conditions. An owner or operator only needs to list in the report those waste streams that contact materials containing benzene. The report does not need to include a description of the controls to be installed to comply with the standard or other information required in § 61.10(a).
- (b) If the total annual benzene quantity from facility waste is less than 1 Mg/yr (1.1 ton/yr), then the owner or operator shall submit to the Administrator a report that updates the information listed in paragraphs (a)(1) through (a)(3) of this section whenever there is a change in the process generating the waste stream that could cause the total annual benzene quantity from facility waste to increase to 1 Mg/yr (1.1 ton/yr) or more.
- (c) If the total annual benzene quantity from facility waste is less than 10 Mg/yr (11 ton/yr) but is equal to or greater than 1 Mg/yr (1.1 ton/yr), then the owner or operator shall submit to the Administrator a report that updates the information listed in paragraphs (a)(1) through (a)(3) of this section. The report shall be submitted annually and whenever there is a change in the process generating the waste stream that could cause the total annual benzene quantity from facility waste to increase to 10 Mg/yr (11 ton/yr) or more. If the information in the annual report required by paragraphs (a)(1) through (a)(3) of this section is not changed in the following year, the owner or operator may submit a statement to that effect.
- (d) If the total annual benzene quantity from facility waste is equal to or greater than 10 Mg/yr (11 ton/yr), then the owner or operator shall submit to the Administrator the following reports:
- (1) Within 90 days after January 7, 1993, unless a waiver of compliance under § 61.11 of this part is granted, or by the date of initial startup for a new source with an initial startup after the effective date, a certification that the equipment necessary to comply with these standards has been installed and that the required initial inspections or tests have been carried out in accordance with this subpart. If a waiver of compliance is granted under § 61.11, the certification of equipment necessary to comply with these standards shall be submitted by the date the waiver of compliance expires.
 - (2) Beginning on the date that the equipment necessary to comply with these standards has been certified in accordance with paragraph (d)(1) of this section, the owner or operator shall submit annually to the Administrator a report that updates the information listed in paragraphs (a)(1) through (a)(3) of this section. If the information in the annual report required by paragraphs (a)(1) through (a)(3) of this section is not changed in the following year, the owner or operator may submit a statement to that effect.
 - (3) If an owner or operator elects to comply with the requirements of § 61.342(c)(3)(ii), then the report required by paragraph (d)(2) of this section shall include a table identifying each waste stream chosen for exemption and the total annual benzene quantity in these exempted streams.

- (4) If an owner or operator elects to comply with the alternative requirements of § 61.342(d) of this subpart, then he shall include in the report required by paragraph (d)(2) of this section a table presenting the following information for each process wastewater stream:
 - (i) Whether or not the process wastewater stream is being controlled for benzene emissions in accordance with the requirements of this subpart;
 - (ii) For each process wastewater stream identified as not being controlled for benzene emissions in accordance with the requirements of this subpart, the table shall report the following information for the process wastewater stream as determined at the point of waste generation: annual waste quantity, range of benzene concentrations, annual average flow-weighted benzene concentration, and annual benzene quantity;
 - (iii) For each process wastewater stream identified as being controlled for benzene emissions in accordance with the requirements of this subpart, the table shall report the following information for the process wastewater stream as determined at the exit to the treatment process: Annual waste quantity, range of benzene concentrations, annual average flow-weighted benzene concentration, and annual benzene quantity.
- (5) If an owner or operator elects to comply with the alternative requirements of § 61.342(e), then the report required by paragraph (d)(2) of this section shall include a table presenting the following information for each waste stream:
 - (i) For each waste stream identified as not being controlled for benzene emissions in accordance with the requirements of this subpart; the table shall report the following information for the waste stream as determined at the point of waste generation: annual waste quantity, range of benzene concentrations, annual average flow-weighted benzene concentration, and annual benzene quantity;
 - (ii) For each waste stream identified as being controlled for benzene emissions in accordance with the requirements of this subpart; the table shall report the following information for the waste stream as determined at the applicable location described in § 61.355(k)(2): Annual waste quantity, range of benzene concentrations, annual average flow-weighted benzene concentration, and annual benzene quantity.
- (6) Beginning 3 months after the date that the equipment necessary to comply with these standards has been certified in accordance with paragraph (d)(1) of this section, the owner or operator shall submit quarterly to the Administrator a certification that all of the required inspections have been carried out in accordance with the requirements of this subpart.
- (7) Beginning 3 months after the date that the equipment necessary to comply with these standards has been certified in accordance with paragraph (d)(1) of this section, the owner or operator shall submit a report quarterly to the Administrator that includes:
 - (i) If a treatment process or wastewater treatment system unit is monitored in accordance with § 61.354(a)(1) of this subpart, then each period of operation during which the concentration of benzene in the monitored waste stream exiting the unit is equal to or greater than 10 ppmw.
 - (ii) If a treatment process or wastewater treatment system unit is monitored in accordance with § 61.354(a)(2) of this subpart, then each 3-hour period of operation during which the average value of the monitored parameter is outside the range of acceptable values or during which the unit is not operating as designed.

- (iii) If a treatment process or wastewater treatment system unit is monitored in accordance with § 61.354(b), then each period of operation during which the flow-weighted annual average concentration of benzene in the monitored waste stream entering the unit is equal to or greater than 10 ppmw and/or the total annual benzene quantity is equal to or greater than 1.0 mg/yr.
- (iv) For a control device monitored in accordance with § 61.354(c) of this subpart, each period of operation monitored during which any of the following conditions occur, as applicable to the control device:
 - (A) Each 3-hour period of operation during which the average temperature of the gas stream in the combustion zone of a thermal vapor incinerator, as measured by the temperature monitoring device, is more than 28 °C (50 °F) below the design combustion zone temperature.
 - (B) Each 3-hour period of operation during which the average temperature of the gas stream immediately before the catalyst bed of a catalytic vapor incinerator, as measured by the temperature monitoring device, is more than 28 °C (50 °F) below the design gas stream temperature, and any 3-hour period during which the average temperature difference across the catalyst bed (i.e., the difference between the temperatures of the gas stream immediately before and after the catalyst bed), as measured by the temperature monitoring device, is less than 80 percent of the design temperature difference.
 - (C) Each 3-hour period of operation during which the average temperature of the gas stream in the combustion zone of a boiler or process heater having a design heat input capacity less than 44 MW (150 × 10⁶ BTU/hr), as measured by the temperature monitoring device, is more than 28 °C (50 °F) below the design combustion zone temperature.
 - (D) Each 3-hour period of operation during which the average concentration of organics or the average concentration of benzene in the exhaust gases from a carbon adsorber, condenser, or other vapor recovery system is more than 20 percent greater than the design concentration level of organics or benzene in the exhaust gas.
 - (E) Each 3-hour period of operation during which the temperature of the condenser exhaust vent stream is more than 6 °C (11 °F) above the design average exhaust vent stream temperature, or the temperature of the coolant fluid exiting the condenser is more than 6 °C (11 °F) above the design average coolant fluid temperature at the condenser outlet.
 - (F) Each period in which the pilot flame of a flare is absent.
 - (G) Each occurrence when there is a change in the location at which the vent stream is introduced into the flame zone of a boiler or process heater as required by § 61.349(a)(2)(i)(C) of this subpart.
 - (H) Each occurrence when the carbon in a carbon adsorber system that is regenerated directly on site in the control device is not regenerated at the predetermined carbon bed regeneration time.
 - (I) Each occurrence when the carbon in a carbon adsorber system that is not regenerated directly on site in the control device is not replaced at the predetermined interval specified in § 61.354(c) of this subpart.

- (J) Each 3-hour period of operation during which the parameters monitored are outside the range of values specified in § 61.349(a)(2)(iv)(C), or any other periods specified by the Administrator for a control device subject to the requirements of § 61.349(a)(2)(iv).
- (v) For a cover and closed-vent system monitored in accordance with § 61.354(g), the owner or operator shall submit a report quarterly to the Administrator that identifies any period in which the pressure in the waste management unit is equal to or greater than atmospheric pressure.
- (8) Beginning one year after the date that the equipment necessary to comply with these standards has been certified in accordance with paragraph (d)(1) of this section, the owner or operator shall submit annually to the Administrator a report that summarizes all inspections required by §§ 61.342 through 61.354 during which detectable emissions are measured or a problem (such as a broken seal, gap or other problem) that could result in benzene emissions is identified, including information about the repairs or corrective action taken.
- (e) An owner or operator electing to comply with the provisions of §§ 61.351 or 61.352 of this subpart shall notify the Administrator of the alternative standard selected in the report required under § 61.07 or § 61.10 of this part.
- (f) An owner or operator who elects to install and operate the control equipment in § 61.351 of this subpart shall comply with the reporting requirements in 40 CFR 60.115b.
- (g) An owner or operator who elects to install and operate the control equipment in § 61.352 of this subpart shall submit initial and quarterly reports that identify all seal gap measurements, as required in 40 CFR 60.693-2(a), that are outside the prescribed limits.

[55 FR 8346, Mar. 7, 1990; 55 FR 12444, Apr. 3, 1990, as amended at 55 FR 37231, Sept. 10, 1990; 58 FR 3105, Jan. 7, 1993; 65 FR 62161, Oct. 17, 2000]

§ 61.358 Delegation of authority.

- (a) In delegating implementation and enforcement authority to a State under section 112(d) of the Clean Air Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.
- (b) Alternative means of emission limitation under § 61.353 of this subpart will not be delegated to States.

§ 61.359 [Reserved]

This content is from the eCFR and is authoritative but unofficial.

Title 40 —Protection of Environment

Chapter I —Environmental Protection Agency

Subchapter C —Air Programs

Part 63 —National Emission Standards for Hazardous Air Pollutants for Source Categories

Authority: 42 U.S.C. 7401 *et seq.*

Source: 57 FR 61992, Dec. 29, 1992, unless otherwise noted.

Subpart A General Provisions

- § 63.1 Applicability.
- § 63.2 Definitions.
- § 63.3 Units and abbreviations.
- § 63.4 Prohibited activities and circumvention.
- § 63.5 Preconstruction review and notification requirements.
- § 63.6 Compliance with standards and maintenance requirements.
- § 63.7 Performance testing requirements.
- § 63.8 Monitoring requirements.
- § 63.9 Notification requirements.
- § 63.10 Recordkeeping and reporting requirements.
- § 63.11 Control device and work practice requirements.
- § 63.12 State authority and delegations.
- § 63.13 Addresses of State air pollution control agencies and EPA Regional Offices.
- § 63.14 Incorporations by reference.
- § 63.15 Availability of information and confidentiality.
- § 63.16 Performance Track Provisions.

Table 1 to Subpart A of Part 63

Detection Sensitivity Levels (grams per hour)

Subpart A—General Provisions

Source: 59 FR 12430, Mar. 16, 1994, unless otherwise noted.

§ 63.1 Applicability.

(a) General.

- (1) Terms used throughout this part are defined in § 63.2 or in the Clean Air Act (Act) as amended in 1990, except that individual subparts of this part may include specific definitions in addition to or that supersede definitions in § 63.2.

- (2) This part contains national emission standards for hazardous air pollutants (NESHAP) established pursuant to section 112 of the Act as amended November 15, 1990. These standards regulate specific categories of stationary sources that emit (or have the potential to emit) one or more hazardous air pollutants listed in this part pursuant to section 112(b) of the Act. This section explains the applicability of such standards to sources affected by them. The standards in this part are independent of NESHAP contained in 40 CFR part 61. The NESHAP in part 61 promulgated by signature of the Administrator before November 15, 1990 (i.e., the date of enactment of the Clean Air Act Amendments of 1990) remain in effect until they are amended, if appropriate, and added to this part.
- (3) No emission standard or other requirement established under this part shall be interpreted, construed, or applied to diminish or replace the requirements of a more stringent emission limitation or other applicable requirement established by the Administrator pursuant to other authority of the Act (section 111, part C or D or any other authority of this Act), or a standard issued under State authority. The Administrator may specify in a specific standard under this part that facilities subject to other provisions under the Act need only comply with the provisions of that standard.
- (4)
 - (i) Each relevant standard in this part 63 must identify explicitly whether each provision in this subpart A is or is not included in such relevant standard.
 - (ii) If a relevant part 63 standard incorporates the requirements of 40 CFR part 60, part 61 or other part 63 standards, the relevant part 63 standard must identify explicitly the applicability of each corresponding part 60, part 61, or other part 63 subpart A (General) provision.
 - (iii) The General Provisions in this subpart A do not apply to regulations developed pursuant to section 112(r) of the amended Act, unless otherwise specified in those regulations.
- (5) [Reserved]
- (6) To obtain the most current list of categories of sources to be regulated under section 112 of the Act, or to obtain the most recent regulation promulgation schedule established pursuant to section 112(e) of the Act, contact the Office of the Director, Emission Standards Division, Office of Air Quality Planning and Standards, U.S. EPA (MD-13), Research Triangle Park, North Carolina 27711.
- (7)-(9) [Reserved]
- (10) For the purposes of this part, time periods specified in days shall be measured in calendar days, even if the word "calendar" is absent, unless otherwise specified in an applicable requirement.
- (11) For the purposes of this part, if an explicit postmark deadline is not specified in an applicable requirement for the submittal of a notification, application, test plan, report, or other written communication to the Administrator, the owner or operator shall postmark the submittal on or before the number of days specified in the applicable requirement. For example, if a notification must be submitted 15 days before a particular event is scheduled to take place, the notification shall be postmarked on or before 15 days preceding the event; likewise, if a notification must be submitted 15 days after a particular event takes place, the notification shall be postmarked on or before 15 days following the end of the event. The use of reliable non-Government mail carriers that provide indications of verifiable delivery of information required to be submitted to the Administrator, similar to the postmark provided by the U.S. Postal Service, or alternative means of delivery agreed to by the permitting authority, is acceptable.

- (12) Notwithstanding time periods or postmark deadlines specified in this part for the submittal of information to the Administrator by an owner or operator, or the review of such information by the Administrator, such time periods or deadlines may be changed by mutual agreement between the owner or operator and the Administrator. Procedures governing the implementation of this provision are specified in § 63.9(i).

(b) Initial applicability determination for this part.

- (1) The provisions of this part apply to the owner or operator of any stationary source that—
 - (i) Emits or has the potential to emit any hazardous air pollutant listed in or pursuant to section 112(b) of the Act; and
 - (ii) Is subject to any standard, limitation, prohibition, or other federally enforceable requirement established pursuant to this part.
- (2) [Reserved]
- (3) An owner or operator of a stationary source who is in the relevant source category and who determines that the source is not subject to a relevant standard or other requirement established under this part must keep a record as specified in § 63.10(b)(3).

(c) Applicability of this part after a relevant standard has been set under this part.

- (1) If a relevant standard has been established under this part, the owner or operator of an affected source must comply with the provisions of that standard and of this subpart as provided in paragraph (a)(4) of this section.
- (2) Except as provided in § 63.10(b)(3), if a relevant standard has been established under this part, the owner or operator of an affected source may be required to obtain a title V permit from a permitting authority in the State in which the source is located. Emission standards promulgated in this part for area sources pursuant to section 112(c)(3) of the Act will specify whether—
 - (i) States will have the option to exclude area sources affected by that standard from the requirement to obtain a title V permit (i.e., the standard will exempt the category of area sources altogether from the permitting requirement);
 - (ii) States will have the option to defer permitting of area sources in that category until the Administrator takes rulemaking action to determine applicability of the permitting requirements; or
 - (iii) If a standard fails to specify what the permitting requirements will be for area sources affected by such a standard, then area sources that are subject to the standard will be subject to the requirement to obtain a title V permit without any deferral.
- (3)-(4) [Reserved]
- (5) If an area source that otherwise would be subject to an emission standard or other requirement established under this part if it were a major source subsequently increases its emissions of hazardous air pollutants (or its potential to emit hazardous air pollutants) such that the source is a major source that is subject to the emission standard or other requirement, such source also shall be subject to the notification requirements of this subpart.

- (6) A major source may become an area source at any time upon reducing its emissions of and potential to emit hazardous air pollutants, as defined in this subpart, to below the major source thresholds established in § 63.2, subject to the provisions in paragraphs (c)(6)(i) and (ii) of this section.
 - (i) A major source reclassifying to area source status is subject to the applicability of standards, compliance dates and notification requirements specified in (c)(6)(i)(A) of this section. An area source that previously was a major source and becomes a major source again is subject to the applicability of standards, compliance dates, and notification requirements specified in (c)(6)(i)(B) of this section:
 - (A) A major source reclassifying to area source status under this part remains subject to any applicable major source requirements established under this part until the reclassification becomes effective. After the reclassification becomes effective, the source is subject to any applicable area source requirements established under this part immediately, provided the compliance date for the area source requirements has passed. The owner or operator of a major source that becomes an area source subject to newly applicable area source requirements under this part must comply with the initial notification requirements pursuant to § 63.9(b). The owner or operator of a major source that becomes an area source must also provide to the Administrator any change in the information already provided under § 63.9(b) per § 63.9(j).
 - (B) An area source that previously was a major source under this part and that becomes a major source again is subject to the applicable major source requirements established under this part immediately upon becoming a major source again, provided the compliance date for the major source requirements has passed, notwithstanding any provision within the applicable subparts. The owner or operator of an area source that becomes a major source again must comply with the initial notification pursuant to § 63.9(b). The owner or operator must also provide to the Administrator any change in the information already provided under § 63.9(b) per § 63.9(j).
 - (ii) Becoming an area source does not absolve a source subject to an enforcement action or investigation for major source violations or infractions from the consequences of any actions occurring when the source was major. Becoming a major source does not absolve a source subject to an enforcement action or investigation for area source violations or infractions from the consequences of any actions occurring when the source was an area source.
 - (iii) After September 10, 2024, affected sources subject to the following 40 CFR part 63 subparts on September 10, 2024, must remain subject to those subparts, and any modifications thereafter, even if the source becomes an area source by reducing both its actual emissions and potential to emit hazardous air pollutants to below major source thresholds: F, G, H, I, L, R, X, CC, GG, II, JJ, KK, LL, MM, EEE, JJJ, LLL, MMM, RRR, UUU, FFFF, JJJJ, MMMM, PPPP, ZZZZ, CCCCC, DDDDD, FFFFF, IIIII, LLLLL, YYYYY, JJJJJ, EEEEE.
- (d) [Reserved]
- (e) If the Administrator promulgates an emission standard under section 112(d) or (h) of the Act that is applicable to a source subject to an emission limitation by permit established under section 112(j) of the Act, and the requirements under the section 112(j) emission limitation are substantially as effective as the promulgated emission standard, the owner or operator may request the permitting authority to revise the source's title V permit to reflect that the emission limitation in the permit satisfies the requirements of the promulgated emission standard. The process by which the permitting authority determines whether the

section 112(j) emission limitation is substantially as effective as the promulgated emission standard must include, consistent with part 70 or 71 of this chapter, the opportunity for full public, EPA, and affected State review (including the opportunity for EPA's objection) prior to the permit revision being finalized. A negative determination by the permitting authority constitutes final action for purposes of review and appeal under the applicable title V operating permit program.

[59 FR 12430, Mar. 16, 1994, as amended at 67 FR 16595, Apr. 5, 2002; 85 FR 73885, Nov. 19, 2020; 89 FR 73307, Sept. 10, 2024; 90 FR 1041, Jan. 7, 2025]

§ 63.2 Definitions.

The terms used in this part are defined in the Act or in this section as follows:

Act means the Clean Air Act (42 U.S.C. 7401 *et seq.*, as amended by Pub. L. 101-549, 104 Stat. 2399).

Actual emissions is defined in subpart D of this part for the purpose of granting a compliance extension for an early reduction of hazardous air pollutants.

Administrator means the Administrator of the United States Environmental Protection Agency or his or her authorized representative (e.g., a State that has been delegated the authority to implement the provisions of this part).

Affected source, for the purposes of this part, means the collection of equipment, activities, or both within a single contiguous area and under common control that is included in a section 112(c) source category or subcategory for which a section 112(d) standard or other relevant standard is established pursuant to section 112 of the Act. Each relevant standard will define the "affected source," as defined in this paragraph unless a different definition is warranted based on a published justification as to why this definition would result in significant administrative, practical, or implementation problems and why the different definition would resolve those problems. The term "affected source," as used in this part, is separate and distinct from any other use of that term in EPA regulations such as those implementing title IV of the Act. Affected source may be defined differently for part 63 than affected facility and stationary source in parts 60 and 61, respectively. This definition of "affected source," and the procedures for adopting an alternative definition of "affected source," shall apply to each section 112(d) standard for which the initial proposed rule is signed by the Administrator after June 30, 2002.

Alternative emission limitation means conditions established pursuant to sections 112(i)(5) or 112(i)(6) of the Act by the Administrator or by a State with an approved permit program.

Alternative emission standard means an alternative means of emission limitation that, after notice and opportunity for public comment, has been demonstrated by an owner or operator to the Administrator's satisfaction to achieve a reduction in emissions of any air pollutant at least equivalent to the reduction in emissions of such pollutant achieved under a relevant design, equipment, work practice, or operational emission standard, or combination thereof, established under this part pursuant to section 112(h) of the Act.

Alternative test method means any method of sampling and analyzing for an air pollutant that has been demonstrated to the Administrator's satisfaction, using Method 301 in appendix A of this part, to produce results adequate for the Administrator's determination that it may be used in place of a test method specified in this part.

Approved permit program means a State permit program approved by the Administrator as meeting the requirements of part 70 of this chapter or a Federal permit program established in this chapter pursuant to title V of the Act (42 U.S.C. 7661).

Area source means any stationary source of hazardous air pollutants that is not a major source as defined in this part.

Commenced means, with respect to construction or reconstruction of an affected source, that an owner or operator has undertaken a continuous program of construction or reconstruction or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or reconstruction.

Compliance date means the date by which an affected source is required to be in compliance with a relevant standard, limitation, prohibition, or any federally enforceable requirement established by the Administrator (or a State with an approved permit program) pursuant to section 112 of the Act.

Compliance schedule means:

- (1) In the case of an affected source that is in compliance with all applicable requirements established under this part, a statement that the source will continue to comply with such requirements; or
- (2) In the case of an affected source that is required to comply with applicable requirements by a future date, a statement that the source will meet such requirements on a timely basis and, if required by an applicable requirement, a detailed schedule of the dates by which each step toward compliance will be reached; or
- (3) In the case of an affected source not in compliance with all applicable requirements established under this part, a schedule of remedial measures, including an enforceable sequence of actions or operations with milestones and a schedule for the submission of certified progress reports, where applicable, leading to compliance with a relevant standard, limitation, prohibition, or any federally enforceable requirement established pursuant to section 112 of the Act for which the affected source is not in compliance. This compliance schedule shall resemble and be at least as stringent as that contained in any judicial consent decree or administrative order to which the source is subject. Any such schedule of compliance shall be supplemental to, and shall not sanction noncompliance with, the applicable requirements on which it is based.

Construction means the on-site fabrication, erection, or installation of an affected source. Construction does not include the removal of all equipment comprising an affected source from an existing location and reinstallation of such equipment at a new location. The owner or operator of an existing affected source that is relocated may elect not to reinstall minor ancillary equipment including, but not limited to, piping, ductwork, and valves. However, removal and reinstallation of an affected source will be construed as reconstruction if it satisfies the criteria for reconstruction as defined in this section. The costs of replacing minor ancillary equipment must be considered in determining whether the existing affected source is reconstructed.

Continuous emission monitoring system (CEMS) means the total equipment that may be required to meet the data acquisition and availability requirements of this part, used to sample, condition (if applicable), analyze, and provide a record of emissions.

Continuous monitoring system (CMS) is a comprehensive term that may include, but is not limited to, continuous emission monitoring systems, continuous opacity monitoring systems, continuous parameter monitoring systems, or other manual or automatic monitoring that is used for demonstrating compliance with an applicable regulation on a continuous basis as defined by the regulation.

Continuous opacity monitoring system (COMS) means a continuous monitoring system that measures the opacity of emissions.

Continuous parameter monitoring system means the total equipment that may be required to meet the data acquisition and availability requirements of this part, used to sample, condition (if applicable), analyze, and provide a record of process or control system parameters.

Effective date means:

- (1) With regard to an emission standard established under this part, the date of promulgation in the FEDERAL REGISTER of such standard; or
- (2) With regard to an alternative emission limitation or equivalent emission limitation determined by the Administrator (or a State with an approved permit program), the date that the alternative emission limitation or equivalent emission limitation becomes effective according to the provisions of this part.

Emission standard means a national standard, limitation, prohibition, or other regulation promulgated in a subpart of this part pursuant to sections 112(d), 112(h), or 112(f) of the Act.

Emissions averaging is a way to comply with the emission limitations specified in a relevant standard, whereby an affected source, if allowed under a subpart of this part, may create emission credits by reducing emissions from specific points to a level below that required by the relevant standard, and those credits are used to offset emissions from points that are not controlled to the level required by the relevant standard.

EPA means the United States Environmental Protection Agency.

Equivalent emission limitation means any maximum achievable control technology emission limitation or requirements which are applicable to a major source of hazardous air pollutants and are adopted by the Administrator (or a State with an approved permit program) on a case-by-case basis, pursuant to section 112(g) or (j) of the Act.

Excess emissions and continuous monitoring system performance report is a report that must be submitted periodically by an affected source in order to provide data on its compliance with relevant emission limits, operating parameters, and the performance of its continuous parameter monitoring systems.

Existing source means any affected source that is not a new source.

Federally enforceable means all limitations and conditions that are enforceable by the Administrator and citizens under the Act or that are enforceable under other statutes administered by the Administrator. Examples of federally enforceable limitations and conditions include, but are not limited to:

- (1) Emission standards, alternative emission standards, alternative emission limitations, and equivalent emission limitations established pursuant to section 112 of the Act as amended in 1990;
- (2) New source performance standards established pursuant to section 111 of the Act, and emission standards established pursuant to section 112 of the Act before it was amended in 1990;

- (3) All terms and conditions in a title V permit, including any provisions that limit a source's potential to emit, unless expressly designated as not federally enforceable;
- (4) Limitations and conditions that are part of an approved State Implementation Plan (SIP) or a Federal Implementation Plan (FIP);
- (5) Limitations and conditions that are part of a Federal construction permit issued under 40 CFR 52.21 or any construction permit issued under regulations approved by the EPA in accordance with 40 CFR part 51;
- (6) Limitations and conditions that are part of an operating permit where the permit and the permitting program pursuant to which it was issued meet all of the following criteria:
 - (i) The operating permit program has been submitted to and approved by EPA into a State implementation plan (SIP) under section 110 of the CAA;
 - (ii) The SIP imposes a legal obligation that operating permit holders adhere to the terms and limitations of such permits and provides that permits which do not conform to the operating permit program requirements and the requirements of EPA's underlying regulations may be deemed not "federally enforceable" by EPA;
 - (iii) The operating permit program requires that all emission limitations, controls, and other requirements imposed by such permits will be at least as stringent as any other applicable limitations and requirements contained in the SIP or enforceable under the SIP, and that the program may not issue permits that waive, or make less stringent, any limitations or requirements contained in or issued pursuant to the SIP, or that are otherwise "federally enforceable";
 - (iv) The limitations, controls, and requirements in the permit in question are permanent, quantifiable, and otherwise enforceable as a practical matter; and
 - (v) The permit in question was issued only after adequate and timely notice and opportunity for comment for EPA and the public.
- (7) Limitations and conditions in a State rule or program that has been approved by the EPA under subpart E of this part for the purposes of implementing and enforcing section 112; and
- (8) Individual consent agreements that the EPA has legal authority to create.

Fixed capital cost means the capital needed to provide all the depreciable components of an existing source.

Force majeure means, for purposes of § 63.7, an event that will be or has been caused by circumstances beyond the control of the affected facility, its contractors, or any entity controlled by the affected facility that prevents the owner or operator from complying with the regulatory requirement to conduct performance tests within the specified timeframe despite the affected facility's best efforts to fulfill the obligation. Examples of such events are acts of nature, acts of war or terrorism, or equipment failure or safety hazard beyond the control of the affected facility.

Fugitive emissions means those emissions from a stationary source that could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening. Under section 112 of the Act, all fugitive emissions are to be considered in determining whether a stationary source is a major source.

Hazardous air pollutant means any air pollutant listed in or pursuant to section 112(b) of the Act.

Issuance of a part 70 permit will occur, if the State is the permitting authority, in accordance with the requirements of part 70 of this chapter and the applicable, approved State permit program. When the EPA is the permitting authority, issuance of a title V permit occurs immediately after the EPA takes final action on the final permit.

Major source means any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants, unless the Administrator establishes a lesser quantity, or in the case of radionuclides, different criteria from those specified in this sentence.

Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential to cause, the emission limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

Monitoring means the collection and use of measurement data or other information to control the operation of a process or pollution control device or to verify a work practice standard relative to assuring compliance with applicable requirements. Monitoring is composed of four elements:

- (1) Indicator(s) of performance—the parameter or parameters you measure or observe for demonstrating proper operation of the pollution control measures or compliance with the applicable emissions limitation or standard. Indicators of performance may include direct or predicted emissions measurements (including opacity), operational parametric values that correspond to process or control device (and capture system) efficiencies or emissions rates, and recorded findings of inspection of work practice activities, materials tracking, or design characteristics. Indicators may be expressed as a single maximum or minimum value, a function of process variables (for example, within a range of pressure drops), a particular operational or work practice status (for example, a damper position, completion of a waste recovery task, materials tracking), or an interdependency between two or among more than two variables.
- (2) Measurement techniques—the means by which you gather and record information of or about the indicators of performance. The components of the measurement technique include the detector type, location and installation specifications, inspection procedures, and quality assurance and quality control measures. Examples of measurement techniques include continuous emission monitoring systems, continuous opacity monitoring systems, continuous parametric monitoring systems, and manual inspections that include making records of process conditions or work practices.
- (3) Monitoring frequency—the number of times you obtain and record monitoring data over a specified time interval. Examples of monitoring frequencies include at least four points equally spaced for each hour for continuous emissions or parametric monitoring systems, at least every 10 seconds for continuous opacity monitoring systems, and at least once per operating day (or week, month, etc.) for work practice or design inspections.
- (4) Averaging time—the period over which you average and use data to verify proper operation of the pollution control approach or compliance with the emissions limitation or standard. Examples of averaging time include a 3-hour average in units of the emissions limitation, a 30-day rolling average emissions value, a daily average of a control device operational parametric range, and an instantaneous alarm.

New affected source means the collection of equipment, activities, or both within a single contiguous area and under common control that is included in a section 112(c) source category or subcategory that is subject to a section 112(d) or other relevant standard for new sources. This definition of "new affected source," and the criteria to be utilized in implementing it, shall apply to each section 112(d) standard for which the initial proposed rule is signed by the Administrator after June 30, 2002. Each relevant standard will define the term "new affected source," which will be the same as the "affected source" unless a different collection is warranted based on consideration of factors including:

- (1) Emission reduction impacts of controlling individual sources versus groups of sources;
- (2) Cost effectiveness of controlling individual equipment;
- (3) Flexibility to accommodate common control strategies;
- (4) Cost/benefits of emissions averaging;
- (5) Incentives for pollution prevention;
- (6) Feasibility and cost of controlling processes that share common equipment (e.g., product recovery devices);
- (7) Feasibility and cost of monitoring; and
- (8) Other relevant factors.

New source means any affected source the construction or reconstruction of which is commenced after the Administrator first proposes a relevant emission standard under this part establishing an emission standard applicable to such source.

One-hour period, unless otherwise defined in an applicable subpart, means any 60-minute period commencing on the hour.

Opacity means the degree to which emissions reduce the transmission of light and obscure the view of an object in the background. For continuous opacity monitoring systems, opacity means the fraction of incident light that is attenuated by an optical medium.

Owner or operator means any person who owns, leases, operates, controls, or supervises a stationary source.

Performance audit means a procedure to analyze blind samples, the content of which is known by the Administrator, simultaneously with the analysis of performance test samples in order to provide a measure of test data quality.

Performance evaluation means the conduct of relative accuracy testing, calibration error testing, and other measurements used in validating the continuous monitoring system data.

Performance test means the collection of data resulting from the execution of a test method (usually three emission test runs) used to demonstrate compliance with a relevant emission standard as specified in the performance test section of the relevant standard.

Permit modification means a change to a title V permit as defined in regulations codified in this chapter to implement title V of the Act (42 U.S.C. 7661).

Permit program means a comprehensive State operating permit system established pursuant to title V of the Act (42 U.S.C. 7661) and regulations codified in part 70 of this chapter and applicable State regulations, or a comprehensive Federal operating permit system established pursuant to title V of the Act and regulations codified in this chapter.

Permit revision means any permit modification or administrative permit amendment to a title V permit as defined in regulations codified in this chapter to implement title V of the Act (42 U.S.C. 7661).

Permitting authority means:

- (1) The State air pollution control agency, local agency, other State agency, or other agency authorized by the Administrator to carry out a permit program under part 70 of this chapter; or
- (2) The Administrator, in the case of EPA-implemented permit programs under title V of the Act (42 U.S.C. 7661).

Pollution Prevention means *source reduction* as defined under the Pollution Prevention Act (42 U.S.C. 13101-13109). The definition is as follows:

- (1) **Source reduction** is any practice that:
 - (i) Reduces the amount of any hazardous substance, pollutant, or contaminant entering any waste stream or otherwise released into the environment (including fugitive emissions) prior to recycling, treatment, or disposal; and
 - (ii) Reduces the hazards to public health and the environment associated with the release of such substances, pollutants, or contaminants.
- (2) The term *source reduction* includes equipment or technology modifications, process or procedure modifications, reformulation or redesign of products, substitution of raw materials, and improvements in housekeeping, maintenance, training, or inventory control.
- (3) The term *source reduction* does not include any practice that alters the physical, chemical, or biological characteristics or the volume of a hazardous substance, pollutant, or contaminant through a process or activity which itself is not integral to and necessary for the production of a product or the providing of a service.

Potential to emit means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the stationary source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is enforceable.

Reconstruction, unless otherwise defined in a relevant standard, means the replacement of components of an affected or a previously nonaffected source to such an extent that:

- (1) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable new source; and
- (2) It is technologically and economically feasible for the reconstructed source to meet the relevant standard(s) established by the Administrator (or a State) pursuant to section 112 of the Act. Upon reconstruction, an affected source, or a stationary source that becomes an affected source, is subject to relevant standards for new sources, including compliance dates, irrespective of any change in emissions of hazardous air pollutants from that source.

Regulation promulgation schedule means the schedule for the promulgation of emission standards under this part, established by the Administrator pursuant to section 112(e) of the Act and published in the FEDERAL REGISTER.

Relevant standard means:

- (1) An emission standard;
- (2) An alternative emission standard;
- (3) An alternative emission limitation; or
- (4) An equivalent emission limitation established pursuant to section 112 of the Act that applies to the collection of equipment, activities, or both regulated by such standard or limitation. A relevant standard may include or consist of a design, equipment, work practice, or operational requirement, or other measure, process, method, system, or technique (including prohibition of emissions) that the Administrator (or a State) establishes for new or existing sources to which such standard or limitation applies. Every relevant standard established pursuant to section 112 of the Act includes subpart A of this part, as provided by § 63.1(a)(4), and all applicable appendices of this part or of other parts of this chapter that are referenced in that standard.

Responsible official means one of the following:

- (1) For a corporation: A president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities and either:
 - (i) The facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars); or
 - (ii) The delegation of authority to such representative is approved in advance by the Administrator.
- (2) For a partnership or sole proprietorship: a general partner or the proprietor, respectively.
- (3) For a municipality, State, Federal, or other public agency: either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of the EPA).
- (4) For affected sources (as defined in this part) applying for or subject to a title V permit: “responsible official” shall have the same meaning as defined in part 70 or Federal title V regulations in this chapter (42 U.S.C. 7661), whichever is applicable.

Run means one of a series of emission or other measurements needed to determine emissions for a representative operating period or cycle as specified in this part.

Shutdown means the cessation of operation of an affected source or portion of an affected source for any purpose.

Six-minute period means, with respect to opacity determinations, any one of the 10 equal parts of a 1-hour period.

Source at a Performance Track member facility means a major or area source located at a facility which has been accepted by EPA for membership in the Performance Track Program (as described at www.epa.gov/PerformanceTrack) and is still a member of the Program. The Performance Track Program is a voluntary program that encourages continuous environmental improvement through the use of environmental management systems, local community outreach, and measurable results.

Standard conditions means a temperature of 293 K (68 °F) and a pressure of 101.3 kilopascals (29.92 in. Hg).

Startup means the setting in operation of an affected source or portion of an affected source for any purpose.

State means all non-Federal authorities, including local agencies, interstate associations, and State-wide programs, that have delegated authority to implement:

- (1) The provisions of this part and/or
- (2) the permit program established under part 70 of this chapter. The term State shall have its conventional meaning where clear from the context.

Stationary source means any building, structure, facility, or installation which emits or may emit any air pollutant.

Test method means the validated procedure for sampling, preparing, and analyzing for an air pollutant specified in a relevant standard as the performance test procedure. The test method may include methods described in an appendix of this chapter, test methods incorporated by reference in this part, or methods validated for an application through procedures in Method 301 of appendix A of this part.

Title V permit means any permit issued, renewed, or revised pursuant to Federal or State regulations established to implement title V of the Act (42 U.S.C. 7661). A title V permit issued by a State permitting authority is called a part 70 permit in this part.

Visible emission means the observation of an emission of opacity or optical density above the threshold of vision.

Working day means any day on which Federal Government offices (or State government offices for a State that has obtained delegation under section 112(l)) are open for normal business. Saturdays, Sundays, and official Federal (or where delegated, State) holidays are not working days.

[59 FR 12430, Mar. 16, 1994, as amended at 67 FR 16596, Apr. 5, 2002; 68 FR 32600, May 30, 2003; 69 FR 21752, Apr. 22, 2004; 72 FR 27443, May 16, 2007; 85 FR 63418, Oct. 7, 2020; 85 FR 73885, Nov. 19, 2020]

§ 63.3 Units and abbreviations.

Used in this part are abbreviations and symbols of units of measure. These are defined as follows:

(a) **System International (SI) units of measure:**

A = ampere

g = gram

Hz = hertz

J = joule

°K = degree Kelvin

kg = kilogram

l = liter

m = meter

m^3 = cubic meter

mg = milligram = 10^{-3} gram

ml = milliliter = 10^{-3} liter

mm = millimeter = 10^{-3} meter

Mg = megagram = 10^6 gram = metric ton

MJ = megajoule

mol = mole

N = newton

ng = nanogram = 10^{-9} gram

nm = nanometer = 10^{-9} meter

Pa = pascal

s = second

V = volt

W = watt

Ω = ohm

μg = microgram = 10^{-6} gram

μl = microliter = 10^{-6} liter

(b) *Other units of measure:*

Btu = British thermal unit

$^{\circ}C$ = degree Celsius (centigrade)

cal = calorie

cfm = cubic feet per minute

cc = cubic centimeter

cu ft = cubic feet

d = day

dcf = dry cubic feet

dcm = dry cubic meter

dscf = dry cubic feet at standard conditions

dscm = dry cubic meter at standard conditions

eq = equivalent

°F degree Fahrenheit

ft = feet

ft² = square feet

ft³ = cubic feet

gal = gallon

gr = grain

g-eq = gram equivalent

g-mole = gram mole

hr = hour

in. = inch

in. H₂O = inches of water

K = 1,000

kcal = kilocalorie

lb = pound

lpm = liter per minute

meq = milliequivalent

min = minute

MW = molecular weight

oz = ounces

ppb = parts per billion

ppbw = parts per billion by weight

ppbv = parts per billion by volume

ppm = parts per million

ppmw = parts per million by weight

ppmv = parts per million by volume

psia = pounds per square inch absolute

psig = pounds per square inch gage

°R = degree Rankine

scf = cubic feet at standard conditions

scfh = cubic feet at standard conditions per hour

scm = cubic meter at standard conditions

scmm = cubic meter at standard conditions per minute

sec = second

sq ft = square feet

std = at standard conditions

v/v = volume per volume

yd² = square yards

yr = year

(c) Miscellaneous:

act = actual

avg = average

I.D. = inside diameter

M = molar

N = normal

O.D. = outside diameter

% = percent

[59 FR 12430, Mar. 16, 1994, as amended at 67 FR 16598, Apr. 5, 2002]

§ 63.4 Prohibited activities and circumvention.

(a) *Prohibited activities.*

- (1) No owner or operator subject to the provisions of this part must operate any affected source in violation of the requirements of this part. Affected sources subject to and in compliance with either an extension of compliance or an exemption from compliance are not in violation of the requirements of this part. An extension of compliance can be granted by the Administrator under this part; by a State with an approved permit program; or by the President under section 112(i)(4) of the Act.
- (2) No owner or operator subject to the provisions of this part shall fail to keep records, notify, report, or revise reports as required under this part.
- (3)-(5) [Reserved]

(b) *Circumvention.* No owner or operator subject to the provisions of this part shall build, erect, install, or use any article, machine, equipment, or process to conceal an emission that would otherwise constitute noncompliance with a relevant standard. Such concealment includes, but is not limited to—

- (1) The use of diluents to achieve compliance with a relevant standard based on the concentration of a pollutant in the effluent discharged to the atmosphere;
- (2) The use of gaseous diluents to achieve compliance with a relevant standard for visible emissions; and

(c) *Fragmentation.* Fragmentation after November 15, 1990 which divides ownership of an operation, within the same facility among various owners where there is no real change in control, will not affect applicability. The owner and operator must not use fragmentation or phasing of reconstruction activities (i.e., intentionally dividing reconstruction into multiple parts for purposes of avoiding new source requirements) to avoid becoming subject to new source requirements.

[59 FR 12430, Mar. 16, 1994, as amended at 67 FR 16598, Apr. 5, 2002]

§ 63.5 Preconstruction review and notification requirements.

(a) *Applicability.*

- (1) This section implements the preconstruction review requirements of section 112(i)(1). After the effective date of a relevant standard, promulgated pursuant to section 112(d), (f), or (h) of the Act, under this part, the preconstruction review requirements in this section apply to the owner or operator of new affected sources and reconstructed affected sources that are major-emitting as specified in this section. New and reconstructed affected sources that commence construction or reconstruction before the effective date of a relevant standard are not subject to the preconstruction review requirements specified in paragraphs (b)(3), (d), and (e) of this section.
- (2) This section includes notification requirements for new affected sources and reconstructed affected sources that are not major-emitting affected sources and that are or become subject to a relevant promulgated emission standard after the effective date of a relevant standard promulgated under this part.

(b) ***Requirements for existing, newly constructed, and reconstructed sources.***

- (1) A new affected source for which construction commences after proposal of a relevant standard is subject to relevant standards for new affected sources, including compliance dates. An affected source for which reconstruction commences after proposal of a relevant standard is subject to relevant standards for new sources, including compliance dates, irrespective of any change in emissions of hazardous air pollutants from that source.
- (2) [Reserved]
- (3) After the effective date of any relevant standard promulgated by the Administrator under this part, no person may, without obtaining written approval in advance from the Administrator in accordance with the procedures specified in paragraphs (d) and (e) of this section, do any of the following:
 - (i) Construct a new affected source that is major-emitting and subject to such standard;
 - (ii) Reconstruct an affected source that is major-emitting and subject to such standard; or
 - (iii) Reconstruct a major source such that the source becomes an affected source that is major-emitting and subject to the standard.
- (4) After the effective date of any relevant standard promulgated by the Administrator under this part, an owner or operator who constructs a new affected source that is not major-emitting or reconstructs an affected source that is not major-emitting that is subject to such standard, or reconstructs a source such that the source becomes an affected source subject to the standard, must notify the Administrator of the intended construction or reconstruction. The notification must be submitted in accordance with the procedures in § 63.9(b).
- (5) [Reserved]
- (6) After the effective date of any relevant standard promulgated by the Administrator under this part, equipment added (or a process change) to an affected source that is within the scope of the definition of affected source under the relevant standard must be considered part of the affected source and subject to all provisions of the relevant standard established for that affected source.

(c) [Reserved]

(d) ***Application for approval of construction or reconstruction.*** The provisions of this paragraph implement section 112(i)(1) of the Act.

(1) ***General application requirements.***

- (i) An owner or operator who is subject to the requirements of paragraph (b)(3) of this section must submit to the Administrator an application for approval of the construction or reconstruction. The application must be submitted as soon as practicable before actual construction or reconstruction begins. The application for approval of construction or reconstruction may be used to fulfill the initial notification requirements of § 63.9(b)(5). The owner or operator may submit the application for approval well in advance of the date actual construction or reconstruction begins in order to ensure a timely review by the Administrator and that the planned date to begin will not be delayed.
 - (ii) A separate application shall be submitted for each construction or reconstruction. Each application for approval of construction or reconstruction shall include at a minimum:
 - (A) The applicant's name and address;
 - (B) A notification of intention to construct a new major affected source or make any physical or operational change to a major affected source that may meet or has been determined to meet the criteria for a reconstruction, as defined in § 63.2 or in the relevant standard;
 - (C) The address (i.e., physical location) or proposed address of the source;
 - (D) An identification of the relevant standard that is the basis of the application;
 - (E) The expected date of the beginning of actual construction or reconstruction;
 - (F) The expected completion date of the construction or reconstruction;
 - (G) [Reserved]
 - (H) The type and quantity of hazardous air pollutants emitted by the source, reported in units and averaging times and in accordance with the test methods specified in the relevant standard, or if actual emissions data are not yet available, an estimate of the type and quantity of hazardous air pollutants expected to be emitted by the source reported in units and averaging times specified in the relevant standard. The owner or operator may submit percent reduction information if a relevant standard is established in terms of percent reduction. However, operating parameters, such as flow rate, shall be included in the submission to the extent that they demonstrate performance and compliance; and
 - (I) [Reserved]
 - (J) Other information as specified in paragraphs (d)(2) and (d)(3) of this section.
 - (iii) An owner or operator who submits estimates or preliminary information in place of the actual emissions data and analysis required in paragraphs (d)(1)(ii)(H) and (d)(2) of this section shall submit the actual, measured emissions data and other correct information as soon as available but no later than with the notification of compliance status required in § 63.9(h) (see § 63.9(h)(5)).
- (2) **Application for approval of construction.** Each application for approval of construction must include, in addition to the information required in paragraph (d)(1)(ii) of this section, technical information describing the proposed nature, size, design, operating design capacity, and method of operation of the source, including an identification of each type of emission point for each type of hazardous air pollutant that is emitted (or could reasonably be anticipated to be emitted) and a description of the planned air pollution control system (equipment or method) for each emission point. The description of the equipment to be used for the control of emissions must include each control device for each

hazardous air pollutant and the estimated control efficiency (percent) for each control device. The description of the method to be used for the control of emissions must include an estimated control efficiency (percent) for that method. Such technical information must include calculations of emission estimates in sufficient detail to permit assessment of the validity of the calculations.

- (3) **Application for approval of reconstruction.** Each application for approval of reconstruction shall include, in addition to the information required in paragraph (d)(1)(ii) of this section—
- (i) A brief description of the affected source and the components that are to be replaced;
 - (ii) A description of present and proposed emission control systems (i.e., equipment or methods). The description of the equipment to be used for the control of emissions shall include each control device for each hazardous air pollutant and the estimated control efficiency (percent) for each control device. The description of the method to be used for the control of emissions shall include an estimated control efficiency (percent) for that method. Such technical information shall include calculations of emission estimates in sufficient detail to permit assessment of the validity of the calculations;
 - (iii) An estimate of the fixed capital cost of the replacements and of constructing a comparable entirely new source;
 - (iv) The estimated life of the affected source after the replacements; and
 - (v) A discussion of any economic or technical limitations the source may have in complying with relevant standards or other requirements after the proposed replacements. The discussion shall be sufficiently detailed to demonstrate to the Administrator's satisfaction that the technical or economic limitations affect the source's ability to comply with the relevant standard and how they do so.
 - (vi) If in the application for approval of reconstruction the owner or operator designates the affected source as a reconstructed source and declares that there are no economic or technical limitations to prevent the source from complying with all relevant standards or other requirements, the owner or operator need not submit the information required in paragraphs (d)(3)(iii) through (d)(3)(v) of this section.
- (4) **Additional information.** The Administrator may request additional relevant information after the submittal of an application for approval of construction or reconstruction.

(e) **Approval of construction or reconstruction.**

- (1)
- (i) If the Administrator determines that, if properly constructed, or reconstructed, and operated, a new or existing source for which an application under paragraph (d) of this section was submitted will not cause emissions in violation of the relevant standard(s) and any other federally enforceable requirements, the Administrator will approve the construction or reconstruction.
 - (ii) In addition, in the case of reconstruction, the Administrator's determination under this paragraph will be based on:
 - (A) The fixed capital cost of the replacements in comparison to the fixed capital cost that would be required to construct a comparable entirely new source;

- (B) The estimated life of the source after the replacements compared to the life of a comparable entirely new source;
- (C) The extent to which the components being replaced cause or contribute to the emissions from the source; and
- (D) Any economic or technical limitations on compliance with relevant standards that are inherent in the proposed replacements.

(2)

- (i) The Administrator will notify the owner or operator in writing of approval or intention to deny approval of construction or reconstruction within 60 calendar days after receipt of sufficient information to evaluate an application submitted under paragraph (d) of this section. The 60-day approval or denial period will begin after the owner or operator has been notified in writing that his/her application is complete. The Administrator will notify the owner or operator in writing of the status of his/her application, that is, whether the application contains sufficient information to make a determination, within 30 calendar days after receipt of the original application and within 30 calendar days after receipt of any supplementary information that is submitted.
 - (ii) When notifying the owner or operator that his/her application is not complete, the Administrator will specify the information needed to complete the application and provide notice of opportunity for the applicant to present, in writing, within 30 calendar days after he/she is notified of the incomplete application, additional information or arguments to the Administrator to enable further action on the application.
- (3) Before denying any application for approval of construction or reconstruction, the Administrator will notify the applicant of the Administrator's intention to issue the denial together with—
- (i) Notice of the information and findings on which the intended denial is based; and
 - (ii) Notice of opportunity for the applicant to present, in writing, within 30 calendar days after he/she is notified of the intended denial, additional information or arguments to the Administrator to enable further action on the application.
- (4) A final determination to deny any application for approval will be in writing and will specify the grounds on which the denial is based. The final determination will be made within 60 calendar days of presentation of additional information or arguments (if the application is complete), or within 60 calendar days after the final date specified for presentation if no presentation is made.
- (5) Neither the submission of an application for approval nor the Administrator's approval of construction or reconstruction shall—
- (i) Relieve an owner or operator of legal responsibility for compliance with any applicable provisions of this part or with any other applicable Federal, State, or local requirement; or
 - (ii) Prevent the Administrator from implementing or enforcing this part or taking any other action under the Act.
- (f) *Approval of construction or reconstruction based on prior State preconstruction review.*

- (1) Preconstruction review procedures that a State utilizes for other purposes may also be utilized for purposes of this section if the procedures are substantially equivalent to those specified in this section. The Administrator will approve an application for construction or reconstruction specified in paragraphs (b)(3) and (d) of this section if the owner or operator of a new affected source or reconstructed affected source, who is subject to such requirement meets the following conditions:
 - (i) The owner or operator of the new affected source or reconstructed affected source has undergone a preconstruction review and approval process in the State in which the source is (or would be) located and has received a federally enforceable construction permit that contains a finding that the source will meet the relevant promulgated emission standard, if the source is properly built and operated.
 - (ii) Provide a statement from the State or other evidence (such as State regulations) that it considered the factors specified in paragraph (e)(1) of this section.
- (2) The owner or operator must submit to the Administrator the request for approval of construction or reconstruction under this paragraph (f)(2) no later than the application deadline specified in paragraph (d)(1) of this section (see also § 63.9(b)(2)). The owner or operator must include in the request information sufficient for the Administrator's determination. The Administrator will evaluate the owner or operator's request in accordance with the procedures specified in paragraph (e) of this section. The Administrator may request additional relevant information after the submittal of a request for approval of construction or reconstruction under this paragraph (f)(2).

[59 FR 12430, Mar. 16, 1994, as amended at 67 FR 16598, Apr. 5, 2002]

§ 63.6 Compliance with standards and maintenance requirements.

(a) *Applicability.*

- (1) The requirements in this section apply to the owner or operator of affected sources for which any relevant standard has been established pursuant to section 112 of the Act and the applicability of such requirements is set out in accordance with § 63.1(a)(4) unless—
 - (i) The Administrator (or a State with an approved permit program) has granted an extension of compliance consistent with paragraph (i) of this section; or
 - (ii) The President has granted an exemption from compliance with any relevant standard in accordance with section 112(i)(4) of the Act.
- (2) If an area source that otherwise would be subject to an emission standard or other requirement established under this part if it were a major source subsequently increases its emissions of hazardous air pollutants (or its potential to emit hazardous air pollutants) such that the source is a major source, such source shall be subject to the relevant emission standard or other requirement.

(b) *Compliance dates for new and reconstructed sources.*

- (1) Except as specified in paragraphs (b)(3) and (4) of this section, the owner or operator of a new or reconstructed affected source for which construction or reconstruction commences after proposal of a relevant standard that has an initial startup before the effective date of a relevant standard established under this part pursuant to section 112(d), (f), or (h) of the Act must comply with such standard not later than the standard's effective date.

- (2) Except as specified in paragraphs (b)(3) and (4) of this section, the owner or operator of a new or reconstructed affected source that has an initial startup after the effective date of a relevant standard established under this part pursuant to section 112(d), (f), or (h) of the Act must comply with such standard upon startup of the source.
- (3) The owner or operator of an affected source for which construction or reconstruction is commenced after the proposal date of a relevant standard established under this part pursuant to section 112(d), 112(f), or 112(h) of the Act but before the effective date (that is, promulgation) of such standard shall comply with the relevant emission standard not later than the date 3 years after the effective date if:
 - (i) The promulgated standard (that is, the relevant standard) is more stringent than the proposed standard; for purposes of this paragraph, a finding that controls or compliance methods are “more stringent” must include control technologies or performance criteria and compliance or compliance assurance methods that are different but are substantially equivalent to those required by the promulgated rule, as determined by the Administrator (or his or her authorized representative); and
 - (ii) The owner or operator complies with the standard as proposed during the 3-year period immediately after the effective date.
- (4) The owner or operator of an affected source for which construction or reconstruction is commenced after the proposal date of a relevant standard established pursuant to section 112(d) of the Act but before the proposal date of a relevant standard established pursuant to section 112(f) shall not be required to comply with the section 112(f) emission standard until the date 10 years after the date construction or reconstruction is commenced, except that, if the section 112(f) standard is promulgated more than 10 years after construction or reconstruction is commenced, the owner or operator must comply with the standard as provided in paragraphs (b)(1) and (2) of this section.
- (5) The owner or operator of a new source that is subject to the compliance requirements of paragraph (b)(3) or (4) of this section must notify the Administrator in accordance with § 63.9(d)
- (6) [Reserved]
- (7) When an area source increases its emissions of (or its potential to emit) hazardous air pollutants such that the source becomes a major source, the portion of the facility that meets the definition of a new affected source must comply with all requirements of that standard applicable to new sources. The source owner or operator must comply with the relevant standard upon startup.

(c) *Compliance dates for existing sources.*

- (1) After the effective date of a relevant standard established under this part pursuant to section 112(d) or 112(h) of the Act, the owner or operator of an existing source shall comply with such standard by the compliance date established by the Administrator in the applicable subpart(s) of this part, except as provided in § 63.1(c)(6)(i). Except as otherwise provided for in section 112 of the Act, in no case will the compliance date established for an existing source in an applicable subpart of this part exceed 3 years after the effective date of such standard.
- (2) If an existing source is subject to a standard established under this part pursuant to section 112(f) of the Act, the owner or operator must comply with the standard by the date 90 days after the standard's effective date, or by the date specified in an extension granted to the source by the Administrator under paragraph (i)(4)(ii) of this section, whichever is later.

(3)-(4) [Reserved]

- (5) Except as provided in paragraph (b)(7) of this section, the owner or operator of an area source that increases its emissions of (or its potential to emit) hazardous air pollutants such that the source becomes a major source and meets the definition of an existing source in the applicable major source standard shall be subject to relevant standards for existing sources. Except as provided in paragraph § 63.1(c)(6)(i)(B), such sources must comply by the date specified in the standards for existing area sources that become major sources. If no such compliance date is specified in the standards, the source shall have a period of time to comply with the relevant emission standard that is equivalent to the compliance period specified in the relevant standard for existing sources in existence at the time the standard becomes effective.

(d) [Reserved]

(e) ***Operation and maintenance requirements.***

(1)

- (i) At all times, including periods of startup, shutdown, and malfunction, the owner or operator must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. During a period of startup, shutdown, or malfunction, this general duty to minimize emissions requires that the owner or operator reduce emissions from the affected source to the greatest extent which is consistent with safety and good air pollution control practices. The general duty to minimize emissions during a period of startup, shutdown, or malfunction does not require the owner or operator to achieve emission levels that would be required by the applicable standard at other times if this is not consistent with safety and good air pollution control practices, nor does it require the owner or operator to make any further efforts to reduce emissions if levels required by the applicable standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures (including the startup, shutdown, and malfunction plan required in paragraph (e)(3) of this section), review of operation and maintenance records, and inspection of the source.
- (ii) Malfunctions must be corrected as soon as practicable after their occurrence. To the extent that an unexpected event arises during a startup, shutdown, or malfunction, an owner or operator must comply by minimizing emissions during such a startup, shutdown, and malfunction event consistent with safety and good air pollution control practices.
- (iii) Operation and maintenance requirements established pursuant to section 112 of the Act are enforceable independent of emissions limitations or other requirements in relevant standards.

(2) [Reserved]

(3) ***Startup, shutdown, and malfunction plan.***

- (i) The owner or operator of an affected source must develop a written startup, shutdown, and malfunction plan that describes, in detail, procedures for operating and maintaining the source during periods of startup, shutdown, and malfunction; and a program of corrective action for malfunctioning process, air pollution control, and monitoring equipment used to comply with the relevant standard. The startup, shutdown, and malfunction plan does not need to address

any scenario that would not cause the source to exceed an applicable emission limitation in the relevant standard. This plan must be developed by the owner or operator by the source's compliance date for that relevant standard. The purpose of the startup, shutdown, and malfunction plan is to—

- (A) Ensure that, at all times, the owner or operator operates and maintains each affected source, including associated air pollution control and monitoring equipment, in a manner which satisfies the general duty to minimize emissions established by paragraph (e)(1)(i) of this section;
 - (B) Ensure that owners or operators are prepared to correct malfunctions as soon as practicable after their occurrence in order to minimize excess emissions of hazardous air pollutants; and
 - (C) Reduce the reporting burden associated with periods of startup, shutdown, and malfunction (including corrective action taken to restore malfunctioning process and air pollution control equipment to its normal or usual manner of operation).
- (ii) [Reserved]
- (iii) When actions taken by the owner or operator during a startup or shutdown (and the startup or shutdown causes the source to exceed any applicable emission limitation in the relevant emission standards), or malfunction (including actions taken to correct a malfunction) are consistent with the procedures specified in the affected source's startup, shutdown, and malfunction plan, the owner or operator must keep records for that event which demonstrate that the procedures specified in the plan were followed. These records may take the form of a "checklist," or other effective form of recordkeeping that confirms conformance with the startup, shutdown, and malfunction plan and describes the actions taken for that event. In addition, the owner or operator must keep records of these events as specified in paragraph 63.10(b), including records of the occurrence and duration of each startup or shutdown (if the startup or shutdown causes the source to exceed any applicable emission limitation in the relevant emission standards), or malfunction of operation and each malfunction of the air pollution control and monitoring equipment. Furthermore, the owner or operator shall confirm that actions taken during the relevant reporting period during periods of startup, shutdown, and malfunction were consistent with the affected source's startup, shutdown and malfunction plan in the semiannual (or more frequent) startup, shutdown, and malfunction report required in § 63.10(d)(5).
- (iv) If an action taken by the owner or operator during a startup, shutdown, or malfunction (including an action taken to correct a malfunction) is not consistent with the procedures specified in the affected source's startup, shutdown, and malfunction plan, and the source exceeds any applicable emission limitation in the relevant emission standard, then the owner or operator must record the actions taken for that event and must report such actions within 2 working days after commencing actions inconsistent with the plan, followed by a letter within 7 working days after the end of the event, in accordance with § 63.10(d)(5) (unless the owner or operator makes alternative reporting arrangements, in advance, with the Administrator).
- (v) The owner or operator must maintain at the affected source a current startup, shutdown, and malfunction plan and must make the plan available upon request for inspection and copying by the Administrator. In addition, if the startup, shutdown, and malfunction plan is subsequently revised as provided in paragraph (e)(3)(viii) of this section, the owner or operator must maintain

at the affected source each previous (i.e., superseded) version of the startup, shutdown, and malfunction plan, and must make each such previous version available for inspection and copying by the Administrator for a period of 5 years after revision of the plan. If at any time after adoption of a startup, shutdown, and malfunction plan the affected source ceases operation or is otherwise no longer subject to the provisions of this part, the owner or operator must retain a copy of the most recent plan for 5 years from the date the source ceases operation or is no longer subject to this part and must make the plan available upon request for inspection and copying by the Administrator. The Administrator may at any time request in writing that the owner or operator submit a copy of any startup, shutdown, and malfunction plan (or a portion thereof) which is maintained at the affected source or in the possession of the owner or operator. Upon receipt of such a request, the owner or operator must promptly submit a copy of the requested plan (or a portion thereof) to the Administrator. The owner or operator may elect to submit the required copy of any startup, shutdown, and malfunction plan to the Administrator in an electronic format. If the owner or operator claims that any portion of such a startup, shutdown, and malfunction plan is confidential business information entitled to protection from disclosure under section 114(c) of the Act or 40 CFR 2.301, the material which is claimed as confidential must be clearly designated in the submission.

- (vi) To satisfy the requirements of this section to develop a startup, shutdown, and malfunction plan, the owner or operator may use the affected source's standard operating procedures (SOP) manual, or an Occupational Safety and Health Administration (OSHA) or other plan, provided the alternative plans meet all the requirements of this section and are made available for inspection or submitted when requested by the Administrator.
- (vii) Based on the results of a determination made under paragraph (e)(1)(i) of this section, the Administrator may require that an owner or operator of an affected source make changes to the startup, shutdown, and malfunction plan for that source. The Administrator must require appropriate revisions to a startup, shutdown, and malfunction plan, if the Administrator finds that the plan:
 - (A) Does not address a startup, shutdown, or malfunction event that has occurred;
 - (B) Fails to provide for the operation of the source (including associated air pollution control and monitoring equipment) during a startup, shutdown, or malfunction event in a manner consistent with the general duty to minimize emissions established by paragraph (e)(1)(i) of this section;
 - (C) Does not provide adequate procedures for correcting malfunctioning process and/or air pollution control and monitoring equipment as quickly as practicable; or
 - (D) Includes an event that does not meet the definition of startup, shutdown, or malfunction listed in § 63.2.
- (viii) The owner or operator may periodically revise the startup, shutdown, and malfunction plan for the affected source as necessary to satisfy the requirements of this part or to reflect changes in equipment or procedures at the affected source. Unless the permitting authority provides otherwise, the owner or operator may make such revisions to the startup, shutdown, and malfunction plan without prior approval by the Administrator or the permitting authority. However, each such revision to a startup, shutdown, and malfunction plan must be reported in the semiannual report required by § 63.10(d)(5). If the startup, shutdown, and malfunction plan fails to address or inadequately addresses an event that meets the characteristics of a

malfunction but was not included in the startup, shutdown, and malfunction plan at the time the owner or operator developed the plan, the owner or operator must revise the startup, shutdown, and malfunction plan within 45 days after the event to include detailed procedures for operating and maintaining the source during similar malfunction events and a program of corrective action for similar malfunctions of process or air pollution control and monitoring equipment. In the event that the owner or operator makes any revision to the startup, shutdown, and malfunction plan which alters the scope of the activities at the source which are deemed to be a startup, shutdown, or malfunction, or otherwise modifies the applicability of any emission limit, work practice requirement, or other requirement in a standard established under this part, the revised plan shall not take effect until after the owner or operator has provided a written notice describing the revision to the permitting authority.

- (ix) The title V permit for an affected source must require that the owner or operator develop a startup, shutdown, and malfunction plan which conforms to the provisions of this part, but may do so by citing to the relevant subpart or subparagraphs of paragraph (e) of this section. However, any revisions made to the startup, shutdown, and malfunction plan in accordance with the procedures established by this part shall not be deemed to constitute permit revisions under part 70 or part 71 of this chapter and the elements of the startup, shutdown, and malfunction plan shall not be considered an applicable requirement as defined in § 70.2 and § 71.2 of this chapter. Moreover, none of the procedures specified by the startup, shutdown, and malfunction plan for an affected source shall be deemed to fall within the permit shield provision in section 504(f) of the Act.

(f) ***Compliance with nonopacity emission standards –***

- (1) ***Applicability.*** The non-opacity emission standards set forth in this part shall apply at all times except as otherwise specified in an applicable subpart. If a startup, shutdown, or malfunction of one portion of an affected source does not affect the ability of particular emission points within other portions of the affected source to comply with the non-opacity emission standards set forth in this part, then that emission point must still be required to comply with the non-opacity emission standards and other applicable requirements.

(2) ***Methods for determining compliance.***

- (i) The Administrator will determine compliance with nonopacity emission standards in this part based on the results of performance tests conducted according to the procedures in § 63.7, unless otherwise specified in an applicable subpart of this part.
- (ii) The Administrator will determine compliance with nonopacity emission standards in this part by evaluation of an owner or operator's conformance with operation and maintenance requirements, including the evaluation of monitoring data, as specified in § 63.6(e) and applicable subparts of this part.
- (iii) If an affected source conducts performance testing at startup to obtain an operating permit in the State in which the source is located, the results of such testing may be used to demonstrate compliance with a relevant standard if—
 - (A) The performance test was conducted within a reasonable amount of time before an initial performance test is required to be conducted under the relevant standard;
 - (B) The performance test was conducted under representative operating conditions for the source;

- (C) The performance test was conducted and the resulting data were reduced using EPA-approved test methods and procedures, as specified in § 63.7(e) of this subpart; and
- (D) The performance test was appropriately quality-assured, as specified in § 63.7(c).
- (iv) The Administrator will determine compliance with design, equipment, work practice, or operational emission standards in this part by review of records, inspection of the source, and other procedures specified in applicable subparts of this part.
- (v) The Administrator will determine compliance with design, equipment, work practice, or operational emission standards in this part by evaluation of an owner or operator's conformance with operation and maintenance requirements, as specified in paragraph (e) of this section and applicable subparts of this part.
- (3) **Finding of compliance.** The Administrator will make a finding concerning an affected source's compliance with a non-opacity emission standard, as specified in paragraphs (f)(1) and (2) of this section, upon obtaining all the compliance information required by the relevant standard (including the written reports of performance test results, monitoring results, and other information, if applicable), and information available to the Administrator pursuant to paragraph (e)(1)(i) of this section.

(g) ***Use of an alternative nonopacity emission standard.***

- (1) If, in the Administrator's judgment, an owner or operator of an affected source has established that an alternative means of emission limitation will achieve a reduction in emissions of a hazardous air pollutant from an affected source at least equivalent to the reduction in emissions of that pollutant from that source achieved under any design, equipment, work practice, or operational emission standard, or combination thereof, established under this part pursuant to section 112(h) of the Act, the Administrator will publish in the FEDERAL REGISTER a notice permitting the use of the alternative emission standard for purposes of compliance with the promulgated standard. Any FEDERAL REGISTER notice under this paragraph shall be published only after the public is notified and given the opportunity to comment. Such notice will restrict the permission to the stationary source(s) or category(ies) of sources from which the alternative emission standard will achieve equivalent emission reductions. The Administrator will condition permission in such notice on requirements to assure the proper operation and maintenance of equipment and practices required for compliance with the alternative emission standard and other requirements, including appropriate quality assurance and quality control requirements, that are deemed necessary.
- (2) An owner or operator requesting permission under this paragraph shall, unless otherwise specified in an applicable subpart, submit a proposed test plan or the results of testing and monitoring in accordance with § 63.7 and § 63.8, a description of the procedures followed in testing or monitoring, and a description of pertinent conditions during testing or monitoring. Any testing or monitoring conducted to request permission to use an alternative nonopacity emission standard shall be appropriately quality assured and quality controlled, as specified in § 63.7 and § 63.8.
- (3) The Administrator may establish general procedures in an applicable subpart that accomplish the requirements of paragraphs (g)(1) and (g)(2) of this section.

(h) ***Compliance with opacity and visible emission standards –***

- (1) **Applicability.** The opacity and visible emission standards set forth in this part must apply at all times except as otherwise specified in an applicable subpart. If a startup, shutdown, or malfunction of one portion of an affected source does not affect the ability of particular emission points within other portions of the affected source to comply with the opacity and visible emission standards set forth in this part, then that emission point shall still be required to comply with the opacity and visible emission standards and other applicable requirements.
- (2) **Methods for determining compliance.**
 - (i) The Administrator will determine compliance with opacity and visible emission standards in this part based on the results of the test method specified in an applicable subpart. Whenever a continuous opacity monitoring system (COMS) is required to be installed to determine compliance with numerical opacity emission standards in this part, compliance with opacity emission standards in this part shall be determined by using the results from the COMS. Whenever an opacity emission test method is not specified, compliance with opacity emission standards in this part shall be determined by conducting observations in accordance with Test Method 9 in appendix A of part 60 of this chapter or the method specified in paragraph (h)(7)(ii) of this section. Whenever a visible emission test method is not specified, compliance with visible emission standards in this part shall be determined by conducting observations in accordance with Test Method 22 in appendix A of part 60 of this chapter.
 - (ii) [Reserved]
 - (iii) If an affected source undergoes opacity or visible emission testing at startup to obtain an operating permit in the State in which the source is located, the results of such testing may be used to demonstrate compliance with a relevant standard if—
 - (A) The opacity or visible emission test was conducted within a reasonable amount of time before a performance test is required to be conducted under the relevant standard;
 - (B) The opacity or visible emission test was conducted under representative operating conditions for the source;
 - (C) The opacity or visible emission test was conducted and the resulting data were reduced using EPA-approved test methods and procedures, as specified in § 63.7(e); and
 - (D) The opacity or visible emission test was appropriately quality-assured, as specified in § 63.7(c) of this section.
- (3) [Reserved]
- (4) **Notification of opacity or visible emission observations.** The owner or operator of an affected source shall notify the Administrator in writing of the anticipated date for conducting opacity or visible emission observations in accordance with § 63.9(f), if such observations are required for the source by a relevant standard.
- (5) **Conduct of opacity or visible emission observations.** When a relevant standard under this part includes an opacity or visible emission standard, the owner or operator of an affected source shall comply with the following:
 - (i) For the purpose of demonstrating initial compliance, opacity or visible emission observations shall be conducted concurrently with the initial performance test required in § 63.7 unless one of the following conditions applies:

- (A) If no performance test under § 63.7 is required, opacity or visible emission observations shall be conducted within 60 days after achieving the maximum production rate at which a new or reconstructed source will be operated, but not later than 120 days after initial startup of the source, or within 120 days after the effective date of the relevant standard in the case of new sources that start up before the standard's effective date. If no performance test under § 63.7 is required, opacity or visible emission observations shall be conducted within 120 days after the compliance date for an existing or modified source; or
- (B) If visibility or other conditions prevent the opacity or visible emission observations from being conducted concurrently with the initial performance test required under § 63.7, or within the time period specified in paragraph (h)(5)(i)(A) of this section, the source's owner or operator shall reschedule the opacity or visible emission observations as soon after the initial performance test, or time period, as possible, but not later than 30 days thereafter, and shall advise the Administrator of the rescheduled date. The rescheduled opacity or visible emission observations shall be conducted (to the extent possible) under the same operating conditions that existed during the initial performance test conducted under § 63.7. The visible emissions observer shall determine whether visibility or other conditions prevent the opacity or visible emission observations from being made concurrently with the initial performance test in accordance with procedures contained in Test Method 9 or Test Method 22 in appendix A of part 60 of this chapter.
- (ii) For the purpose of demonstrating initial compliance, the minimum total time of opacity observations shall be 3 hours (30 6-minute averages) for the performance test or other required set of observations (e.g., for fugitive-type emission sources subject only to an opacity emission standard).
- (iii) The owner or operator of an affected source to which an opacity or visible emission standard in this part applies shall conduct opacity or visible emission observations in accordance with the provisions of this section, record the results of the evaluation of emissions, and report to the Administrator the opacity or visible emission results in accordance with the provisions of § 63.10(d).
- (iv) [Reserved]
- (v) Opacity readings of portions of plumes that contain condensed, uncombined water vapor shall not be used for purposes of determining compliance with opacity emission standards.
- (6) **Availability of records.** The owner or operator of an affected source shall make available, upon request by the Administrator, such records that the Administrator deems necessary to determine the conditions under which the visual observations were made and shall provide evidence indicating proof of current visible observer emission certification.
- (7) **Use of a continuous opacity monitoring system.**
 - (i) The owner or operator of an affected source required to use a continuous opacity monitoring system (COMS) shall record the monitoring data produced during a performance test required under § 63.7 and shall furnish the Administrator a written report of the monitoring results in accordance with the provisions of § 63.10(e)(4).

- (ii) Whenever an opacity emission test method has not been specified in an applicable subpart, or an owner or operator of an affected source is required to conduct Test Method 9 observations (see appendix A of part 60 of this chapter), the owner or operator may submit, for compliance purposes, COMS data results produced during any performance test required under § 63.7 in lieu of Method 9 data. If the owner or operator elects to submit COMS data for compliance with the opacity emission standard, he or she shall notify the Administrator of that decision, in writing, simultaneously with the notification under § 63.7(b) of the date the performance test is scheduled to begin. Once the owner or operator of an affected source has notified the Administrator to that effect, the COMS data results will be used to determine opacity compliance during subsequent performance tests required under § 63.7, unless the owner or operator notifies the Administrator in writing to the contrary not later than with the notification under § 63.7(b) of the date the subsequent performance test is scheduled to begin.
 - (iii) For the purposes of determining compliance with the opacity emission standard during a performance test required under § 63.7 using COMS data, the COMS data shall be reduced to 6-minute averages over the duration of the mass emission performance test.
 - (iv) The owner or operator of an affected source using a COMS for compliance purposes is responsible for demonstrating that he/she has complied with the performance evaluation requirements of § 63.8(e), that the COMS has been properly maintained, operated, and data quality-assured, as specified in § 63.8(c) and § 63.8(d), and that the resulting data have not been altered in any way.
 - (v) Except as provided in paragraph (h)(7)(ii) of this section, the results of continuous monitoring by a COMS that indicate that the opacity at the time visual observations were made was not in excess of the emission standard are probative but not conclusive evidence of the actual opacity of an emission, provided that the affected source proves that, at the time of the alleged violation, the instrument used was properly maintained, as specified in § 63.8(c), and met Performance Specification 1 in appendix B of part 60 of this chapter, and that the resulting data have not been altered in any way.
- (8) **Finding of compliance.** The Administrator will make a finding concerning an affected source's compliance with an opacity or visible emission standard upon obtaining all the compliance information required by the relevant standard (including the written reports of the results of the performance tests required by § 63.7, the results of Test Method 9 or another required opacity or visible emission test method, the observer certification required by paragraph (h)(6) of this section, and the continuous opacity monitoring system results, whichever is/are applicable) and any information available to the Administrator needed to determine whether proper operation and maintenance practices are being used.
- (9) **Adjustment to an opacity emission standard.**
- (i) If the Administrator finds under paragraph (h)(8) of this section that an affected source is in compliance with all relevant standards for which initial performance tests were conducted under § 63.7, but during the time such performance tests were conducted fails to meet any relevant opacity emission standard, the owner or operator of such source may petition the Administrator to make appropriate adjustment to the opacity emission standard for the affected source. Until the Administrator notifies the owner or operator of the appropriate adjustment, the relevant opacity emission standard remains applicable.

- (ii) The Administrator may grant such a petition upon a demonstration by the owner or operator that—
 - (A) The affected source and its associated air pollution control equipment were operated and maintained in a manner to minimize the opacity of emissions during the performance tests;
 - (B) The performance tests were performed under the conditions established by the Administrator; and
 - (C) The affected source and its associated air pollution control equipment were incapable of being adjusted or operated to meet the relevant opacity emission standard.
- (iii) The Administrator will establish an adjusted opacity emission standard for the affected source meeting the above requirements at a level at which the source will be able, as indicated by the performance and opacity tests, to meet the opacity emission standard at all times during which the source is meeting the mass or concentration emission standard. The Administrator will promulgate the new opacity emission standard in the FEDERAL REGISTER.
- (iv) After the Administrator promulgates an adjusted opacity emission standard for an affected source, the owner or operator of such source shall be subject to the new opacity emission standard, and the new opacity emission standard shall apply to such source during any subsequent performance tests.

(i) ***Extension of compliance with emission standards.***

- (1) Until an extension of compliance has been granted by the Administrator (or a State with an approved permit program) under this paragraph, the owner or operator of an affected source subject to the requirements of this section shall comply with all applicable requirements of this part.

(2) ***Extension of compliance for early reductions and other reductions —***

- (i) ***Early reductions.*** Pursuant to section 112(i)(5) of the Act, if the owner or operator of an existing source demonstrates that the source has achieved a reduction in emissions of hazardous air pollutants in accordance with the provisions of subpart D of this part, the Administrator (or the State with an approved permit program) will grant the owner or operator an extension of compliance with specific requirements of this part, as specified in subpart D.
 - (ii) ***Other reductions.*** Pursuant to section 112(i)(6) of the Act, if the owner or operator of an existing source has installed best available control technology (BACT) (as defined in section 169(3) of the Act) or technology required to meet a lowest achievable emission rate (LAER) (as defined in section 171 of the Act) prior to the promulgation of an emission standard in this part applicable to such source and the same pollutant (or stream of pollutants) controlled pursuant to the BACT or LAER installation, the Administrator will grant the owner or operator an extension of compliance with such emission standard that will apply until the date 5 years after the date on which such installation was achieved, as determined by the Administrator.
- (3) ***Request for extension of compliance.*** Paragraphs (i)(4) through (i)(7) of this section concern requests for an extension of compliance with a relevant standard under this part (except requests for an extension of compliance under paragraph (i)(2)(i) of this section will be handled through procedures specified in subpart D of this part).

(4)

(i)

- (A) The owner or operator of an existing source who is unable to comply with a relevant standard established under this part pursuant to section 112(d) of the Act may request that the Administrator (or a State, when the State has an approved part 70 permit program and the source is required to obtain a part 70 permit under that program, or a State, when the State has been delegated the authority to implement and enforce the emission standard for that source) grant an extension allowing the source up to 1 additional year to comply with the standard, if such additional period is necessary for the installation of controls. An additional extension of up to 3 years may be added for mining waste operations, if the 1-year extension of compliance is insufficient to dry and cover mining waste in order to reduce emissions of any hazardous air pollutant. The owner or operator of an affected source who has requested an extension of compliance under this paragraph and who is otherwise required to obtain a title V permit shall apply for such permit or apply to have the source's title V permit revised to incorporate the conditions of the extension of compliance. The conditions of an extension of compliance granted under this paragraph will be incorporated into the affected source's title V permit according to the provisions of part 70 or Federal title V regulations in this chapter (42 U.S.C. 7661), whichever are applicable.
- (B) Any request under this paragraph for an extension of compliance with a relevant standard must be submitted in writing to the appropriate authority no later than 120 days prior to the affected source's compliance date (as specified in paragraphs (b) and (c) of this section), except as provided for in paragraph (i)(4)(i)(C) of this section. Nonfrivolous requests submitted under this paragraph will stay the applicability of the rule as to the emission points in question until such time as the request is granted or denied. A denial will be effective as of the date of denial. Emission standards established under this part may specify alternative dates for the submittal of requests for an extension of compliance if alternatives are appropriate for the source categories affected by those standards.
- (C) An owner or operator may submit a compliance extension request after the date specified in paragraph (i)(4)(i)(B) of this section provided the need for the compliance extension arose after that date, and before the otherwise applicable compliance date and the need arose due to circumstances beyond reasonable control of the owner or operator. This request must include, in addition to the information required in paragraph (i)(6)(i) of this section, a statement of the reasons additional time is needed and the date when the owner or operator first learned of the problems. Nonfrivolous requests submitted under this paragraph will stay the applicability of the rule as to the emission points in question until such time as the request is granted or denied. A denial will be effective as of the original compliance date.

- (ii) The owner or operator of an existing source unable to comply with a relevant standard established under this part pursuant to section 112(f) of the Act may request that the Administrator grant an extension allowing the source up to 2 years after the standard's effective date to comply with the standard. The Administrator may grant such an extension if he/she finds that such additional period is necessary for the installation of controls and that steps will be taken during the period of the extension to assure that the health of persons will be protected from imminent endangerment. Any request for an extension of compliance with a relevant standard under this paragraph must be submitted in writing to the Administrator not later than 90 calendar days after the effective date of the relevant standard.

- (5) The owner or operator of an existing source that has installed BACT or technology required to meet LAER [as specified in paragraph (i)(2)(ii) of this section] prior to the promulgation of a relevant emission standard in this part may request that the Administrator grant an extension allowing the source 5 years from the date on which such installation was achieved, as determined by the Administrator, to comply with the standard. Any request for an extension of compliance with a relevant standard under this paragraph shall be submitted in writing to the Administrator not later than 120 days after the promulgation date of the standard. The Administrator may grant such an extension if he or she finds that the installation of BACT or technology to meet LAER controls the same pollutant (or stream of pollutants) that would be controlled at that source by the relevant emission standard.
- (6)
 - (i) The request for a compliance extension under paragraph (i)(4) of this section shall include the following information:
 - (A) A description of the controls to be installed to comply with the standard;
 - (B) A compliance schedule, including the date by which each step toward compliance will be reached. At a minimum, the list of dates shall include:
 - (1) The date by which on-site construction, installation of emission control equipment, or a process change is planned to be initiated; and
 - (2) The date by which final compliance is to be achieved.
 - (3) The date by which on-site construction, installation of emission control equipment, or a process change is to be completed; and
 - (4) The date by which final compliance is to be achieved;
 - (C)-(D)
 - (ii) The request for a compliance extension under paragraph (i)(5) of this section shall include all information needed to demonstrate to the Administrator's satisfaction that the installation of BACT or technology to meet LAER controls the same pollutant (or stream of pollutants) that would be controlled at that source by the relevant emission standard.
- (7) Advice on requesting an extension of compliance may be obtained from the Administrator (or the State with an approved permit program).
- (8) **Approval of request for extension of compliance.** Paragraphs (i)(9) through (i)(14) of this section concern approval of an extension of compliance requested under paragraphs (i)(4) through (i)(6) of this section.
- (9) Based on the information provided in any request made under paragraphs (i)(4) through (i)(6) of this section, or other information, the Administrator (or the State with an approved permit program) may grant an extension of compliance with an emission standard, as specified in paragraphs (i)(4) and (i)(5) of this section.
- (10) The extension will be in writing and will—
 - (i) Identify each affected source covered by the extension;
 - (ii) Specify the termination date of the extension;

- (iii) Specify the dates by which steps toward compliance are to be taken, if appropriate;
- (iv) Specify other applicable requirements to which the compliance extension applies (e.g., performance tests); and
- (v)
 - (A) Under paragraph (i)(4), specify any additional conditions that the Administrator (or the State) deems necessary to assure installation of the necessary controls and protection of the health of persons during the extension period; or
 - (B) Under paragraph (i)(5), specify any additional conditions that the Administrator deems necessary to assure the proper operation and maintenance of the installed controls during the extension period.
- (11) The owner or operator of an existing source that has been granted an extension of compliance under paragraph (i)(10) of this section may be required to submit to the Administrator (or the State with an approved permit program) progress reports indicating whether the steps toward compliance outlined in the compliance schedule have been reached. The contents of the progress reports and the dates by which they shall be submitted will be specified in the written extension of compliance granted under paragraph (i)(10) of this section.
- (12)
 - (i) The Administrator (or the State with an approved permit program) will notify the owner or operator in writing of approval or intention to deny approval of a request for an extension of compliance within 30 calendar days after receipt of sufficient information to evaluate a request submitted under paragraph (i)(4)(i) or (i)(5) of this section. The Administrator (or the State) will notify the owner or operator in writing of the status of his/her application, that is, whether the application contains sufficient information to make a determination, within 30 calendar days after receipt of the original application and within 30 calendar days after receipt of any supplementary information that is submitted. The 30-day approval or denial period will begin after the owner or operator has been notified in writing that his/her application is complete.
 - (ii) When notifying the owner or operator that his/her application is not complete, the Administrator will specify the information needed to complete the application and provide notice of opportunity for the applicant to present, in writing, within 30 calendar days after he/she is notified of the incomplete application, additional information or arguments to the Administrator to enable further action on the application.
 - (iii) Before denying any request for an extension of compliance, the Administrator (or the State with an approved permit program) will notify the owner or operator in writing of the Administrator's (or the State's) intention to issue the denial, together with—
 - (A) Notice of the information and findings on which the intended denial is based; and
 - (B) Notice of opportunity for the owner or operator to present in writing, within 15 calendar days after he/she is notified of the intended denial, additional information or arguments to the Administrator (or the State) before further action on the request.

- (iv) The Administrator's final determination to deny any request for an extension will be in writing and will set forth the specific grounds on which the denial is based. The final determination will be made within 30 calendar days after presentation of additional information or argument (if the application is complete), or within 30 calendar days after the final date specified for the presentation if no presentation is made.

(13)

- (i) The Administrator will notify the owner or operator in writing of approval or intention to deny approval of a request for an extension of compliance within 30 calendar days after receipt of sufficient information to evaluate a request submitted under paragraph (i)(4)(ii) of this section. The 30-day approval or denial period will begin after the owner or operator has been notified in writing that his/her application is complete. The Administrator (or the State) will notify the owner or operator in writing of the status of his/her application, that is, whether the application contains sufficient information to make a determination, within 15 calendar days after receipt of the original application and within 15 calendar days after receipt of any supplementary information that is submitted.
- (ii) When notifying the owner or operator that his/her application is not complete, the Administrator will specify the information needed to complete the application and provide notice of opportunity for the applicant to present, in writing, within 15 calendar days after he/she is notified of the incomplete application, additional information or arguments to the Administrator to enable further action on the application.
- (iii) Before denying any request for an extension of compliance, the Administrator will notify the owner or operator in writing of the Administrator's intention to issue the denial, together with—
 - (A) Notice of the information and findings on which the intended denial is based; and
 - (B) Notice of opportunity for the owner or operator to present in writing, within 15 calendar days after he/she is notified of the intended denial, additional information or arguments to the Administrator before further action on the request.
- (iv) A final determination to deny any request for an extension will be in writing and will set forth the specific grounds on which the denial is based. The final determination will be made within 30 calendar days after presentation of additional information or argument (if the application is complete), or within 30 calendar days after the final date specified for the presentation if no presentation is made.

(14) The Administrator (or the State with an approved permit program) may terminate an extension of compliance at an earlier date than specified if any specification under paragraph (i)(10)(iii) or (iv) of this section is not met. Upon a determination to terminate, the Administrator will notify, in writing, the owner or operator of the Administrator's determination to terminate, together with:

- (i) Notice of the reason for termination; and
- (ii) Notice of opportunity for the owner or operator to present in writing, within 15 calendar days after he/she is notified of the determination to terminate, additional information or arguments to the Administrator before further action on the termination.

- (iii) A final determination to terminate an extension of compliance will be in writing and will set forth the specific grounds on which the termination is based. The final determination will be made within 30 calendar days after presentation of additional information or arguments, or within 30 calendar days after the final date specified for the presentation if no presentation is made.

(15) [Reserved]

- (16) The granting of an extension under this section shall not abrogate the Administrator's authority under section 114 of the Act.

- (j) **Exemption from compliance with emission standards.** The President may exempt any stationary source from compliance with any relevant standard established pursuant to section 112 of the Act for a period of not more than 2 years if the President determines that the technology to implement such standard is not available and that it is in the national security interests of the United States to do so. An exemption under this paragraph may be extended for 1 or more additional periods, each period not to exceed 2 years.

[59 FR 12430, Mar. 16, 1994, as amended at 67 FR 16599, Apr. 5, 2002; 68 FR 32600, May 30, 2003; 71 FR 20454, Apr. 20, 2006; 85 FR 73885, Nov. 19, 2020; 86 FR 13821, Mar. 11, 2021]

§ 63.7 Performance testing requirements.

- (a) **Applicability and performance test dates.**

- (1) The applicability of this section is set out in § 63.1(a)(4).

- (2) Except as provided in paragraph (a)(4) of this section, if required to do performance testing by a relevant standard, and unless a waiver of performance testing is obtained under this section or the conditions of paragraph (c)(3)(ii)(B) of this section apply, the owner or operator of the affected source must perform such tests within 180 days of the compliance date for such source.

(i)-(viii) [Reserved]

- (ix) Except as provided in paragraph (a)(4) of this section, when an emission standard promulgated under this part is more stringent than the standard proposed (see § 63.6(b)(3)), the owner or operator of a new or reconstructed source subject to that standard for which construction or reconstruction is commenced between the proposal and promulgation dates of the standard shall comply with performance testing requirements within 180 days after the standard's effective date, or within 180 days after startup of the source, whichever is later. If the promulgated standard is more stringent than the proposed standard, the owner or operator may choose to demonstrate compliance with either the proposed or the promulgated standard. If the owner or operator chooses to comply with the proposed standard initially, the owner or operator shall conduct a second performance test within 3 years and 180 days after the effective date of the standard, or after startup of the source, whichever is later, to demonstrate compliance with the promulgated standard.

- (3) The Administrator may require an owner or operator to conduct performance tests at the affected source at any other time when the action is authorized by section 114 of the Act.

- (4) If a force majeure is about to occur, occurs, or has occurred for which the affected owner or operator intends to assert a claim of force majeure:

- (i) The owner or operator shall notify the Administrator, in writing as soon as practicable following the date the owner or operator first knew, or through due diligence should have known that the event may cause or caused a delay in testing beyond the regulatory deadline specified in paragraph (a)(2) or (a)(3) of this section, or elsewhere in this part, but the notification must occur before the performance test deadline unless the initial force majeure or a subsequent force majeure event delays the notice, and in such cases, the notification shall occur as soon as practicable.
- (ii) The owner or operator shall provide to the Administrator a written description of the force majeure event and a rationale for attributing the delay in testing beyond the regulatory deadline to the force majeure; describe the measures taken or to be taken to minimize the delay; and identify a date by which the owner or operator proposes to conduct the performance test. The performance test shall be conducted as soon as practicable after the force majeure occurs.
- (iii) The decision as to whether or not to grant an extension to the performance test deadline is solely within the discretion of the Administrator. The Administrator will notify the owner or operator in writing of approval or disapproval of the request for an extension as soon as practicable.
- (iv) Until an extension of the performance test deadline has been approved by the Administrator under paragraphs (a)(4)(i), (a)(4)(ii), and (a)(4)(iii) of this section, the owner or operator of the affected facility remains strictly subject to the requirements of this part.

(b) Notification of performance test.

- (1) The owner or operator of an affected source must notify the Administrator in writing of his or her intention to conduct a performance test at least 60 calendar days before the performance test is initially scheduled to begin to allow the Administrator, upon request, to review and approve the site-specific test plan required under paragraph (c) of this section and to have an observer present during the test.
- (2) In the event the owner or operator is unable to conduct the performance test on the date specified in the notification requirement specified in paragraph (b)(1) of this section due to unforeseeable circumstances beyond his or her control, the owner or operator must notify the Administrator as soon as practicable and without delay prior to the scheduled performance test date and specify the date when the performance test is rescheduled. This notification of delay in conducting the performance test shall not relieve the owner or operator of legal responsibility for compliance with any other applicable provisions of this part or with any other applicable Federal, State, or local requirement, nor will it prevent the Administrator from implementing or enforcing this part or taking any other action under the Act.

(c) Quality assurance program.

- (1) The results of the quality assurance program required in this paragraph will be considered by the Administrator when he/she determines the validity of a performance test.
- (2)
 - (i) **Submission of site-specific test plan.** Before conducting a required performance test, the owner or operator of an affected source shall develop and, if requested by the Administrator, shall submit a site-specific test plan to the Administrator for approval. The test plan shall include a

test program summary, the test schedule, data quality objectives, and both an internal and external quality assurance (QA) program. Data quality objectives are the pretest expectations of precision, accuracy, and completeness of data.

- (ii) The internal QA program shall include, at a minimum, the activities planned by routine operators and analysts to provide an assessment of test data precision; an example of internal QA is the sampling and analysis of replicate samples.
- (iii) The performance testing shall include a test method performance audit (PA) during the performance test. The PAs consist of blind audit samples supplied by an accredited audit sample provider and analyzed during the performance test in order to provide a measure of test data bias. Gaseous audit samples are designed to audit the performance of the sampling system as well as the analytical system and must be collected by the sampling system during the compliance test just as the compliance samples are collected. If a liquid or solid audit sample is designed to audit the sampling system, it must also be collected by the sampling system during the compliance test. If multiple sampling systems or sampling trains are used during the compliance test for any of the test methods, the tester is only required to use one of the sampling systems per method to collect the audit sample. The audit sample must be analyzed by the same analyst using the same analytical reagents and analytical system and at the same time as the compliance samples. Retests are required when there is a failure to produce acceptable results for an audit sample. However, if the audit results do not affect the compliance or noncompliance status of the affected facility, the compliance authority may waive the reanalysis requirement, further audits, or retests and accept the results of the compliance test. Acceptance of the test results shall constitute a waiver of the reanalysis requirement, further audits, or retests. The compliance authority may also use the audit sample failure and the compliance test results as evidence to determine the compliance or noncompliance status of the affected facility. A blind audit sample is a sample whose value is known only to the sample provider and is not revealed to the tested facility until after they report the measured value of the audit sample. For pollutants that exist in the gas phase at ambient temperature, the audit sample shall consist of an appropriate concentration of the pollutant in air or nitrogen that can be introduced into the sampling system of the test method at or near the same entry point as a sample from the emission source. If no gas phase audit samples are available, an acceptable alternative is a sample of the pollutant in the same matrix that would be produced when the sample is recovered from the sampling system as required by the test method. For samples that exist only in a liquid or solid form at ambient temperature, the audit sample shall consist of an appropriate concentration of the pollutant in the same matrix that would be produced when the sample is recovered from the sampling system as required by the test method. An accredited audit sample provider (AASP) is an organization that has been accredited to prepare audit samples by an independent, third party accrediting body.
- (A) The source owner, operator, or representative of the tested facility shall obtain an audit sample, if commercially available, from an AASP for each test method used for regulatory compliance purposes. No audit samples are required for the following test methods: Methods 3A and 3C of appendix A-3 of part 60 of this chapter; Methods 6C, 7E, 9, and 10 of appendix A-4 of part 60; Methods 18 and 19 of appendix A-6 of part 60; Methods 20, 22, and 25A of appendix A-7 of part 60; Methods 30A and 30B of appendix A-8 of part 60; and Methods 303, 318, 320, and 321 of appendix A of this part. If multiple sources at a single facility are tested during a compliance test event, only one audit sample is required for

each method used during a compliance test. The compliance authority responsible for the compliance test may waive the requirement to include an audit sample if they believe that an audit sample is not necessary. "Commercially available" means that two or more independent AASPs have blind audit samples available for purchase. If the source owner, operator, or representative cannot find an audit sample for a specific method, the owner, operator, or representative shall consult the EPA Web site at the following URL, www.epa.gov/ttn/emc, to confirm whether there is a source that can supply an audit sample for that method. If the EPA Web site does not list an available audit sample at least 60 days prior to the beginning of the compliance test, the source owner, operator, or representative shall not be required to include an audit sample as part of the quality assurance program for the compliance test. When ordering an audit sample, the source owner, operator, or representative shall give the sample provider an estimate for the concentration of each pollutant that is emitted by the source or the estimated concentration of each pollutant based on the permitted level and the name, address, and phone number of the compliance authority. The source owner, operator, or representative shall report the results for the audit sample along with a summary of the emission test results for the audited pollutant to the compliance authority and shall report the results of the audit sample to the AASP. The source owner, operator, or representative shall make both reports at the same time and in the same manner or shall report to the compliance authority first and then report to the AASP. If the method being audited is a method that allows the samples to be analyzed in the field and the tester plans to analyze the samples in the field, the tester may analyze the audit samples prior to collecting the emission samples provided a representative of the compliance authority is present at the testing site. The tester may request, and the compliance authority may grant, a waiver to the requirement that a representative of the compliance authority must be present at the testing site during the field analysis of an audit sample. The source owner, operator, or representative may report the results of the audit sample to the compliance authority and then report the results of the audit sample to the AASP prior to collecting any emission samples. The test protocol and final test report shall document whether an audit sample was ordered and utilized and the pass/fail results as applicable.

- (B) An AASP shall have and shall prepare, analyze, and report the true value of audit samples in accordance with a written technical criteria document that describes how audit samples will be prepared and distributed in a manner that will ensure the integrity of the audit sample program. An acceptable technical criteria document shall contain standard operating procedures for all of the following operations:
 - (1) Preparing the sample;
 - (2) Confirming the true concentration of the sample;
 - (3) Defining the acceptance limits for the results from a well qualified tester. This procedure must use well established statistical methods to analyze historical results from well qualified testers. The acceptance limits shall be set so that there is 95 percent confidence that 90 percent of well qualified labs will produce future results that are within the acceptance limit range;
 - (4) Providing the opportunity for the compliance authority to comment on the selected concentration level for an audit sample;

- (5) Distributing the sample to the user in a manner that guarantees that the true value of the sample is unknown to the user;
 - (6) Recording the measured concentration reported by the user and determining if the measured value is within acceptable limits;
 - (7) Reporting the results from each audit sample in a timely manner to the compliance authority and to the source owner, operator, or representative by the AASP. The AASP shall make both reports at the same time and in the same manner or shall report to the compliance authority first and then report to the source owner, operator, or representative. The results shall include the name of the facility tested, the date on which the compliance test was conducted, the name of the company performing the sample collection, the name of the company that analyzed the compliance samples including the audit sample, the measured result for the audit sample, and whether the testing company passed or failed the audit. The AASP shall report the true value of the audit sample to the compliance authority. The AASP may report the true value to the source owner, operator, or representative if the AASP's operating plan ensures that no laboratory will receive the same audit sample twice.
 - (8) Evaluating the acceptance limits of samples at least once every two years to determine in consultation with the voluntary consensus standard body if they should be changed.
 - (9) Maintaining a database, accessible to the compliance authorities, of results from the audit that shall include the name of the facility tested, the date on which the compliance test was conducted, the name of the company performing the sample collection, the name of the company that analyzed the compliance samples including the audit sample, the measured result for the audit sample, the true value of the audit sample, the acceptance range for the measured value, and whether the testing company passed or failed the audit.
- (C) The accrediting body shall have a written technical criteria document that describes how it will ensure that the AASP is operating in accordance with the AASP technical criteria document that describes how audit samples are to be prepared and distributed. This document shall contain standard operating procedures for all of the following operations:
- (1) Checking audit samples to confirm their true value as reported by the AASP.
 - (2) Performing technical systems audits of the AASP's facilities and operating procedures at least once every two years.
 - (3) Providing standards for use by the voluntary consensus standard body to approve the accrediting body that will accredit the audit sample providers.
- (D) The technical criteria documents for the accredited sample providers and the accrediting body shall be developed through a public process guided by a voluntary consensus standards body (VCSB). The VCSB shall operate in accordance with the procedures and requirements in the Office of Management and Budget *Circular A-119*. A copy of Circular A-119 is available upon request by writing the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street, NW., Washington, DC 20503, by calling (202) 395-6880 or downloading online at http://standards.gov/standards_gov/a119.cfm. The VCSB shall approve all accrediting bodies. The Administrator will review all technical

criteria documents. If the technical criteria documents do not meet the minimum technical requirements in paragraphs (c)(2)(iii)(B) through (C) of this section, the technical criteria documents are not acceptable and the proposed audit sample program is not capable of producing audit samples of sufficient quality to be used in a compliance test. All acceptable technical criteria documents shall be posted on the EPA Web site at the following URL, <http://www.epa.gov/ttn/emc>.

- (iv) The owner or operator of an affected source shall submit the site-specific test plan to the Administrator upon the Administrator's request at least 60 calendar days before the performance test is scheduled to take place, that is, simultaneously with the notification of intention to conduct a performance test required under paragraph (b) of this section, or on a mutually agreed upon date.
- (v) The Administrator may request additional relevant information after the submittal of a site-specific test plan.

(3) Approval of site-specific test plan.

- (i) The Administrator will notify the owner or operator of approval or intention to deny approval of the site-specific test plan (if review of the site-specific test plan is requested) within 30 calendar days after receipt of the original plan and within 30 calendar days after receipt of any supplementary information that is submitted under paragraph (c)(3)(i)(B) of this section. Before disapproving any site-specific test plan, the Administrator will notify the applicant of the Administrator's intention to disapprove the plan together with—
 - (A) Notice of the information and findings on which the intended disapproval is based; and
 - (B) Notice of opportunity for the owner or operator to present, within 30 calendar days after he/she is notified of the intended disapproval, additional information to the Administrator before final action on the plan.
- (ii) In the event that the Administrator fails to approve or disapprove the site-specific test plan within the time period specified in paragraph (c)(3)(i) of this section, the following conditions shall apply:
 - (A) If the owner or operator intends to demonstrate compliance using the test method(s) specified in the relevant standard or with only minor changes to those tests methods (see paragraph (e)(2)(i) of this section), the owner or operator must conduct the performance test within the time specified in this section using the specified method(s);
 - (B) If the owner or operator intends to demonstrate compliance by using an alternative to any test method specified in the relevant standard, the owner or operator is authorized to conduct the performance test using an alternative test method after the Administrator approves the use of the alternative method when the Administrator approves the site-specific test plan (if review of the site-specific test plan is requested) or after the alternative method is approved (see paragraph (f) of this section). However, the owner or operator is authorized to conduct the performance test using an alternative method in the absence of notification of approval 45 days after submission of the site-specific test plan or request to use an alternative method. The owner or operator is authorized to conduct the performance test within 60 calendar days after he/she is authorized to demonstrate compliance using an alternative test method. Notwithstanding the requirements in the preceding three sentences, the owner or operator may proceed to conduct the

performance test as required in this section (without the Administrator's prior approval of the site-specific test plan) if he/she subsequently chooses to use the specified testing and monitoring methods instead of an alternative.

(iii) Neither the submission of a site-specific test plan for approval, nor the Administrator's approval or disapproval of a plan, nor the Administrator's failure to approve or disapprove a plan in a timely manner shall—

(A) Relieve an owner or operator of legal responsibility for compliance with any applicable provisions of this part or with any other applicable Federal, State, or local requirement; or

(B) Prevent the Administrator from implementing or enforcing this part or taking any other action under the Act.

(d) **Performance testing facilities.** If required to do performance testing, the owner or operator of each new source and, at the request of the Administrator, the owner or operator of each existing source, shall provide performance testing facilities as follows:

(1) Sampling ports adequate for test methods applicable to such source. This includes:

(i) Constructing the air pollution control system such that volumetric flow rates and pollutant emission rates can be accurately determined by applicable test methods and procedures; and

(ii) Providing a stack or duct free of cyclonic flow during performance tests, as demonstrated by applicable test methods and procedures;

(2) Safe sampling platform(s);

(3) Safe access to sampling platform(s);

(4) Utilities for sampling and testing equipment; and

(5) Any other facilities that the Administrator deems necessary for safe and adequate testing of a source.

(e) **Conduct of performance tests.**

(1) Performance tests shall be conducted under such conditions as the Administrator specifies to the owner or operator based on representative performance (i.e., performance based on normal operating conditions) of the affected source. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test, nor shall emissions in excess of the level of the relevant standard during periods of startup, shutdown, and malfunction be considered a violation of the relevant standard unless otherwise specified in the relevant standard or a determination of noncompliance is made under § 63.6(e). Upon request, the owner or operator shall make available to the Administrator such records as may be necessary to determine the conditions of performance tests.

(2) Performance tests shall be conducted and data shall be reduced in accordance with the test methods and procedures set forth in this section, in each relevant standard, and, if required, in applicable appendices of parts 51, 60, 61, and 63 of this chapter unless the Administrator—

(i) Specifies or approves, in specific cases, the use of a test method with minor changes in methodology (see definition in § 63.90(a)). Such changes may be approved in conjunction with approval of the site-specific test plan (see paragraph (c) of this section); or

- (ii) Approves the use of an intermediate or major change or alternative to a test method (see definitions in § 63.90(a)), the results of which the Administrator has determined to be adequate for indicating whether a specific affected source is in compliance; or
 - (iii) Approves shorter sampling times or smaller sample volumes when necessitated by process variables or other factors; or
 - (iv) Waives the requirement for performance tests because the owner or operator of an affected source has demonstrated by other means to the Administrator's satisfaction that the affected source is in compliance with the relevant standard.
- (3) Unless otherwise specified in a relevant standard or test method, each performance test shall consist of three separate runs using the applicable test method. Each run shall be conducted for the time and under the conditions specified in the relevant standard. For the purpose of determining compliance with a relevant standard, the arithmetic mean of the results of the three runs shall apply. Upon receiving approval from the Administrator, results of a test run may be replaced with results of an additional test run in the event that—
- (i) A sample is accidentally lost after the testing team leaves the site; or
 - (ii) Conditions occur in which one of the three runs must be discontinued because of forced shutdown; or
 - (iii) Extreme meteorological conditions occur; or
 - (iv) Other circumstances occur that are beyond the owner or operator's control.
- (4) Nothing in paragraphs (e)(1) through (e)(3) of this section shall be construed to abrogate the Administrator's authority to require testing under section 114 of the Act.

(f) ***Use of an alternative test method —***

- (1) ***General.*** Until authorized to use an intermediate or major change or alternative to a test method, the owner or operator of an affected source remains subject to the requirements of this section and the relevant standard.
- (2) The owner or operator of an affected source required to do performance testing by a relevant standard may use an alternative test method from that specified in the standard provided that the owner or operator—
 - (i) Notifies the Administrator of his or her intention to use an alternative test method at least 60 days before the performance test is scheduled to begin;
 - (ii) Uses Method 301 in appendix A of this part to validate the alternative test method. This may include the use of specific procedures of Method 301 if use of such procedures are sufficient to validate the alternative test method; and
 - (iii) Submits the results of the Method 301 validation process along with the notification of intention and the justification for not using the specified test method. The owner or operator may submit the information required in this paragraph well in advance of the deadline specified in paragraph (f)(2)(i) of this section to ensure a timely review by the Administrator in order to meet the performance test date specified in this section or the relevant standard.

- (3) The Administrator will determine whether the owner or operator's validation of the proposed alternative test method is adequate and issue an approval or disapproval of the alternative test method. If the owner or operator intends to demonstrate compliance by using an alternative to any test method specified in the relevant standard, the owner or operator is authorized to conduct the performance test using an alternative test method after the Administrator approves the use of the alternative method. However, the owner or operator is authorized to conduct the performance test using an alternative method in the absence of notification of approval/disapproval 45 days after submission of the request to use an alternative method and the request satisfies the requirements in paragraph (f)(2) of this section. The owner or operator is authorized to conduct the performance test within 60 calendar days after he/she is authorized to demonstrate compliance using an alternative test method. Notwithstanding the requirements in the preceding three sentences, the owner or operator may proceed to conduct the performance test as required in this section (without the Administrator's prior approval of the site-specific test plan) if he/she subsequently chooses to use the specified testing and monitoring methods instead of an alternative.
- (4) If the Administrator finds reasonable grounds to dispute the results obtained by an alternative test method for the purposes of demonstrating compliance with a relevant standard, the Administrator may require the use of a test method specified in a relevant standard.
- (5) If the owner or operator uses an alternative test method for an affected source during a required performance test, the owner or operator of such source shall continue to use the alternative test method for subsequent performance tests at that affected source until he or she receives approval from the Administrator to use another test method as allowed under § 63.7(f).
- (6) Neither the validation and approval process nor the failure to validate an alternative test method shall abrogate the owner or operator's responsibility to comply with the requirements of this part.

(g) Data analysis, recordkeeping, and reporting.

- (1) Unless otherwise specified in a relevant standard or test method, or as otherwise approved by the Administrator in writing, results of a performance test shall include the analysis of samples, determination of emissions, and raw data. A performance test is "completed" when field sample collection is terminated. The owner or operator of an affected source shall report the results of the performance test to the Administrator before the close of business on the 60th day following the completion of the performance test, unless specified otherwise in a relevant standard or as approved otherwise in writing by the Administrator (see § 63.9(i)). The results of the performance test shall be submitted as part of the notification of compliance status required under § 63.9(h). Before a title V permit has been issued to the owner or operator of an affected source, the owner or operator shall send the results of the performance test to the Administrator. After a title V permit has been issued to the owner or operator of an affected source, the owner or operator shall send the results of the performance test to the appropriate permitting authority.
- (2) Contents of a performance test, CMS performance evaluation, or CMS quality assurance test report (electronic or paper submitted copy). Unless otherwise specified in a relevant standard, test method, CMS performance specification, or quality assurance requirement for a CMS, or as otherwise approved by the Administrator in writing, the report shall include the elements identified in paragraphs (g)(2)(i) through (vi) of this section.
 - (i) General identification information for the facility including a mailing address, the physical address, the owner or operator or responsible official (where applicable) and his/her email address, and the appropriate Federal Registry System (FRS) number for the facility.

- (ii) Purpose of the test including the applicable regulation requiring the test, the pollutant(s) and other parameters being measured, the applicable emission standard, and any process parameter component, and a brief process description.
 - (iii) Description of the emission unit tested including fuel burned, control devices, and vent characteristics; the appropriate source classification code (SCC); the permitted maximum process rate (where applicable); and the sampling location.
 - (iv) Description of sampling and analysis procedures used and any modifications to standard procedures, quality assurance procedures and results, record of process operating conditions that demonstrate the applicable test conditions are met, and values for any operating parameters for which limits were being set during the test.
 - (v) Where a test method, CEMS, PEMS, or COMS performance specification, or on-going quality assurance requirement for a CEMS, PEMS, or COMS requires you record or report, the following shall be included in your report: Record of preparation of standards, record of calibrations, raw data sheets for field sampling, raw data sheets for field and laboratory analyses, chain-of-custody documentation, and example calculations for reported results.
 - (vi) Identification of the company conducting the performance test including the primary office address, telephone number, and the contact for this test including his/her email address.
- (3) For a minimum of 5 years after a performance test is conducted, the owner or operator shall retain and make available, upon request, for inspection by the Administrator the records or results of such performance test and other data needed to determine emissions from an affected source.

(h) ***Waiver of performance tests.***

- (1) Until a waiver of a performance testing requirement has been granted by the Administrator under this paragraph, the owner or operator of an affected source remains subject to the requirements of this section.
- (2) Individual performance tests may be waived upon written application to the Administrator if, in the Administrator's judgment, the source is meeting the relevant standard(s) on a continuous basis, or the source is being operated under an extension of compliance, or the owner or operator has requested an extension of compliance and the Administrator is still considering that request.

(3) ***Request to waive a performance test.***

- (i) If a request is made for an extension of compliance under § 63.6(i), the application for a waiver of an initial performance test shall accompany the information required for the request for an extension of compliance. If no extension of compliance is requested or if the owner or operator has requested an extension of compliance and the Administrator is still considering that request, the application for a waiver of an initial performance test shall be submitted at least 60 days before the performance test if the site-specific test plan under paragraph (c) of this section is not submitted.
- (ii) If an application for a waiver of a subsequent performance test is made, the application may accompany any required compliance progress report, compliance status report, or excess emissions and continuous monitoring system performance report [such as those required under § 63.6(i), § 63.9(h), and § 63.10(e) or specified in a relevant standard or in the source's title V permit], but it shall be submitted at least 60 days before the performance test if the site-specific test plan required under paragraph (c) of this section is not submitted.

- (iii) Any application for a waiver of a performance test shall include information justifying the owner or operator's request for a waiver, such as the technical or economic infeasibility, or the impracticality, of the affected source performing the required test.
- (4) **Approval of request to waive performance test.** The Administrator will approve or deny a request for a waiver of a performance test made under paragraph (h)(3) of this section when he/she—
 - (i) Approves or denies an extension of compliance under § 63.6(i)(8); or
 - (ii) Approves or disapproves a site-specific test plan under § 63.7(c)(3); or
 - (iii) Makes a determination of compliance following the submission of a required compliance status report or excess emissions and continuous monitoring systems performance report; or
 - (iv) Makes a determination of suitable progress towards compliance following the submission of a compliance progress report, whichever is applicable.
- (5) Approval of any waiver granted under this section shall not abrogate the Administrator's authority under the Act or in any way prohibit the Administrator from later canceling the waiver. The cancellation will be made only after notice is given to the owner or operator of the affected source.

[59 FR 12430, Mar. 16, 1994, as amended at 65 FR 62215, Oct. 17, 2000; 67 FR 16602, Apr. 5, 2002; 72 FR 27443, May 16, 2007; 75 FR 55655, Sept. 13, 2010; 79 FR 11277, Feb. 27, 2014; 81 FR 59825, Aug. 30, 2016; 83 FR 56725, Nov. 14, 2018]

§ 63.8 Monitoring requirements.

(a) **Applicability.**

- (1) The applicability of this section is set out in § 63.1(a)(4).
- (2) For the purposes of this part, all CMS required under relevant standards shall be subject to the provisions of this section upon promulgation of performance specifications for CMS as specified in the relevant standard or otherwise by the Administrator.
- (3) [Reserved]
- (4) Additional monitoring requirements for control devices used to comply with provisions in relevant standards of this part are specified in § 63.11.

(b) **Conduct of monitoring.**

- (1) Monitoring shall be conducted as set forth in this section and the relevant standard(s) unless the Administrator—
 - (i) Specifies or approves the use of minor changes in methodology for the specified monitoring requirements and procedures (see § 63.90(a) for definition); or
 - (ii) Approves the use of an intermediate or major change or alternative to any monitoring requirements or procedures (see § 63.90(a) for definition).
 - (iii) Owners or operators with flares subject to § 63.11(b) are not subject to the requirements of this section unless otherwise specified in the relevant standard.
- (2)

- (i) When the emissions from two or more affected sources are combined before being released to the atmosphere, the owner or operator may install an applicable CMS for each emission stream or for the combined emissions streams, provided the monitoring is sufficient to demonstrate compliance with the relevant standard.
- (ii) If the relevant standard is a mass emission standard and the emissions from one affected source are released to the atmosphere through more than one point, the owner or operator must install an applicable CMS at each emission point unless the installation of fewer systems is—
 - (A) Approved by the Administrator; or
 - (B) Provided for in a relevant standard (e.g., instead of requiring that a CMS be installed at each emission point before the effluents from those points are channeled to a common control device, the standard specifies that only one CMS is required to be installed at the vent of the control device).

- (3) When more than one CMS is used to measure the emissions from one affected source (e.g., multiple breechings, multiple outlets), the owner or operator shall report the results as required for each CMS. However, when one CMS is used as a backup to another CMS, the owner or operator shall report the results from the CMS used to meet the monitoring requirements of this part. If both such CMS are used during a particular reporting period to meet the monitoring requirements of this part, then the owner or operator shall report the results from each CMS for the relevant compliance period.

(c) *Operation and maintenance of continuous monitoring systems.*

- (1) The owner or operator of an affected source shall maintain and operate each CMS as specified in this section, or in a relevant standard, and in a manner consistent with good air pollution control practices.
 - (i) The owner or operator of an affected source must maintain and operate each CMS as specified in § 63.6(e)(1).
 - (ii) The owner or operator must keep the necessary parts for routine repairs of the affected CMS equipment readily available.
 - (iii) The owner or operator of an affected source must develop a written startup, shutdown, and malfunction plan for CMS as specified in § 63.6(e)(3).
- (2)
 - (i) All CMS must be installed such that representative measures of emissions or process parameters from the affected source are obtained. In addition, CEMS must be located according to procedures contained in the applicable performance specification(s).
 - (ii) Unless the individual subpart states otherwise, the owner or operator must ensure the read out (that portion of the CMS that provides a visual display or record), or other indication of operation, from any CMS required for compliance with the emission standard is readily accessible on site for operational control or inspection by the operator of the equipment.
- (3) All CMS shall be installed, operational, and the data verified as specified in the relevant standard either prior to or in conjunction with conducting performance tests under § 63.7. Verification of operational status shall, at a minimum, include completion of the manufacturer's written specifications or recommendations for installation, operation, and calibration of the system.

- (4) Except for system breakdowns, out-of-control periods, repairs, maintenance periods, calibration checks, and zero (low-level) and high-level calibration drift adjustments, all CMS, including COMS and CEMS, shall be in continuous operation and shall meet minimum frequency of operation requirements as follows:
 - (i) All COMS shall complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive 6-minute period.
 - (ii) All CEMS for measuring emissions other than opacity shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.
- (5) Unless otherwise approved by the Administrator, minimum procedures for COMS shall include a method for producing a simulated zero opacity condition and an upscale (high-level) opacity condition using a certified neutral density filter or other related technique to produce a known obscuration of the light beam. Such procedures shall provide a system check of all the analyzer's internal optical surfaces and all electronic circuitry, including the lamp and photodetector assembly normally used in the measurement of opacity.
- (6) The owner or operator of a CMS that is not a CPMS, which is installed in accordance with the provisions of this part and the applicable CMS performance specification(s), must check the zero (low-level) and high-level calibration drifts at least once daily in accordance with the written procedure specified in the performance evaluation plan developed under paragraphs (e)(3)(i) and (ii) of this section. The zero (low-level) and high-level calibration drifts must be adjusted, at a minimum, whenever the 24-hour zero (low-level) drift exceeds two times the limits of the applicable performance specification(s) specified in the relevant standard. The system shall allow the amount of excess zero (low-level) and high-level drift measured at the 24-hour interval checks to be recorded and quantified whenever specified. For COMS, all optical and instrumental surfaces exposed to the effluent gases must be cleaned prior to performing the zero (low-level) and high-level drift adjustments; the optical surfaces and instrumental surfaces must be cleaned when the cumulative automatic zero compensation, if applicable, exceeds 4 percent opacity. The CPMS must be calibrated prior to use for the purposes of complying with this section. The CPMS must be checked daily for indication that the system is responding. If the CPMS system includes an internal system check, results must be recorded and checked daily for proper operation.
- (7)
 - (i) A CMS is out of control if—
 - (A) The zero (low-level), mid-level (if applicable), or high-level calibration drift (CD) exceeds two times the applicable CD specification in the applicable performance specification or in the relevant standard; or
 - (B) The CMS fails a performance test audit (e.g., cylinder gas audit), relative accuracy audit, relative accuracy test audit, or linearity test audit; or
 - (C) The COMS CD exceeds two times the limit in the applicable performance specification in the relevant standard.
 - (ii) When the CMS is out of control, the owner or operator of the affected source shall take the necessary corrective action and shall repeat all necessary tests which indicate that the system is out of control. The owner or operator shall take corrective action and conduct retesting until

the performance requirements are below the applicable limits. The beginning of the out-of-control period is the hour the owner or operator conducts a performance check (e.g., calibration drift) that indicates an exceedance of the performance requirements established under this part. The end of the out-of-control period is the hour following the completion of corrective action and successful demonstration that the system is within the allowable limits. During the period the CMS is out of control, recorded data shall not be used in data averages and calculations, or to meet any data availability requirement established under this part.

- (8) The owner or operator of a CMS that is out of control as defined in paragraph (c)(7) of this section shall submit all information concerning out-of-control periods, including start and end dates and hours and descriptions of corrective actions taken, in the excess emissions and continuous monitoring system performance report required in § 63.10(e)(3).

(d) **Quality control program.**

- (1) The results of the quality control program required in this paragraph will be considered by the Administrator when he/she determines the validity of monitoring data.
- (2) The owner or operator of an affected source that is required to use a CMS and is subject to the monitoring requirements of this section and a relevant standard shall develop and implement a CMS quality control program. As part of the quality control program, the owner or operator shall develop and submit to the Administrator for approval upon request a site-specific performance evaluation test plan for the CMS performance evaluation required in paragraph (e)(3)(i) of this section, according to the procedures specified in paragraph (e). In addition, each quality control program shall include, at a minimum, a written protocol that describes procedures for each of the following operations:
 - (i) Initial and any subsequent calibration of the CMS;
 - (ii) Determination and adjustment of the calibration drift of the CMS;
 - (iii) Preventive maintenance of the CMS, including spare parts inventory;
 - (iv) Data recording, calculations, and reporting;
 - (v) Accuracy audit procedures, including sampling and analysis methods; and
 - (vi) Program of corrective action for a malfunctioning CMS.
- (3) The owner or operator shall keep these written procedures on record for the life of the affected source or until the affected source is no longer subject to the provisions of this part, to be made available for inspection, upon request, by the Administrator. If the performance evaluation plan is revised, the owner or operator shall keep previous (i.e., superseded) versions of the performance evaluation plan on record to be made available for inspection, upon request, by the Administrator, for a period of 5 years after each revision to the plan. Where relevant, e.g., program of corrective action for a malfunctioning CMS, these written procedures may be incorporated as part of the affected source's startup, shutdown, and malfunction plan to avoid duplication of planning and recordkeeping efforts.

(e) **Performance evaluation of continuous monitoring systems –**

- (1) **General.** When required by a relevant standard, and at any other time the Administrator may require under section 114 of the Act, the owner or operator of an affected source being monitored shall conduct a performance evaluation of the CMS. Such performance evaluation shall be conducted according to the applicable specifications and procedures described in this section or in the relevant standard.
- (2) **Notification of performance evaluation.** The owner or operator shall notify the Administrator in writing of the date of the performance evaluation simultaneously with the notification of the performance test date required under § 63.7(b) or at least 60 days prior to the date the performance evaluation is scheduled to begin if no performance test is required.
- (3)
 - (i) **Submission of site-specific performance evaluation test plan.** Before conducting a required CMS performance evaluation, the owner or operator of an affected source shall develop and submit a site-specific performance evaluation test plan to the Administrator for approval upon request. The performance evaluation test plan shall include the evaluation program objectives, an evaluation program summary, the performance evaluation schedule, data quality objectives, and both an internal and external QA program. Data quality objectives are the pre-evaluation expectations of precision, accuracy, and completeness of data.
 - (ii) The internal QA program shall include, at a minimum, the activities planned by routine operators and analysts to provide an assessment of CMS performance. The external QA program shall include, at a minimum, systems audits that include the opportunity for on-site evaluation by the Administrator of instrument calibration, data validation, sample logging, and documentation of quality control data and field maintenance activities.
 - (iii) The owner or operator of an affected source shall submit the site-specific performance evaluation test plan to the Administrator (if requested) at least 60 days before the performance test or performance evaluation is scheduled to begin, or on a mutually agreed upon date, and review and approval of the performance evaluation test plan by the Administrator will occur with the review and approval of the site-specific test plan (if review of the site-specific test plan is requested).
 - (iv) The Administrator may request additional relevant information after the submittal of a site-specific performance evaluation test plan.
 - (v) In the event that the Administrator fails to approve or disapprove the site-specific performance evaluation test plan within the time period specified in § 63.7(c)(3), the following conditions shall apply:
 - (A) If the owner or operator intends to demonstrate compliance using the monitoring method(s) specified in the relevant standard, the owner or operator shall conduct the performance evaluation within the time specified in this subpart using the specified method(s);
 - (B) If the owner or operator intends to demonstrate compliance by using an alternative to a monitoring method specified in the relevant standard, the owner or operator shall refrain from conducting the performance evaluation until the Administrator approves the use of the alternative method. If the Administrator does not approve the use of the alternative method within 30 days before the performance evaluation is scheduled to begin, the performance evaluation deadlines specified in paragraph (e)(4) of this section may be

extended such that the owner or operator shall conduct the performance evaluation within 60 calendar days after the Administrator approves the use of the alternative method. Notwithstanding the requirements in the preceding two sentences, the owner or operator may proceed to conduct the performance evaluation as required in this section (without the Administrator's prior approval of the site-specific performance evaluation test plan) if he/she subsequently chooses to use the specified monitoring method(s) instead of an alternative.

(vi) Neither the submission of a site-specific performance evaluation test plan for approval, nor the Administrator's approval or disapproval of a plan, nor the Administrator's failure to approve or disapprove a plan in a timely manner shall—

- (A) Relieve an owner or operator of legal responsibility for compliance with any applicable provisions of this part or with any other applicable Federal, State, or local requirement; or
- (B) Prevent the Administrator from implementing or enforcing this part or taking any other action under the Act.

(4) **Conduct of performance evaluation and performance evaluation dates.** The owner or operator of an affected source shall conduct a performance evaluation of a required CMS during any performance test required under § 63.7 in accordance with the applicable performance specification as specified in the relevant standard. Notwithstanding the requirement in the previous sentence, if the owner or operator of an affected source elects to submit COMS data for compliance with a relevant opacity emission standard as provided under § 63.6(h)(7), he/she shall conduct a performance evaluation of the COMS as specified in the relevant standard, before the performance test required under § 63.7 is conducted in time to submit the results of the performance evaluation as specified in paragraph (e)(5)(ii) of this section. If a performance test is not required, or the requirement for a performance test has been waived under § 63.7(h), the owner or operator of an affected source shall conduct the performance evaluation not later than 180 days after the appropriate compliance date for the affected source, as specified in § 63.7(a), or as otherwise specified in the relevant standard.

(5) **Reporting performance evaluation results.**

- (i) The owner or operator shall furnish the Administrator a copy of a written report of the results of the performance evaluation containing the information specified in § 63.7(g)(2)(i) through (vi) simultaneously with the results of the performance test required under § 63.7 or within 60 days of completion of the performance evaluation, unless otherwise specified in a relevant standard.
- (ii) The owner or operator of an affected source using a COMS to determine opacity compliance during any performance test required under § 63.7 and described in § 63.6(d)(6) shall furnish the Administrator two or, upon request, three copies of a written report of the results of the COMS performance evaluation under this paragraph. The copies shall be provided at least 15 calendar days before the performance test required under § 63.7 is conducted.

(f) **Use of an alternative monitoring method —**

(1) **General.** Until permission to use an alternative monitoring procedure (minor, intermediate, or major changes; see definition in § 63.90(a)) has been granted by the Administrator under this paragraph (f)(1), the owner or operator of an affected source remains subject to the requirements of this section and the relevant standard.

- (2) After receipt and consideration of written application, the Administrator may approve alternatives to any monitoring methods or procedures of this part including, but not limited to, the following:
 - (i) Alternative monitoring requirements when installation of a CMS specified by a relevant standard would not provide accurate measurements due to liquid water or other interferences caused by substances within the effluent gases;
 - (ii) Alternative monitoring requirements when the affected source is infrequently operated;
 - (iii) Alternative monitoring requirements to accommodate CEMS that require additional measurements to correct for stack moisture conditions;
 - (iv) Alternative locations for installing CMS when the owner or operator can demonstrate that installation at alternate locations will enable accurate and representative measurements;
 - (v) Alternate methods for converting pollutant concentration measurements to units of the relevant standard;
 - (vi) Alternate procedures for performing daily checks of zero (low-level) and high-level drift that do not involve use of high-level gases or test cells;
 - (vii) Alternatives to the American Society for Testing and Materials (ASTM) test methods or sampling procedures specified by any relevant standard;
 - (viii) Alternative CMS that do not meet the design or performance requirements in this part, but adequately demonstrate a definite and consistent relationship between their measurements and the measurements of opacity by a system complying with the requirements as specified in the relevant standard. The Administrator may require that such demonstration be performed for each affected source; or
 - (ix) Alternative monitoring requirements when the effluent from a single affected source or the combined effluent from two or more affected sources is released to the atmosphere through more than one point.
- (3) If the Administrator finds reasonable grounds to dispute the results obtained by an alternative monitoring method, requirement, or procedure, the Administrator may require the use of a method, requirement, or procedure specified in this section or in the relevant standard. If the results of the specified and alternative method, requirement, or procedure do not agree, the results obtained by the specified method, requirement, or procedure shall prevail.
- (4)
 - (i) ***Request to use alternative monitoring procedure.*** An owner or operator who wishes to use an alternative monitoring procedure must submit an application to the Administrator as described in paragraph (f)(4)(ii) of this section. The application may be submitted at any time provided that the monitoring procedure is not the performance test method used to demonstrate compliance with a relevant standard or other requirement. If the alternative monitoring procedure will serve as the performance test method that is to be used to demonstrate compliance with a relevant standard, the application must be submitted at least 60 days before the performance evaluation is scheduled to begin and must meet the requirements for an alternative test method under § 63.7(f).

- (ii) The application must contain a description of the proposed alternative monitoring system which addresses the four elements contained in the definition of monitoring in § 63.2 and a performance evaluation test plan, if required, as specified in paragraph (e)(3) of this section. In addition, the application must include information justifying the owner or operator's request for an alternative monitoring method, such as the technical or economic infeasibility, or the impracticality, of the affected source using the required method.
 - (iii) The owner or operator may submit the information required in this paragraph well in advance of the submittal dates specified in paragraph (f)(4)(i) above to ensure a timely review by the Administrator in order to meet the compliance demonstration date specified in this section or the relevant standard.
 - (iv) Application for minor changes to monitoring procedures, as specified in paragraph (b)(1) of this section, may be made in the site-specific performance evaluation plan.
- (5) **Approval of request to use alternative monitoring procedure.**
- (i) The Administrator will notify the owner or operator of approval or intention to deny approval of the request to use an alternative monitoring method within 30 calendar days after receipt of the original request and within 30 calendar days after receipt of any supplementary information that is submitted. If a request for a minor change is made in conjunction with site-specific performance evaluation plan, then approval of the plan will constitute approval of the minor change. Before disapproving any request to use an alternative monitoring method, the Administrator will notify the applicant of the Administrator's intention to disapprove the request together with—
 - (A) Notice of the information and findings on which the intended disapproval is based; and
 - (B) Notice of opportunity for the owner or operator to present additional information to the Administrator before final action on the request. At the time the Administrator notifies the applicant of his or her intention to disapprove the request, the Administrator will specify how much time the owner or operator will have after being notified of the intended disapproval to submit the additional information.
 - (ii) The Administrator may establish general procedures and criteria in a relevant standard to accomplish the requirements of paragraph (f)(5)(i) of this section.
 - (iii) If the Administrator approves the use of an alternative monitoring method for an affected source under paragraph (f)(5)(i) of this section, the owner or operator of such source shall continue to use the alternative monitoring method until he or she receives approval from the Administrator to use another monitoring method as allowed by § 63.8(f).
- (6) **Alternative to the relative accuracy test.** An alternative to the relative accuracy test for CEMS specified in a relevant standard may be requested as follows:
- (i) **Criteria for approval of alternative procedures.** An alternative to the test method for determining relative accuracy is available for affected sources with emission rates demonstrated to be less than 50 percent of the relevant standard. The owner or operator of an affected source may petition the Administrator under paragraph (f)(6)(ii) of this section to substitute the relative accuracy test in section 7 of Performance Specification 2 with the procedures in section 10 if the results of a performance test conducted according to the requirements in § 63.7, or other tests performed following the criteria in § 63.7, demonstrate that the emission rate of the

pollutant of interest in the units of the relevant standard is less than 50 percent of the relevant standard. For affected sources subject to emission limitations expressed as control efficiency levels, the owner or operator may petition the Administrator to substitute the relative accuracy test with the procedures in section 10 of Performance Specification 2 if the control device exhaust emission rate is less than 50 percent of the level needed to meet the control efficiency requirement. The alternative procedures do not apply if the CEMS is used continuously to determine compliance with the relevant standard.

- (ii) ***Petition to use alternative to relative accuracy test.*** The petition to use an alternative to the relative accuracy test shall include a detailed description of the procedures to be applied, the location and the procedure for conducting the alternative, the concentration or response levels of the alternative relative accuracy materials, and the other equipment checks included in the alternative procedure(s). The Administrator will review the petition for completeness and applicability. The Administrator's determination to approve an alternative will depend on the intended use of the CEMS data and may require specifications more stringent than in Performance Specification 2.
- (iii) ***Rescission of approval to use alternative to relative accuracy test.*** The Administrator will review the permission to use an alternative to the CEMS relative accuracy test and may rescind such permission if the CEMS data from a successful completion of the alternative relative accuracy procedure indicate that the affected source's emissions are approaching the level of the relevant standard. The criterion for reviewing the permission is that the collection of CEMS data shows that emissions have exceeded 70 percent of the relevant standard for any averaging period, as specified in the relevant standard. For affected sources subject to emission limitations expressed as control efficiency levels, the criterion for reviewing the permission is that the collection of CEMS data shows that exhaust emissions have exceeded 70 percent of the level needed to meet the control efficiency requirement for any averaging period, as specified in the relevant standard. The owner or operator of the affected source shall maintain records and determine the level of emissions relative to the criterion for permission to use an alternative for relative accuracy testing. If this criterion is exceeded, the owner or operator shall notify the Administrator within 10 days of such occurrence and include a description of the nature and cause of the increased emissions. The Administrator will review the notification and may rescind permission to use an alternative and require the owner or operator to conduct a relative accuracy test of the CEMS as specified in section 7 of Performance Specification 2. The Administrator will review the notification and may rescind permission to use an alternative and require the owner or operator to conduct a relative accuracy test of the CEMS as specified in section 8.4 of Performance Specification 2.

(g) ***Reduction of monitoring data.***

- (1) The owner or operator of each CMS must reduce the monitoring data as specified in paragraphs (g)(1) through (5) of this section.
- (2) The owner or operator of each COMS shall reduce all data to 6-minute averages calculated from 36 or more data points equally spaced over each 6-minute period. Data from CEMS for measurement other than opacity, unless otherwise specified in the relevant standard, shall be reduced to 1-hour averages computed from four or more data points equally spaced over each 1-hour period, except during periods when calibration, quality assurance, or maintenance activities pursuant to provisions

of this part are being performed. During these periods, a valid hourly average shall consist of at least two data points with each representing a 15-minute period. Alternatively, an arithmetic or integrated 1-hour average of CEMS data may be used. Time periods for averaging are defined in § 63.2.

- (3) The data may be recorded in reduced or nonreduced form (e.g., ppm pollutant and percent O₂ or ng/J of pollutant).
- (4) All emission data shall be converted into units of the relevant standard for reporting purposes using the conversion procedures specified in that standard. After conversion into units of the relevant standard, the data may be rounded to the same number of significant digits as used in that standard to specify the emission limit (e.g., rounded to the nearest 1 percent opacity).
- (5) Monitoring data recorded during periods of unavoidable CMS breakdowns, out-of-control periods, repairs, maintenance periods, calibration checks, and zero (low-level) and high-level adjustments must not be included in any data average computed under this part. For the owner or operator complying with the requirements of § 63.10(b)(2)(vii)(A) or (B), data averages must include any data recorded during periods of monitor breakdown or malfunction.

[59 FR 12430, Mar. 16, 1994, as amended at 64 FR 7468, Feb. 12, 1999; 67 FR 16603, Apr. 5, 2002; 71 FR 20455, Apr. 20, 2006; 79 FR 11277, Feb. 27, 2014; 83 FR 56725, Nov. 14, 2018]

§ 63.9 Notification requirements.

(a) *Applicability and general information.*

- (1) The applicability of this section is set out in § 63.1(a)(4).
- (2) For affected sources that have been granted an extension of compliance under subpart D of this part, the requirements of this section do not apply to those sources while they are operating under such compliance extensions.
- (3) If any State requires a notice that contains all the information required in a notification listed in this section, the owner or operator may send the Administrator a copy of the notice sent to the State to satisfy the requirements of this section for that notification.
- (4)
 - (i) Before a State has been delegated the authority to implement and enforce notification requirements established under this part, the owner or operator of an affected source in such State subject to such requirements shall submit notifications to the appropriate Regional Office of the EPA (to the attention of the Director of the Division indicated in the list of the EPA Regional Offices in § 63.13).
 - (ii) After a State has been delegated the authority to implement and enforce notification requirements established under this part, the owner or operator of an affected source in such State subject to such requirements shall submit notifications to the delegated State authority (which may be the same as the permitting authority). In addition, if the delegated (permitting) authority is the State, the owner or operator shall send a copy of each notification submitted to the State to the appropriate Regional Office of the EPA, as specified in paragraph (a)(4)(i) of this section. The Regional Office may waive this requirement for any notifications at its discretion.

(b) *Initial notifications.*

(1)

- (i) The requirements of this paragraph apply to the owner or operator of an affected source when such source becomes subject to a relevant standard.
- (ii) If an area source subsequently becomes a major source that is subject to the emission standard or other requirement, such source shall be subject to the notification requirements of this section. Area sources previously subject to major source requirements that become major sources again are also subject to the notification requirements of this paragraph and must submit the notification according to the requirements of paragraph (k) of this section.
- (iii) Affected sources that are required under this paragraph to submit an initial notification may use the application for approval of construction or reconstruction under § 63.5(d) of this subpart, if relevant, to fulfill the initial notification requirements of this paragraph.

(2) The owner or operator of an affected source that has an initial startup before the effective date of a relevant standard under this part shall notify the Administrator in writing that the source is subject to the relevant standard. The notification, which shall be submitted not later than 120 calendar days after the effective date of the relevant standard (or within 120 calendar days after the source becomes subject to the relevant standard), shall provide the following information:

- (i) The name and address of the owner or operator;
- (ii) The address (i.e., physical location) of the affected source;
- (iii) An identification of the relevant standard, or other requirement, that is the basis of the notification and the source's compliance date;
- (iv) A brief description of the nature, size, design, and method of operation of the source and an identification of the types of emission points within the affected source subject to the relevant standard and types of hazardous air pollutants emitted; and
- (v) A statement of whether the affected source is a major source or an area source.

(3) [Reserved]

(4) The owner or operator of a new or reconstructed major affected source for which an application for approval of construction or reconstruction is required under § 63.5(d) must provide the following information in writing to the Administrator:

- (i) A notification of intention to construct a new major-emitting affected source, reconstruct a major-emitting affected source, or reconstruct a major source such that the source becomes a major-emitting affected source with the application for approval of construction or reconstruction as specified in § 63.5(d)(1)(i); and

(ii)-(iv) [Reserved]

- (v) A notification of the actual date of startup of the source, delivered or postmarked within 15 calendar days after that date.

(5) The owner or operator of a new or reconstructed affected source for which an application for approval of construction or reconstruction is not required under § 63.5(d) must provide the following information in writing to the Administrator:

- (i) A notification of intention to construct a new affected source, reconstruct an affected source, or reconstruct a source such that the source becomes an affected source, and
 - (ii) A notification of the actual date of startup of the source, delivered or postmarked within 15 calendar days after that date.
 - (iii) Unless the owner or operator has requested and received prior permission from the Administrator to submit less than the information in § 63.5(d), the notification must include the information required on the application for approval of construction or reconstruction as specified in § 63.5(d)(1)(i).
- (c) **Request for extension of compliance.** If the owner or operator of an affected source cannot comply with a relevant standard by the applicable compliance date for that source, or if the owner or operator has installed BACT or technology to meet LAER consistent with § 63.6(i)(5) of this subpart, he/she may submit to the Administrator (or the State with an approved permit program) a request for an extension of compliance as specified in § 63.6(i)(4) through § 63.6(i)(6).
- (d) **Notification that source is subject to special compliance requirements.** An owner or operator of a new source that is subject to special compliance requirements as specified in § 63.6(b)(3) and § 63.6(b)(4) shall notify the Administrator of his/her compliance obligations not later than the notification dates established in paragraph (b) of this section for new sources that are not subject to the special provisions.
- (e) **Notification of performance test.** The owner or operator of an affected source shall notify the Administrator in writing of his or her intention to conduct a performance test at least 60 calendar days before the performance test is scheduled to begin to allow the Administrator to review and approve the site-specific test plan required under § 63.7(c), if requested by the Administrator, and to have an observer present during the test.
- (f) **Notification of opacity and visible emission observations.** The owner or operator of an affected source shall notify the Administrator in writing of the anticipated date for conducting the opacity or visible emission observations specified in § 63.6(h)(5), if such observations are required for the source by a relevant standard. The notification shall be submitted with the notification of the performance test date, as specified in paragraph (e) of this section, or if no performance test is required or visibility or other conditions prevent the opacity or visible emission observations from being conducted concurrently with the initial performance test required under § 63.7, the owner or operator shall deliver or postmark the notification not less than 30 days before the opacity or visible emission observations are scheduled to take place.
- (g) **Additional notification requirements for sources with continuous monitoring systems.** The owner or operator of an affected source required to use a CMS by a relevant standard shall furnish the Administrator written notification as follows:
 - (1) A notification of the date the CMS performance evaluation under § 63.8(e) is scheduled to begin, submitted simultaneously with the notification of the performance test date required under § 63.7(b). If no performance test is required, or if the requirement to conduct a performance test has been waived for an affected source under § 63.7(h), the owner or operator shall notify the Administrator in writing of the date of the performance evaluation at least 60 calendar days before the evaluation is scheduled to begin;

- (2) A notification that COMS data results will be used to determine compliance with the applicable opacity emission standard during a performance test required by § 63.7 in lieu of Method 9 or other opacity emissions test method data, as allowed by § 63.6(h)(7)(ii), if compliance with an opacity emission standard is required for the source by a relevant standard. The notification shall be submitted at least 60 calendar days before the performance test is scheduled to begin; and
- (3) A notification that the criterion necessary to continue use of an alternative to relative accuracy testing, as provided by § 63.8(f)(6), has been exceeded. The notification shall be delivered or postmarked not later than 10 days after the occurrence of such exceedance, and it shall include a description of the nature and cause of the increased emissions.

(h) ***Notification of compliance status.***

- (1) The requirements of paragraphs (h)(2) through (h)(4) of this section apply when an affected source becomes subject to a relevant standard.

(2)

- (i) Before a title V permit has been issued to the owner or operator of an affected source, and each time a notification of compliance status is required under this part, the owner or operator of such source shall submit to the Administrator a notification of compliance status, signed by the responsible official who shall certify its accuracy, attesting to whether the source has complied with the relevant standard. The notification shall list—

- (A) The methods that were used to determine compliance;
- (B) The results of any performance tests, opacity or visible emission observations, continuous monitoring system (CMS) performance evaluations, and/or other monitoring procedures or methods that were conducted;
- (C) The methods that will be used for determining continuing compliance, including a description of monitoring and reporting requirements and test methods;
- (D) The type and quantity of hazardous air pollutants emitted by the source (or surrogate pollutants if specified in the relevant standard), reported in units and averaging times and in accordance with the test methods specified in the relevant standard;
- (E) If the relevant standard applies to both major and area sources, an analysis demonstrating whether the affected source is a major source (using the emissions data generated for this notification);
- (F) A description of the air pollution control equipment (or method) for each emission point, including each control device (or method) for each hazardous air pollutant and the control efficiency (percent) for each control device (or method); and
- (G) A statement by the owner or operator of the affected existing, new, or reconstructed source as to whether the source has complied with the relevant standard or other requirements.

- (ii) The notification must be sent before the close of business on the 60th day following the completion of the relevant compliance demonstration activity specified in the relevant standard (unless a different reporting period is specified in the standard, in which case the letter must be sent before the close of business on the day the report of the relevant testing or monitoring results is required to be delivered or postmarked). For example, the notification shall be sent

before close of business on the 60th (or other required) day following completion of the initial performance test and again before the close of business on the 60th (or other required) day following the completion of any subsequent required performance test. If no performance test is required but opacity or visible emission observations are required to demonstrate compliance with an opacity or visible emission standard under this part, the notification of compliance status shall be sent before close of business on the 30th day following the completion of opacity or visible emission observations. Notifications may be combined as long as the due date requirement for each notification is met.

- (3) After a title V permit has been issued to the owner or operator of an affected source, the owner or operator of such source shall comply with all requirements for compliance status reports contained in the source's title V permit, including reports required under this part. After a title V permit has been issued to the owner or operator of an affected source, and each time a notification of compliance status is required under this part, the owner or operator of such source shall submit the notification of compliance status to the appropriate permitting authority following completion of the relevant compliance demonstration activity specified in the relevant standard.

(4) [Reserved]

- (5) If an owner or operator of an affected source submits estimates or preliminary information in the application for approval of construction or reconstruction required in § 63.5(d) in place of the actual emissions data or control efficiencies required in paragraphs (d)(1)(ii)(H) and (d)(2) of § 63.5, the owner or operator shall submit the actual emissions data and other correct information as soon as available but no later than with the initial notification of compliance status required in this section.

- (6) Advice on a notification of compliance status may be obtained from the Administrator.

(i) ***Adjustment to time periods or postmark deadlines for submittal and review of required communications.***

(1)

- (i) Until an adjustment of a time period or postmark deadline has been approved by the Administrator under paragraphs (i)(2) and (i)(3) of this section, the owner or operator of an affected source remains strictly subject to the requirements of this part.
- (ii) An owner or operator shall request the adjustment provided for in paragraphs (i)(2) and (i)(3) of this section each time he or she wishes to change an applicable time period or postmark deadline specified in this part.

- (2) Notwithstanding time periods or postmark deadlines specified in this part for the submittal of information to the Administrator by an owner or operator, or the review of such information by the Administrator, such time periods or deadlines may be changed by mutual agreement between the owner or operator and the Administrator. An owner or operator who wishes to request a change in a time period or postmark deadline for a particular requirement shall request the adjustment in writing as soon as practicable before the subject activity is required to take place. The owner or operator shall include in the request whatever information he or she considers useful to convince the Administrator that an adjustment is warranted.

- (3) If, in the Administrator's judgment, an owner or operator's request for an adjustment to a particular time period or postmark deadline is warranted, the Administrator will approve the adjustment. The Administrator will notify the owner or operator in writing of approval or disapproval of the request for an adjustment within 15 calendar days of receiving sufficient information to evaluate the request.

- (4) If the Administrator is unable to meet a specified deadline, he or she will notify the owner or operator of any significant delay and inform the owner or operator of the amended schedule.

(j) ***Change in information already provided.*** Any change in the information already provided under this section shall be provided to the Administrator within 15 calendar days after the change. The owner or operator of a major source that reclassifies to area source status is also subject to the notification requirements of this paragraph. The owner or operator may submit the application for reclassification with the regulatory authority (e.g., permit application) according to paragraph (k) of this section to fulfill the requirements of this paragraph, but the information required in paragraphs (j)(1) through (4) of this section must be included. A source which reclassified after January 25, 2018, and before January 19, 2021, and has not yet provided the notification of a change in information is required to provide such notification no later than February 2, 2021, according to the requirements of paragraph (k) of this section. Beginning January 19, 2021, the owner or operator of a major source that reclassifies to area source status must submit the notification according to the requirements of paragraph (k) of this section. A notification of reclassification must contain the following information:

- (1) The name and address of the owner or operator;
- (2) The address (i.e., physical location) of the affected source;
- (3) An identification of the standard being reclassified from and to (if applicable); and
- (4) Date of effectiveness of the reclassification.

(k) ***Electronic submission of notifications or reports.*** If you are required to submit notifications or reports following the procedure specified in this paragraph (k), you must submit notifications or reports to the EPA via the EPA's Compliance and Emissions Data Reporting Interface (CEDRI), which can be accessed through the EPA's Central Data Exchange (CDX) (<https://cdx.epa.gov/>). The notification or report must be submitted by the deadline specified. The EPA will make all the information submitted through CEDRI available to the public without further notice to you. Do not use CEDRI to submit information you claim as confidential business information (CBI). Although we do not expect persons to assert a claim of CBI, if you wish to assert a CBI claim for some of the information in the report or notification, you must submit the information claimed to be CBI according to the procedures in paragraph (k)(3) of this section.

- (1) If you are required to electronically submit a notification or report by this paragraph (k) through CEDRI in the EPA's CDX, you may assert a claim of EPA system outage for failure to timely comply with the electronic submittal requirement. To assert a claim of EPA system outage, you must meet the requirements outlined in paragraphs (k)(1)(i) through (vii) of this section.
 - (i) You must have been or will be precluded from accessing CEDRI and submitting a required notification or report within the time prescribed due to an outage of either the EPA's CEDRI or CDX systems.
 - (ii) The outage must have occurred within the period of time beginning 5 business days prior to the date that the notification or report is due.
 - (iii) The outage may be planned or unplanned.
 - (iv) You must submit notification to the Administrator in writing as soon as possible following the date you first knew, or through due diligence should have known, that the event may cause or has caused a delay in reporting.
 - (v) You must provide to the Administrator a written description identifying:

- (A) The date(s) and time(s) when CDX or CEDRI was accessed and the system was unavailable;
 - (B) A rationale for attributing the delay in submitting beyond the regulatory deadline to EPA system outage;
 - (C) Measures taken or to be taken to minimize the delay in submitting; and
 - (D) The date by which you propose to submit, or if you have already met the electronic submittal requirement in this paragraph (k) at the time of the notification, the date you submitted the notification or report.
- (vi) The decision to accept the claim of EPA system outage and allow an extension to the reporting deadline is solely within the discretion of the Administrator.
- (vii) In any circumstance, the notification or report must be submitted electronically as soon as possible after the outage is resolved.
- (2) If you are required to electronically submit a notification or report by this paragraph (k) through CEDRI in the EPA's CDX, you may assert a claim of force majeure for failure to timely comply with the electronic submittal requirement. To assert a claim of force majeure, you must meet the requirements outlined in paragraphs (k)(2)(i) through (v) of this section.
 - (i) You may submit a claim if a force majeure event is about to occur, occurs, or has occurred or there are lingering effects from such an event within the period of time beginning five business days prior to the date the submission is due. For the purposes of this section, a force majeure event is defined as an event that will be or has been caused by circumstances beyond the control of the affected facility, its contractors, or any entity controlled by the affected facility that prevents you from complying with the requirement to submit a notification or report electronically within the time period prescribed. Examples of such events are acts of nature (e.g., hurricanes, earthquakes, or floods), acts of war or terrorism, or equipment failure or safety hazard beyond the control of the affected facility (e.g., large scale power outage).
 - (ii) You must submit notification to the Administrator in writing as soon as possible following the date you first knew, or through due diligence should have known, that the event may cause or has caused a delay in submitting through CEDRI.
 - (iii) You must provide to the Administrator:
 - (A) A written description of the force majeure event;
 - (B) A rationale for attributing the delay in reporting beyond the regulatory deadline to the force majeure event;
 - (C) Measures taken or to be taken to minimize the delay in reporting; and
 - (D) The date by which you propose to submit the notification or report, or if you have already met the electronic submittal requirement in this paragraph (k) at the time of the notification, the date you submitted the notification or report.
 - (iv) The decision to accept the claim of force majeure and allow an extension to the submittal deadline is solely within the discretion of the Administrator.
 - (v) In any circumstance, the reporting must occur as soon as possible after the force majeure event occurs.

- (3) If you wish to assert a CBI claim for some of the information submitted under paragraph (k) of this section, you must submit a complete file, including information claimed to be CBI, to the EPA following the procedures in paragraphs (k)(3)(i) through (iv) of this section. Where a subpart specifies a specific file format for the report or notification for which you are asserting a claim of CBI, the complete file that you submit under this paragraph (k)(3) must be in the same file format specified in the subpart.
- (i) Clearly mark the part or all of the information that you claim to be CBI. Information not marked as CBI may be authorized for public release without prior notice. Information marked as CBI will not be disclosed except in accordance with procedures set forth in 40 CFR part 2. All CBI claims must be asserted at the time of submission. Anything submitted using CEDRI cannot later be claimed CBI. Furthermore, under CAA section 114(c), emissions data are not entitled to confidential treatment, and the EPA is required to make emissions data available to the public. Thus, emissions data will not be protected as CBI and will be made publicly available.
- (ii) You must submit the same file submitted to the CBI office with the CBI omitted to the EPA via the EPA's CDX as described in paragraph (k) of this section.
- (iii) The preferred method to receive CBI is for it to be transmitted electronically using email attachments, File Transfer Protocol, or other online file sharing services. Electronic submissions must be transmitted directly to the OAQPS CBI Office at the email address oaqpscbi@epa.gov, and as described above, should include clear CBI markings. Electronic Reporting Tool (ERT) files should be flagged to the attention of the Group Leader, Measurement Policy Group; all other files should be flagged to the attention of the Sector Lead for the subpart for which you are submitting your notification or report. If assistance is needed with submitting large electronic files that exceed the file size limit for email attachments, and if you do not have your own file sharing service, please email oaqpscbi@epa.gov to request a file transfer link.
- (iv) If you cannot transmit the file electronically, you may send CBI information through the postal service to the following address: U.S. EPA, Attn: OAQPS Document Control Officer, Mail Drop: C404-02, 109 T.W. Alexander Drive, P.O. Box 12055, RTP, NC 27711. ERT files should also be flagged to the attention of the Group Leader, Measurement Policy Group; all other files should also be flagged to the attention of the Sector Lead for the subpart for which you are submitting your notification or report. The mailed CBI material should be double wrapped and clearly marked. Any CBI markings should not show through the outer envelope.

[59 FR 12430, Mar. 16, 1994, as amended at 64 FR 7468, Feb. 12, 1999; 67 FR 16604, Apr. 5, 2002; 68 FR 32601, May 30, 2003; 85 FR 73885, Nov. 19, 2020; 89 FR 73307, Sept. 10, 2024]

§ 63.10 Recordkeeping and reporting requirements.

(a) *Applicability and general information.*

- (1) The applicability of this section is set out in § 63.1(a)(4).
- (2) For affected sources that have been granted an extension of compliance under subpart D of this part, the requirements of this section do not apply to those sources while they are operating under such compliance extensions.

- (3) If any State requires a report that contains all the information required in a report listed in this section, an owner or operator may send the Administrator a copy of the report sent to the State to satisfy the requirements of this section for that report.
- (4)
 - (i) Before a State has been delegated the authority to implement and enforce recordkeeping and reporting requirements established under this part, the owner or operator of an affected source in such State subject to such requirements shall submit reports to the appropriate Regional Office of the EPA (to the attention of the Director of the Division indicated in the list of the EPA Regional Offices in § 63.13).
 - (ii) After a State has been delegated the authority to implement and enforce recordkeeping and reporting requirements established under this part, the owner or operator of an affected source in such State subject to such requirements shall submit reports to the delegated State authority (which may be the same as the permitting authority). In addition, if the delegated (permitting) authority is the State, the owner or operator shall send a copy of each report submitted to the State to the appropriate Regional Office of the EPA, as specified in paragraph (a)(4)(i) of this section. The Regional Office may waive this requirement for any reports at its discretion.
- (5) If an owner or operator of an affected source in a State with delegated authority is required to submit periodic reports under this part to the State, and if the State has an established timeline for the submission of periodic reports that is consistent with the reporting frequency(ies) specified for such source under this part, the owner or operator may change the dates by which periodic reports under this part shall be submitted (without changing the frequency of reporting) to be consistent with the State's schedule by mutual agreement between the owner or operator and the State. For each relevant standard established pursuant to section 112 of the Act, the allowance in the previous sentence applies in each State beginning 1 year after the affected source's compliance date for that standard. Procedures governing the implementation of this provision are specified in § 63.9(i).
- (6) If an owner or operator supervises one or more stationary sources affected by more than one standard established pursuant to section 112 of the Act, he/she may arrange by mutual agreement between the owner or operator and the Administrator (or the State permitting authority) a common schedule on which periodic reports required for each source shall be submitted throughout the year. The allowance in the previous sentence applies in each State beginning 1 year after the latest compliance date for any relevant standard established pursuant to section 112 of the Act for any such affected source(s). Procedures governing the implementation of this provision are specified in § 63.9(i).
- (7) If an owner or operator supervises one or more stationary sources affected by standards established pursuant to section 112 of the Act (as amended November 15, 1990) and standards set under part 60, part 61, or both such parts of this chapter, he/she may arrange by mutual agreement between the owner or operator and the Administrator (or the State permitting authority) a common schedule on which periodic reports required by each relevant (i.e., applicable) standard shall be submitted throughout the year. The allowance in the previous sentence applies in each State beginning 1 year after the stationary source is required to be in compliance with the relevant section 112 standard, or 1 year after the stationary source is required to be in compliance with the applicable part 60 or part 61 standard, whichever is latest. Procedures governing the implementation of this provision are specified in § 63.9(i).

(b) *General recordkeeping requirements.*

- (1) The owner or operator of an affected source subject to the provisions of this part shall maintain files of all information (including all reports and notifications) required by this part recorded in a form suitable and readily available for expeditious inspection and review. The files shall be retained for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent 2 years of data shall be retained on site. The remaining 3 years of data may be retained off site. Such files may be maintained on microfilm, on a computer, on computer floppy disks, on magnetic tape disks, or on microfiche.
- (2) The owner or operator of an affected source subject to the provisions of this part shall maintain relevant records for such source of—
 - (i) The occurrence and duration of each startup or shutdown when the startup or shutdown causes the source to exceed any applicable emission limitation in the relevant emission standards;
 - (ii) The occurrence and duration of each malfunction of operation (i.e., process equipment) or the required air pollution control and monitoring equipment;
 - (iii) All required maintenance performed on the air pollution control and monitoring equipment;
 - (iv)
 - (A) Actions taken during periods of startup or shutdown when the source exceeded applicable emission limitations in a relevant standard and when the actions taken are different from the procedures specified in the affected source's startup, shutdown, and malfunction plan (see § 63.6(e)(3)); or
 - (B) Actions taken during periods of malfunction (including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation) when the actions taken are different from the procedures specified in the affected source's startup, shutdown, and malfunction plan (see § 63.6(e)(3));
 - (v) All information necessary, including actions taken, to demonstrate conformance with the affected source's startup, shutdown, and malfunction plan (see § 63.6(e)(3)) when all actions taken during periods of startup or shutdown (and the startup or shutdown causes the source to exceed any applicable emission limitation in the relevant emission standards), and malfunction (including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation) are consistent with the procedures specified in such plan. (The information needed to demonstrate conformance with the startup, shutdown, and malfunction plan may be recorded using a "checklist," or some other effective form of recordkeeping, in order to minimize the recordkeeping burden for conforming events);
 - (vi) Each period during which a CMS is malfunctioning or inoperative (including out-of-control periods);
 - (vii) All required measurements needed to demonstrate compliance with a relevant standard (including, but not limited to, 15-minute averages of CMS data, raw performance testing measurements, and raw performance evaluation measurements, that support data that the source is required to report);

- (A) This paragraph applies to owners or operators required to install a continuous emissions monitoring system (CEMS) where the CEMS installed is automated, and where the calculated data averages do not exclude periods of CEMS breakdown or malfunction. An automated CEMS records and reduces the measured data to the form of the pollutant emission standard through the use of a computerized data acquisition system. In lieu of maintaining a file of all CEMS subhourly measurements as required under paragraph (b)(2)(vii) of this section, the owner or operator shall retain the most recent consecutive three averaging periods of subhourly measurements and a file that contains a hard copy of the data acquisition system algorithm used to reduce the measured data into the reportable form of the standard.
 - (B) This paragraph applies to owners or operators required to install a CEMS where the measured data is manually reduced to obtain the reportable form of the standard, and where the calculated data averages do not exclude periods of CEMS breakdown or malfunction. In lieu of maintaining a file of all CEMS subhourly measurements as required under paragraph (b)(2)(vii) of this section, the owner or operator shall retain all subhourly measurements for the most recent reporting period. The subhourly measurements shall be retained for 120 days from the date of the most recent summary or excess emission report submitted to the Administrator.
 - (C) The Administrator or delegated authority, upon notification to the source, may require the owner or operator to maintain all measurements as required by paragraph (b)(2)(vii), if the administrator or the delegated authority determines these records are required to more accurately assess the compliance status of the affected source.
- (viii) All results of performance tests, CMS performance evaluations, and opacity and visible emission observations;
 - (ix) All measurements as may be necessary to determine the conditions of performance tests and performance evaluations;
 - (x) All CMS calibration checks;
 - (xi) All adjustments and maintenance performed on CMS;
 - (xii) Any information demonstrating whether a source is meeting the requirements for a waiver of recordkeeping or reporting requirements under this part, if the source has been granted a waiver under paragraph (f) of this section;
 - (xiii) All emission levels relative to the criterion for obtaining permission to use an alternative to the relative accuracy test, if the source has been granted such permission under § 63.8(f)(6); and
 - (xiv) All documentation supporting initial notifications and notifications of compliance status under § 63.9.
- (3) If an owner or operator determines that his or her existing or new stationary source is in the source category regulated by a standard established pursuant to section 112 of the Act, but that source is not subject to the relevant standard (or other requirement established under this part) because of enforceable limitations on the source's potential to emit, or the source otherwise qualifies for an exclusion, the owner or operator must keep a record of the applicability determination. The applicability determination must be kept on site at the source for a period of 5 years after the determination, or until the source changes its operations to become an affected source subject to

the relevant standard (or other requirement established under this part), whichever comes first if the determination is made prior to January 19, 2021. The applicability determination must be kept until the source changes its operations to become an affected source subject to the relevant standard (or other requirement established under this part) if the determination was made on or after January 19, 2021. The record of the applicability determination must be signed by the person making the determination and include an emissions analysis (or other information) that demonstrates the owner or operator's conclusion that the source is unaffected (e.g., because the source is an area source). The analysis (or other information) must be sufficiently detailed to allow the Administrator to make an applicability finding for the source with regard to the relevant standard or other requirement. If applicable, the analysis must be performed in accordance with requirements established in relevant subparts of this part for this purpose for particular categories of stationary sources. If relevant, the analysis should be performed in accordance with EPA guidance materials published to assist sources in making applicability determinations under section 112 of the Act, if any. The requirements to determine applicability of a standard under § 63.1(b)(3) and to record the results of that determination under this paragraph (b)(3) of this section shall not by themselves create an obligation for the owner or operator to obtain a title V permit.

- (c) ***Additional recordkeeping requirements for sources with continuous monitoring systems.*** In addition to complying with the requirements specified in paragraphs (b)(1) and (b)(2) of this section, the owner or operator of an affected source required to install a CMS by a relevant standard shall maintain records for such source of—
- (1) All required CMS measurements (including monitoring data recorded during unavoidable CMS breakdowns and out-of-control periods);
 - (2)-(4) [Reserved]
 - (5) The date and time identifying each period during which the CMS was inoperative except for zero (low-level) and high-level checks;
 - (6) The date and time identifying each period during which the CMS was out of control, as defined in § 63.8(c)(7);
 - (7) The specific identification (i.e., the date and time of commencement and completion) of each period of excess emissions and parameter monitoring exceedances, as defined in the relevant standard(s), that occurs during startups, shutdowns, and malfunctions of the affected source;
 - (8) The specific identification (i.e., the date and time of commencement and completion) of each time period of excess emissions and parameter monitoring exceedances, as defined in the relevant standard(s), that occurs during periods other than startups, shutdowns, and malfunctions of the affected source;
 - (9) [Reserved]
 - (10) The nature and cause of any malfunction (if known);
 - (11) The corrective action taken or preventive measures adopted;
 - (12) The nature of the repairs or adjustments to the CMS that was inoperative or out of control;
 - (13) The total process operating time during the reporting period; and
 - (14) All procedures that are part of a quality control program developed and implemented for CMS under § 63.8(d).

- (15) In order to satisfy the requirements of paragraphs (c)(10) through (c)(12) of this section and to avoid duplicative recordkeeping efforts, the owner or operator may use the affected source's startup, shutdown, and malfunction plan or records kept to satisfy the recordkeeping requirements of the startup, shutdown, and malfunction plan specified in § 63.6(e), provided that such plan and records adequately address the requirements of paragraphs (c)(10) through (c)(12).

(d) **General reporting requirements.**

- (1) Notwithstanding the requirements in this paragraph or paragraph (e) of this section, and except as provided in § 63.16, the owner or operator of an affected source subject to reporting requirements under this part shall submit reports to the Administrator in accordance with the reporting requirements in the relevant standard(s).
- (2) **Reporting results of performance tests.** Before a title V permit has been issued to the owner or operator of an affected source, the owner or operator shall report the results of any performance test under § 63.7 to the Administrator. After a title V permit has been issued to the owner or operator of an affected source, the owner or operator shall report the results of a required performance test to the appropriate permitting authority. The owner or operator of an affected source shall report the results of the performance test to the Administrator (or the State with an approved permit program) before the close of business on the 60th day following the completion of the performance test, unless specified otherwise in a relevant standard or as approved otherwise in writing by the Administrator. The results of the performance test shall be submitted as part of the notification of compliance status required under § 63.9(h).
- (3) **Reporting results of opacity or visible emission observations.** The owner or operator of an affected source required to conduct opacity or visible emission observations by a relevant standard shall report the opacity or visible emission results (produced using Test Method 9 or Test Method 22, or an alternative to these test methods) along with the results of the performance test required under § 63.7. If no performance test is required, or if visibility or other conditions prevent the opacity or visible emission observations from being conducted concurrently with the performance test required under § 63.7, the owner or operator shall report the opacity or visible emission results before the close of business on the 30th day following the completion of the opacity or visible emission observations.
- (4) **Progress reports.** The owner or operator of an affected source who is required to submit progress reports as a condition of receiving an extension of compliance under § 63.6(i) shall submit such reports to the Administrator (or the State with an approved permit program) by the dates specified in the written extension of compliance.
- (5)
- (i) **Periodic startup, shutdown, and malfunction reports.** If actions taken by an owner or operator during a startup or shutdown (and the startup or shutdown causes the source to exceed any applicable emission limitation in the relevant emission standards), or malfunction of an affected source (including actions taken to correct a malfunction) are consistent with the procedures specified in the source's startup, shutdown, and malfunction plan (see § 63.6(e)(3)), the owner or operator shall state such information in a startup, shutdown, and malfunction report. Actions taken to minimize emissions during such startups, shutdowns, and malfunctions shall be summarized in the report and may be done in checklist form; if actions taken are the same for each event, only one checklist is necessary. Such a report shall also include the number, duration, and a brief description for each type of malfunction which

occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. Reports shall only be required if a startup or shutdown caused the source to exceed any applicable emission limitation in the relevant emission standards, or if a malfunction occurred during the reporting period. The startup, shutdown, and malfunction report shall consist of a letter, containing the name, title, and signature of the owner or operator or other responsible official who is certifying its accuracy, that shall be submitted to the Administrator semiannually (or on a more frequent basis if specified otherwise in a relevant standard or as established otherwise by the permitting authority in the source's title V permit). The startup, shutdown, and malfunction report shall be delivered or postmarked by the 30th day following the end of each calendar half (or other calendar reporting period, as appropriate). If the owner or operator is required to submit excess emissions and continuous monitoring system performance (or other periodic) reports under this part, the startup, shutdown, and malfunction reports required under this paragraph may be submitted simultaneously with the excess emissions and continuous monitoring system performance (or other) reports. If startup, shutdown, and malfunction reports are submitted with excess emissions and continuous monitoring system performance (or other periodic) reports, and the owner or operator receives approval to reduce the frequency of reporting for the latter under paragraph (e) of this section, the frequency of reporting for the startup, shutdown, and malfunction reports also may be reduced if the Administrator does not object to the intended change. The procedures to implement the allowance in the preceding sentence shall be the same as the procedures specified in paragraph (e)(3) of this section.

- (ii) ***Immediate startup, shutdown, and malfunction reports.*** Notwithstanding the allowance to reduce the frequency of reporting for periodic startup, shutdown, and malfunction reports under paragraph (d)(5)(i) of this section, any time an action taken by an owner or operator during a startup or shutdown that caused the source to exceed any applicable emission limitation in the relevant emission standards, or malfunction (including actions taken to correct a malfunction) is not consistent with the procedures specified in the affected source's startup, shutdown, and malfunction plan, the owner or operator shall report the actions taken for that event within 2 working days after commencing actions inconsistent with the plan followed by a letter within 7 working days after the end of the event. The immediate report required under this paragraph (d)(5)(ii) shall consist of a telephone call (or facsimile (FAX) transmission) to the Administrator within 2 working days after commencing actions inconsistent with the plan, and it shall be followed by a letter, delivered or postmarked within 7 working days after the end of the event, that contains the name, title, and signature of the owner or operator or other responsible official who is certifying its accuracy, explaining the circumstances of the event, the reasons for not following the startup, shutdown, and malfunction plan, describing all excess emissions and/or parameter monitoring exceedances which are believed to have occurred (or could have occurred in the case of malfunctions), and actions taken to minimize emissions in conformance with § 63.6(e)(1)(i). Notwithstanding the requirements of the previous sentence, after the effective date of an approved permit program in the State in which an affected source is located, the owner or operator may make alternative reporting arrangements, in advance, with the permitting authority in that State. Procedures governing the arrangement of alternative reporting requirements under this paragraph (d)(5)(ii) are specified in § 63.9(i).

- (e) ***Additional reporting requirements for sources with continuous monitoring systems —***

- (1) **General.** When more than one CEMS is used to measure the emissions from one affected source (e.g., multiple breechings, multiple outlets), the owner or operator shall report the results as required for each CEMS.
- (2) **Reporting results of continuous monitoring system performance evaluations.**
 - (i) The owner or operator of an affected source required to install a CMS by a relevant standard shall furnish the Administrator a copy of a written report of the results of the CMS performance evaluation, as required under § 63.8(e), simultaneously with the results of the performance test required under § 63.7, unless otherwise specified in the relevant standard.
 - (ii) The owner or operator of an affected source using a COMS to determine opacity compliance during any performance test required under § 63.7 and described in § 63.6(d)(6) shall furnish the Administrator two or, upon request, three copies of a written report of the results of the COMS performance evaluation conducted under § 63.8(e). The copies shall be furnished at least 15 calendar days before the performance test required under § 63.7 is conducted.
- (3) **Excess emissions and continuous monitoring system performance report and summary report.**
 - (i) Excess emissions and parameter monitoring exceedances are defined in relevant standards. The owner or operator of an affected source required to install a CMS by a relevant standard shall submit an excess emissions and continuous monitoring system performance report and/or a summary report to the Administrator semiannually, except when—
 - (A) More frequent reporting is specifically required by a relevant standard;
 - (B) The Administrator determines on a case-by-case basis that more frequent reporting is necessary to accurately assess the compliance status of the source; or
 - (C) [Reserved]
 - (D) The affected source is complying with the Performance Track Provisions of § 63.16, which allows less frequent reporting.
 - (ii) **Request to reduce frequency of excess emissions and continuous monitoring system performance reports.** Notwithstanding the frequency of reporting requirements specified in paragraph (e)(3)(i) of this section, an owner or operator who is required by a relevant standard to submit excess emissions and continuous monitoring system performance (and summary) reports on a quarterly (or more frequent) basis may reduce the frequency of reporting for that standard to semiannual if the following conditions are met:
 - (A) For 1 full year (e.g., 4 quarterly or 12 monthly reporting periods) the affected source's excess emissions and continuous monitoring system performance reports continually demonstrate that the source is in compliance with the relevant standard;
 - (B) The owner or operator continues to comply with all recordkeeping and monitoring requirements specified in this subpart and the relevant standard; and
 - (C) The Administrator does not object to a reduced frequency of reporting for the affected source, as provided in paragraph (e)(3)(iii) of this section.
 - (iii) The frequency of reporting of excess emissions and continuous monitoring system performance (and summary) reports required to comply with a relevant standard may be reduced only after the owner or operator notifies the Administrator in writing of his or her

intention to make such a change and the Administrator does not object to the intended change. In deciding whether to approve a reduced frequency of reporting, the Administrator may review information concerning the source's entire previous performance history during the 5-year recordkeeping period prior to the intended change, including performance test results, monitoring data, and evaluations of an owner or operator's conformance with operation and maintenance requirements. Such information may be used by the Administrator to make a judgment about the source's potential for noncompliance in the future. If the Administrator disapproves the owner or operator's request to reduce the frequency of reporting, the Administrator will notify the owner or operator in writing within 45 days after receiving notice of the owner or operator's intention. The notification from the Administrator to the owner or operator will specify the grounds on which the disapproval is based. In the absence of a notice of disapproval within 45 days, approval is automatically granted.

- (iv) As soon as CMS data indicate that the source is not in compliance with any emission limitation or operating parameter specified in the relevant standard, the frequency of reporting shall revert to the frequency specified in the relevant standard, and the owner or operator shall submit an excess emissions and continuous monitoring system performance (and summary) report for the noncomplying emission points at the next appropriate reporting period following the noncomplying event. After demonstrating ongoing compliance with the relevant standard for another full year, the owner or operator may again request approval from the Administrator to reduce the frequency of reporting for that standard, as provided for in paragraphs (e)(3)(ii) and (e)(3)(iii) of this section.
- (v) **Content and submittal dates for excess emissions and monitoring system performance reports.** All excess emissions and monitoring system performance reports and all summary reports, if required, shall be delivered or postmarked by the 30th day following the end of each calendar half or quarter, as appropriate. Written reports of excess emissions or exceedances of process or control system parameters shall include all the information required in paragraphs (c)(5) through (c)(13) of this section, in §§ 63.8(c)(7) and 63.8(c)(8), and in the relevant standard, and they shall contain the name, title, and signature of the responsible official who is certifying the accuracy of the report. When no excess emissions or exceedances of a parameter have occurred, or a CMS has not been inoperative, out of control, repaired, or adjusted, such information shall be stated in the report.
- (vi) **Summary report.** As required under paragraphs (e)(3)(vii) and (e)(3)(viii) of this section, one summary report shall be submitted for the hazardous air pollutants monitored at each affected source (unless the relevant standard specifies that more than one summary report is required, e.g., one summary report for each hazardous air pollutant monitored). The summary report shall be entitled "Summary Report—Gaseous and Opacity Excess Emission and Continuous Monitoring System Performance" and shall contain the following information:
 - (A) The company name and address of the affected source;
 - (B) An identification of each hazardous air pollutant monitored at the affected source;
 - (C) The beginning and ending dates of the reporting period;
 - (D) A brief description of the process units;
 - (E) The emission and operating parameter limitations specified in the relevant standard(s);
 - (F) The monitoring equipment manufacturer(s) and model number(s);

- (G) The date of the latest CMS certification or audit;
 - (H) The total operating time of the affected source during the reporting period;
 - (I) An emission data summary (or similar summary if the owner or operator monitors control system parameters), including the total duration of excess emissions during the reporting period (recorded in minutes for opacity and hours for gases), the total duration of excess emissions expressed as a percent of the total source operating time during that reporting period, and a breakdown of the total duration of excess emissions during the reporting period into those that are due to startup/shutdown, control equipment problems, process problems, other known causes, and other unknown causes;
 - (J) A CMS performance summary (or similar summary if the owner or operator monitors control system parameters), including the total CMS downtime during the reporting period (recorded in minutes for opacity and hours for gases), the total duration of CMS downtime expressed as a percent of the total source operating time during that reporting period, and a breakdown of the total CMS downtime during the reporting period into periods that are due to monitoring equipment malfunctions, nonmonitoring equipment malfunctions, quality assurance/quality control calibrations, other known causes, and other unknown causes;
 - (K) A description of any changes in CMS, processes, or controls since the last reporting period;
 - (L) The name, title, and signature of the responsible official who is certifying the accuracy of the report; and
 - (M) The date of the report.
- (vii) If the total duration of excess emissions or process or control system parameter exceedances for the reporting period is less than 1 percent of the total operating time for the reporting period, and CMS downtime for the reporting period is less than 5 percent of the total operating time for the reporting period, only the summary report shall be submitted, and the full excess emissions and continuous monitoring system performance report need not be submitted unless required by the Administrator.
- (viii) If the total duration of excess emissions or process or control system parameter exceedances for the reporting period is 1 percent or greater of the total operating time for the reporting period, or the total CMS downtime for the reporting period is 5 percent or greater of the total operating time for the reporting period, both the summary report and the excess emissions and continuous monitoring system performance report shall be submitted.
- (4) **Reporting continuous opacity monitoring system data produced during a performance test.** The owner or operator of an affected source required to use a COMS shall record the monitoring data produced during a performance test required under § 63.7 and shall furnish the Administrator a written report of the monitoring results. The report of COMS data shall be submitted simultaneously with the report of the performance test results required in paragraph (d)(2) of this section.
- (f) **Waiver of recordkeeping or reporting requirements.**
- (1) Until a waiver of a recordkeeping or reporting requirement has been granted by the Administrator under this paragraph, the owner or operator of an affected source remains subject to the requirements of this section.

- (2) Recordkeeping or reporting requirements may be waived upon written application to the Administrator if, in the Administrator's judgment, the affected source is achieving the relevant standard(s), or the source is operating under an extension of compliance, or the owner or operator has requested an extension of compliance and the Administrator is still considering that request.
- (3) If an application for a waiver of recordkeeping or reporting is made, the application shall accompany the request for an extension of compliance under § 63.6(i), any required compliance progress report or compliance status report required under this part (such as under §§ 63.6(i) and 63.9(h)) or in the source's title V permit, or an excess emissions and continuous monitoring system performance report required under paragraph (e) of this section, whichever is applicable. The application shall include whatever information the owner or operator considers useful to convince the Administrator that a waiver of recordkeeping or reporting is warranted.
- (4) The Administrator will approve or deny a request for a waiver of recordkeeping or reporting requirements under this paragraph when he/she—
 - (i) Approves or denies an extension of compliance; or
 - (ii) Makes a determination of compliance following the submission of a required compliance status report or excess emissions and continuous monitoring systems performance report; or
 - (iii) Makes a determination of suitable progress towards compliance following the submission of a compliance progress report, whichever is applicable.
- (5) A waiver of any recordkeeping or reporting requirement granted under this paragraph may be conditioned on other recordkeeping or reporting requirements deemed necessary by the Administrator.
- (6) Approval of any waiver granted under this section shall not abrogate the Administrator's authority under the Act or in any way prohibit the Administrator from later canceling the waiver. The cancellation will be made only after notice is given to the owner or operator of the affected source.

[59 FR 12430, Mar. 16, 1994, as amended at 64 FR 7468, Feb. 12, 1999; 67 FR 16604, Apr. 5, 2002; 68 FR 32601, May 30, 2003; 69 FR 21752, Apr. 22, 2004; 71 FR 20455, Apr. 20, 2006; 85 FR 73886, Nov. 19, 2020]

§ 63.11 Control device and work practice requirements.

(a) *Applicability.*

- (1) The applicability of this section is set out in § 63.1(a)(4).
- (2) This section contains requirements for control devices used to comply with applicable subparts of this part. The requirements are placed here for administrative convenience and apply only to facilities covered by subparts referring to this section.
- (3) This section also contains requirements for an alternative work practice used to identify leaking equipment. This alternative work practice is placed here for administrative convenience and is available to all subparts in 40 CFR parts 60, 61, 63, and 65 that require monitoring of equipment with a 40 CFR part 60, appendix A-7, Method 21 monitor.

(b) *Flares.*

- (1) Owners or operators using flares to comply with the provisions of this part shall monitor these control devices to assure that they are operated and maintained in conformance with their designs. Applicable subparts will provide provisions stating how owners or operators using flares shall monitor these control devices.
- (2) Flares shall be steam-assisted, air-assisted, or non-assisted.
- (3) Flares shall be operated at all times when emissions may be vented to them.
- (4) Flares shall be designed for and operated with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. Test Method 22 in appendix A of part 60 of this chapter shall be used to determine the compliance of flares with the visible emission provisions of this part. The observation period is 2 hours and shall be used according to Method 22.
- (5) Flares shall be operated with a flame present at all times. The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.
- (6) An owner/operator has the choice of adhering to the heat content specifications in paragraph (b)(6)(ii) of this section, and the maximum tip velocity specifications in paragraph (b)(7) or (b)(8) of this section, or adhering to the requirements in paragraph (b)(6)(i) of this section.

(i)

- (A) Flares shall be used that have a diameter of 3 inches or greater, are nonassisted, have a hydrogen content of 8.0 percent (by volume) or greater, and are designed for and operated with an exit velocity less than 37.2 m/sec (122 ft/sec) and less than the velocity $V_{\max}$, as determined by the following equation:

$$V_{\max} = (X_{H_2} - K_1) * K_2$$

Where:

$V_{\max}$ = Maximum permitted velocity, m/sec.

K_1 = Constant, 6.0 volume-percent hydrogen.

K_2 = Constant, 3.9(m/sec)/volume-percent hydrogen.

X_{H_2} = The volume-percent of hydrogen, on a wet basis, as calculated by using the American Society for Testing and Materials (ASTM) Method D1946-77. (Incorporated by reference as specified in § 63.14).

- (B) The actual exit velocity of a flare shall be determined by the method specified in paragraph (b)(7)(i) of this section.
- (ii) Flares shall be used only with the net heating value of the gas being combusted at 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam-assisted or air-assisted; or with the net heating value of the gas being combusted at 7.45 MJ/scm (200 Btu/scf) or greater if the flares is non-assisted. The net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$H_T = K \sum_{i=1}^n C_i H_i$$

Where:

H_T = Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 °C.

K = Constant =

$$1.740 \times 10^{-7} \left(\frac{1}{\text{ppmv}} \right) \left(\frac{\text{g-mole}}{\text{scm}} \right) \left(\frac{\text{MJ}}{\text{kcal}} \right)$$

where the standard temperature for (g-mole/scm) is 20 °C.

C_i = Concentration of sample component i in ppmv on a wet basis, as measured for organics by Test Method 18 and measured for hydrogen and carbon monoxide by American Society for Testing and Materials (ASTM) D1946-77 or 90 (Reapproved 1994) (incorporated by reference as specified in § 63.14).

H_i = Net heat of combustion of sample component i , kcal/g-mole at 25 °C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382-76 or 88 or D4809-95 (incorporated by reference as specified in § 63.14) if published values are not available or cannot be calculated.

n = Number of sample components.

(7)

- (i) Steam-assisted and nonassisted flares shall be designed for and operated with an exit velocity less than 18.3 m/sec (60 ft/sec), except as provided in paragraphs (b)(7)(ii) and (b)(7)(iii) of this section. The actual exit velocity of a flare shall be determined by dividing by the volumetric flow rate of gas being combusted (in units of emission standard temperature and pressure), as determined by Test Method 2, 2A, 2C, or 2D in appendix A to 40 CFR part 60 of this chapter, as appropriate, by the unobstructed (free) cross-sectional area of the flare tip.
- (ii) Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the method specified in paragraph (b)(7)(i) of this section, equal to or greater than 18.3 m/sec (60 ft/sec) but less than 122 m/sec (400 ft/sec), are allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf).
- (iii) Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the method specified in paragraph (b)(7)(i) of this section, less than the velocity $V_{\max}$, as determined by the method specified in this paragraph, but less than 122 m/sec (400 ft/sec) are allowed. The maximum permitted velocity, $V_{\max}$, for flares complying with this paragraph shall be determined by the following equation:

$$\text{Log}_{10}(V_{\max}) = (H_T + 28.8)/31.7$$

Where:

$V_{\max}$ = Maximum permitted velocity, m/sec.

28.8 = Constant.

31.7 = Constant.

H_T = The net heating value as determined in paragraph (b)(6) of this section.

- (8) Air-assisted flares shall be designed and operated with an exit velocity less than the velocity $V_{\max}$. The maximum permitted velocity, $V_{\max}$, for air-assisted flares shall be determined by the following equation:

$$V_{\max} = 8.71 + 0.708(H_T)$$

Where:

$V_{\max}$ = Maximum permitted velocity, m/sec.

8.71 = Constant.

0.708 = Constant.

H_T = The net heating value as determined in paragraph (b)(6)(ii) of this section.

- (c) **Alternative work practice for monitoring equipment for leaks.** Paragraphs (c), (d), and (e) of this section apply to all equipment for which the applicable subpart requires monitoring with a 40 CFR part 60, appendix A-7, Method 21 monitor, except for closed vent systems, equipment designated as leakless, and equipment identified in the applicable subpart as having no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background. An owner or operator may use an optical gas imaging instrument instead of a 40 CFR part 60, appendix A-7, Method 21 monitor. Requirements in the existing subparts that are specific to the Method 21 instrument do not apply under this section. All other requirements in the applicable subpart that are not addressed in paragraphs (c), (d), and (e) of this section continue to apply. For example, equipment specification requirements, and non-Method 21 instrument recordkeeping and reporting requirements in the applicable subpart continue to apply. The terms defined in paragraphs (c)(1) through (5) of this section have meanings that are specific to the alternative work practice standard in paragraphs (c), (d), and (e) of this section.

- (1) **Applicable subpart** means the subpart in 40 CFR parts 60, 61, 63, and 65 that requires monitoring of equipment with a 40 CFR part 60, appendix A-7, Method 21 monitor.
- (2) **Equipment** means pumps, valves, pressure relief valves, compressors, open-ended lines, flanges, connectors, and other equipment covered by the applicable subpart that require monitoring with a 40 CFR part 60, appendix A-7, Method 21 monitor.
- (3) **Imaging** means making visible emissions that may otherwise be invisible to the naked eye.
- (4) **Optical gas imaging instrument** means an instrument that makes visible emissions that may otherwise be invisible to the naked eye.

- (5) *Repair* means that equipment is adjusted, or otherwise altered, in order to eliminate a leak.
- (6) *Leak* means:
 - (i) Any emissions imaged by the optical gas instrument;
 - (ii) Indications of liquids dripping;
 - (iii) Indications by a sensor that a seal or barrier fluid system has failed; or
 - (iv) Screening results using a 40 CFR part 60, appendix A-7, Method 21 monitor that exceed the leak definition in the applicable subpart to which the equipment is subject.
- (d) The alternative work practice standard for monitoring equipment for leaks is available to all subparts in 40 CFR parts 60, 61, 63, and 65 that require monitoring of equipment with a 40 CFR part 60, appendix A-7, Method 21 monitor.
 - (1) An owner or operator of an affected source subject to 40 CFR parts 60, 61, 63, or 65 can choose to comply with the alternative work practice requirements in paragraph (e) of this section instead of using the 40 CFR part 60, appendix A-7, Method 21 monitor to identify leaking equipment. The owner or operator must document the equipment, process units, and facilities for which the alternative work practice will be used to identify leaks.
 - (2) Any leak detected when following the leak survey procedure in paragraph (e)(3) of this section must be identified for repair as required in the applicable subpart.
 - (3) If the alternative work practice is used to identify leaks, re-screening after an attempted repair of leaking equipment must be conducted using either the alternative work practice or the 40 CFR part 60, Appendix A-7, Method 21 monitor at the leak definition required in the applicable subparts to which the equipment is subject.
 - (4) The schedule for repair is as required in the applicable subpart.
 - (5) When this alternative work practice is used for detecting leaking equipment, choose one of the monitoring frequencies listed in Table 1 to subpart A of this part in lieu of the monitoring frequency specified for regulated equipment in the applicable subpart. Reduced monitoring frequencies for good performance are not applicable when using the alternative work practice.
 - (6) When this alternative work practice is used for detecting leaking equipment, the following are not applicable for the equipment being monitored:
 - (i) Skip period leak detection and repair;
 - (ii) Quality improvement plans; or
 - (iii) Complying with standards for allowable percentage of valves and pumps to leak.
 - (7) When the alternative work practice is used to detect leaking equipment, the regulated equipment in paragraph (d)(1)(i) of this section must also be monitored annually using a 40 CFR part 60, Appendix A-7, Method 21 monitor at the leak definition required in the applicable subpart. The owner or operator may choose the specific monitoring period (for example, first quarter) to conduct the annual monitoring. Subsequent monitoring must be conducted every 12 months from the initial period. Owners or operators must keep records of the annual Method 21 screening results, as specified in paragraph (i)(4)(vii) of this section.

- (e) An owner or operator of an affected source who chooses to use the alternative work practice must comply with the requirements of paragraphs (e)(1) through (e)(5) of this section.
- (1) **Instrument specifications.** The optical gas imaging instrument must comply with the requirements specified in paragraphs (e)(1)(i) and (e)(1)(ii) of this section.
- (i) Provide the operator with an image of the potential leak points for each piece of equipment at both the detection sensitivity level and within the distance used in the daily instrument check described in paragraph (e)(2) of this section. The detection sensitivity level depends upon the frequency at which leak monitoring is to be performed.
- (ii) Provide a date and time stamp for video records of every monitoring event.
- (2) **Daily instrument check.** On a daily basis, and prior to beginning any leak monitoring work, test the optical gas imaging instrument at the mass flow rate determined in paragraph (e)(2)(i) of this section in accordance with the procedure specified in paragraphs (e)(2)(ii) through (e)(2)(iv) of this section for each camera configuration used during monitoring (for example, different lenses used), unless an alternative method to demonstrate daily instrument checks has been approved in accordance with paragraph (e)(2)(v) of this section.
- (i) Calculate the mass flow rate to be used in the daily instrument check by following the procedures in paragraphs (e)(2)(i)(A) and (e)(2)(i)(B) of this section.
- (A) For a specified population of equipment to be imaged by the instrument, determine the piece of equipment in contact with the lowest mass fraction of chemicals that are detectable, within the distance to be used in paragraph (e)(2)(iv)(B) of this section, at or below the standard detection sensitivity level.
- (B) Multiply the standard detection sensitivity level, corresponding to the selected monitoring frequency in Table 1 of subpart A of this part, by the mass fraction of detectable chemicals from the stream identified in paragraph (e)(2)(i)(A) of this section to determine the mass flow rate to be used in the daily instrument check, using the following equation.

$$E_{dic} = (E_{sds}) \sum_{i=1}^k x_i$$

Where:

E_{dic} = Mass flow rate for the daily instrument check, grams per hour

x_i = Mass fraction of detectable chemical(s) i seen by the optical gas imaging instrument, within the distance to be used in paragraph (e)(2)(iv)(B) of this section, at or below the standard detection sensitivity level, E_{sds} .

E_{sds} = Standard detection sensitivity level from Table 1 to subpart A, grams per hour

k = Total number of detectable chemicals emitted from the leaking equipment and seen by the optical gas imaging instrument.

- (ii) Start the optical gas imaging instrument according to the manufacturer's instructions, ensuring that all appropriate settings conform to the manufacturer's instructions.

- (iii) Use any gas chosen by the user that can be viewed by the optical gas imaging instrument and that has a purity of no less than 98 percent.
 - (iv) Establish a mass flow rate by using the following procedures:
 - (A) Provide a source of gas where it will be in the field of view of the optical gas imaging instrument.
 - (B) Set up the optical gas imaging instrument at a recorded distance from the outlet or leak orifice of the flow meter that will not be exceeded in the actual performance of the leak survey. Do not exceed the operating parameters of the flow meter.
 - (C) Open the valve on the flow meter to set a flow rate that will create a mass emission rate equal to the mass rate calculated in paragraph (e)(2)(i) of this section while observing the gas flow through the optical gas imaging instrument viewfinder. When an image of the gas emission is seen through the viewfinder at the required emission rate, make a record of the reading on the flow meter.
 - (v) Repeat the procedures specified in paragraphs (e)(2)(ii) through (e)(2)(iv) of this section for each configuration of the optical gas imaging instrument used during the leak survey.
 - (vi) To use an alternative method to demonstrate daily instrument checks, apply to the Administrator for approval of the alternative under § 63.177 or § 63.178, whichever is applicable.
- (3) **Leak survey procedure.** Operate the optical gas imaging instrument to image every regulated piece of equipment selected for this work practice in accordance with the instrument manufacturer's operating parameters. All emissions imaged by the optical gas imaging instrument are considered to be leaks and are subject to repair. All emissions visible to the naked eye are also considered to be leaks and are subject to repair.
- (4) **Recordkeeping.** Keep the records described in paragraphs (e)(4)(i) through (e)(4)(vii) of this section:
- (i) The equipment, processes, and facilities for which the owner or operator chooses to use the alternative work practice.
 - (ii) The detection sensitivity level selected from Table 1 to subpart A of this part for the optical gas imaging instrument.
 - (iii) The analysis to determine the piece of equipment in contact with the lowest mass fraction of chemicals that are detectable, as specified in paragraph (e)(2)(i)(A) of this section.
 - (iv) The technical basis for the mass fraction of detectable chemicals used in the equation in paragraph (e)(2)(i)(B) of this section.
 - (v) The daily instrument check. Record the distance, per paragraph (e)(2)(iv)(B) of this section, and the flow meter reading, per paragraph (e)(2)(iv)(C) of this section, at which the leak was imaged. Keep a video record of the daily instrument check for each configuration of the optical gas imaging instrument used during the leak survey (for example, the daily instrument check must be conducted for each lens used). The video record must include a time and date stamp for each daily instrument check. The video record must be kept for 5 years.

(vi) **Recordkeeping requirements in the applicable subpart.** A video record must be used to document the leak survey results. The video record must include a time and date stamp for each monitoring event. A video record can be used to meet the recordkeeping requirements of the applicable subparts if each piece of regulated equipment selected for this work practice can be identified in the video record. The video record must be kept for 5 years.

(vii) The results of the annual Method 21 screening required in paragraph (h)(7) of this section. Records must be kept for all regulated equipment specified in paragraph (h)(1) of this section. Records must identify the equipment screened, the screening value measured by Method 21, the time and date of the screening, and calibration information required in the existing applicable subparts.

(5) **Reporting.** Submit the reports required in the applicable subpart. Submit the records of the annual Method 21 screening required in paragraph (h)(7) of this section to the Administrator via e-mail to CCG-AWP@EPA.GOV.

[59 FR 12430, Mar. 16, 1994, as amended at 63 FR 24444, May 4, 1998; 65 FR 62215, Oct. 17, 2000; 67 FR 16605, Apr. 5, 2002; 73 FR 78211, Dec. 22, 2008]

§ 63.12 State authority and delegations.

(a) The provisions of this part shall not be construed in any manner to preclude any State or political subdivision thereof from—

- (1) Adopting and enforcing any standard, limitation, prohibition, or other regulation applicable to an affected source subject to the requirements of this part, provided that such standard, limitation, prohibition, or regulation is not less stringent than any requirement applicable to such source established under this part;
- (2) Requiring the owner or operator of an affected source to obtain permits, licenses, or approvals prior to initiating construction, reconstruction, modification, or operation of such source; or
- (3) Requiring emission reductions in excess of those specified in subpart D of this part as a condition for granting the extension of compliance authorized by section 112(i)(5) of the Act.

(b)

- (1) Section 112(l) of the Act directs the Administrator to delegate to each State, when appropriate, the authority to implement and enforce standards and other requirements pursuant to section 112 for stationary sources located in that State. Because of the unique nature of radioactive material, delegation of authority to implement and enforce standards that control radionuclides may require separate approval.
- (2) Subpart E of this part establishes procedures consistent with section 112(l) for the approval of State rules or programs to implement and enforce applicable Federal rules promulgated under the authority of section 112. Subpart E also establishes procedures for the review and withdrawal of section 112 implementation and enforcement authorities granted through a section 112(l) approval.

(c) All information required to be submitted to the EPA under this part also shall be submitted to the appropriate state agency of any state to which authority has been delegated under section 112(l) of the Act, provided that each specific delegation may exempt sources from a certain federal or state reporting requirement. Any information required to be submitted electronically by this part via the EPA's CEDRI may,

at the discretion of the delegated authority, satisfy the requirements of this paragraph. The Administrator may permit all or some of the information to be submitted to the appropriate state agency only, instead of to the EPA and the state agency with the exception of federal electronic reporting requirements under this part. Sources may not be exempted from federal electronic reporting requirements.

[59 FR 12430, Mar. 16, 1994, as amended at 85 FR 73887, Nov. 19, 2020]

§ 63.13 Addresses of State air pollution control agencies and EPA Regional Offices.

- (a) All requests, reports, applications, submittals, and other communications to the Administrator pursuant to this part shall be submitted to the appropriate Regional Office of the U.S. Environmental Protection Agency indicated in the following table. If a request, report, application, submittal, or other communication is required by this part to be submitted electronically via the EPA's CEDRI then such submission satisfies the requirements of this paragraph (a).

TABLE 1 TO PARAGRAPH (a)

Region	Address	State
I	Director, Enforcement and Compliance Assurance Division, U.S. EPA Region I, 5 Post Office Square—Suite 100 (04-2), Boston, MA 02109-3912, Attn: Air Compliance Clerk	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont.
II	Director, Air and Waste Management Division, 26 Federal Plaza, New York, NY 10278	New Jersey, New York, Puerto Rico, Virgin Islands.
III	Director, Air Protection Division, 1650 Arch Street, Philadelphia, PA 19103	Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia.
IV	Director, Air and Radiation Division, 61 Forsyth Street, SW, Atlanta, Georgia 30303-8960	Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee.
V	Director, Air and Radiation Division, 77 West Jackson Blvd., Chicago, IL 60604-3507	Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin.
VI	Director, Enforcement	Arkansas, Louisiana, New Mexico, Oklahoma, Texas.

Region	Address	State
	and Compliance Assurance Division; U.S. Environmental Protection Agency, 1201 Elm Street, Suite 500, Mail Code 6ECD, Dallas, Texas 75270-2102	
VII	Director, Air and Waste Management Division, 11201 Renner Boulevard, Lenexa, Kansas 66219	Iowa, Kansas, Missouri, Nebraska.
VIII	Director, Air and Toxics Technical Enforcement Program, Office of Enforcement, Compliance and Environmental Justice, Mail Code 8ENF-AT, 1595 Wynkoop Street, Denver, CO 80202-1129	Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming.
IX	Director, Air Division, 75 Hawthorne Street, San Francisco, CA 94105	Arizona, California, Hawaii, Nevada; the territories of American Samoa and Guam; the Commonwealth of the Northern Mariana Islands; the territories of Baker Island, Howland Island, Jarvis Island, Johnston Atoll, Kingman Reef, Midway Atoll, Palmyra Atoll, and Wake Islands; and certain U.S. Government activities in the freely associated states of the Republic of the Marshall Islands, the Federated States of Micronesia, and the Republic of Palau.
X	Director, Office of Air Quality, 1200 Sixth Avenue (OAQ-107), Seattle, WA 98101	Alaska, Idaho, Oregon, Washington.

- (b) All information required to be submitted to the Administrator under this part also shall be submitted to the appropriate State agency of any State to which authority has been delegated under section 112(l) of the Act. The owner or operator of an affected source may contact the appropriate EPA Regional Office for the mailing addresses for those States whose delegation requests have been approved.
- (c) If any State requires a submittal that contains all the information required in an application, notification, request, report, statement, or other communication required in this part, an owner or operator may send the appropriate Regional Office of the EPA a copy of that submittal to satisfy the requirements of this part for that communication.

[59 FR 12430, Mar. 16, 1994, as amended at 63 FR 66061, Dec. 1, 1998; 67 FR 4184, Jan. 29, 2002; 68 FR 32601, May 30, 2003; 68 FR 35792, June 17, 2003; 73 FR 24871, May 6, 2008; 75 FR 69532, Nov. 12, 2010; 76 FR 49673, Aug. 11, 2011; 78 FR 37977, June 25, 2013; 84 FR 34069, July 17, 2019; 84 FR 44230, Aug. 23, 2019; 85 FR 73887, Nov. 19, 2020; 89 FR 86748, Oct. 31, 2024]

§ 63.14 Incorporations by reference.

(a)

- (1) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the U.S. Environmental Protection Agency (EPA) must publish a document in the FEDERAL REGISTER and the material must be available to the public. All approved incorporation by reference (IBR) material is available for inspection at the EPA and at the National Archives and Records Administration (NARA). Contact the EPA at: EPA Docket Center, Public Reading Room, EPA WJC West, Room 3334, 1301 Constitution Ave. NW, Washington, DC; phone: (202) 566-1744. For information on the availability of this material at NARA, visit www.archives.gov/federal-register/cfr/ibr-locations or email fr.inspection@nara.gov.
- (2) The IBR material may be obtained from the sources in the following paragraphs of this section or from one or more private resellers listed in this paragraph (a)(2). For material that is no longer commercially available, contact: the EPA (see paragraph (a)(1) of this section).
 - (i) Accuris Standards Store, 321 Inverness Drive, South Englewood, CO, 80112; phone: (800) 332-6077; website: <https://store.accuristech.com>.
 - (ii) American National Standards Institute (ANSI), 25 West 43rd Street, Fourth Floor, New York, NY 10036-7417; phone: (212) 642-4980; email: info@ansi.org; website: www.ansi.org.
 - (iii) GlobalSpec, 257 Fuller Road, Suite NFE 1100, Albany, NY 12203-3621; phone: (800) 261-2052; website: <https://standards.globalspec.com>.
 - (iv) Nimonik Document Center, 401 Roland Way, Suite 224, Oakland, CA, 94624; phone (650) 591-7600; email: info@document-center.com; website: www.document-center.com.
 - (v) Techstreet, phone: (855) 999-9870; email: store@techstreet.com; website: www.techstreet.com.

- (b) American Conference of Governmental Industrial Hygienists (ACGIH), Customer Service Department, 1330 Kemper Meadow Drive, Cincinnati, Ohio 45240, telephone number (513) 742-2020.

- (1) Industrial Ventilation: A Manual of Recommended Practice, 22nd Edition, 1995, Chapter 3, "Local Exhaust Hoods" and Chapter 5, "Exhaust System Design Procedure." IBR approved for §§ 63.843(b) and 63.844(b).
- (2) Industrial Ventilation: A Manual of Recommended Practice, 23rd Edition, 1998, Chapter 3, "Local Exhaust Hoods" and Chapter 5, "Exhaust System Design Procedure." IBR approved for §§ 63.1503, 63.1506(c), 63.1512(e), Table 2 to subpart RRR, Table 3 to subpart RRR, and appendix A to subpart RRR, and § 63.2984(e).
- (3) Industrial Ventilation: A Manual of Recommended Practice for Design, 27th Edition, 2010. IBR approved for §§ 63.1503, 63.1506(c), 63.1512(e), Table 2 to subpart RRR, Table 3 to subpart RRR, and appendix A to subpart RRR, and § 63.2984(e).

- (c) American Petroleum Institute (API), 200 Massachusetts Ave. NW, Suite 1100, Washington, DC 20001; phone: (202) 682-8000; website: www.api.org.

- (1) API Publication 2517, Evaporative Loss from External Floating-Roof Tanks, Third Edition, February 1989; IBR approved for §§ 63.111; 63.1402; 63.2406; 63.7944.
- (2) API Publication 2518, Evaporative Loss from Fixed-roof Tanks, Second Edition, October 1991; IBR approved for § 63.150(g).
- (3) API Manual of Petroleum Measurement Specifications (MPMS) Chapter 19.2 (API MPMS 19.2), Evaporative Loss From Floating-Roof Tanks, First Edition, April 1997; IBR approved for §§ 63.1251; 63.12005.
- (4) API Manual of Petroleum Measurement Specifications (MPMS) Chapter 19.2 (API MPMS 19.2), Evaporative Loss From Floating-Roof Tanks, Fourth Edition, August 2020; IBR approved for § 63.101(b).
- (d) American Public Health Association, 1015 18th Street NW, Washington, DC 20036; phone (844) 232-3707; email: standardmethods@subscriptionoffice.com; website: www.standardmethods.org.
 - (1) Standard Method 5210, Biochemical Oxygen Demand (BOD), revised December 10, 2019; IBR approved for § 63.457(c)
 - (2) [Reserved]
- (e) American Society of Heating, Refrigerating, and Air-Conditioning Engineers at 1791 Tullie Circle, NE., Atlanta, GA 30329 orders@ashrae.org.
 - (1) American Society of Heating, Refrigerating, and Air-Conditioning Engineers Method 52.1, *Gravimetric and Dust-Spot Procedures for Testing Air-Cleaning Devices Used in General Ventilation for Removing Particulate Matter* June 4, 1992; IBR approved for § 63.11516(d).
 - (2) ANSI/ASHRAE Standard 52.2-2017, *Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size*, copyright 2017; IBR approved for § 63.11173(e).
- (f) American Society of Mechanical Engineers (ASME), Two Park Avenue, New York, NY 10016-5990; phone: (800) 843-2763; email: CustomerCare@asme.org; website: www.asme.org.
 - (1) ANSI/ASME PTC 19.10-1981, *Flue and Exhaust Gas Analyses* [Part 10, Instruments and Apparatus], issued August 31, 1981; §§ 63.116(c) and (h); 63.128(a); 63.145(i); 63.309(k); 63.365(b); 63.457(k); 63.490(g); 63.772(e) and (h); 63.865(b); 63.997(e); 63.1282(d) and (g); 63.1450(a), (b), (d), (e), (g); 63.1625(b); table 5 to subpart EEEE; §§ 63.3166(a); 63.3360(e); 63.3545(a); 63.3555(a); 63.4166(a); 63.4362(a); 63.4766(a); 63.4965(a); 63.5160(d); table 4 to subpart UUUU; tables 5, 16, and 17 to subpart XXXX; table 3 to subpart YYYY; table 4 to subpart AAAAA; § 63.7322(b); table 5 to subpart DDDDD; §§ 63.7822(b); 63.7824(e); 63.7825(b); 63.8000(d); table 4 to subpart JJJJJ; table 4 to subpart KKKKK; §§ 63.9307(c); 63.9323(a); 63.9621(b) and (c); table 4 to subpart SSSSS; tables 4 and 5 of subpart UUUUU; table 1 to subpart ZZZZZ; §§ 63.11148(e); 63.11155(e); 63.11162(f); 63.11163(g); table 4 to subpart JJJJJJ; §§ 63.11410(j); 63.11551(a); 63.11646(a); 63.11945.
 - (2) [Reserved]
- (g) The Association of Florida Phosphate Chemists, P.O. Box 1645, Bartow, Florida 33830.
 - (1) Book of Methods Used and Adopted By The Association of Florida Phosphate Chemists, Seventh Edition 1991:
 - (i) Section IX, Methods of Analysis for Phosphate Rock, No. 1 Preparation of Sample, IBR approved for § 63.606(f), § 63.626(f).

- (ii) Section IX, Methods of Analysis for Phosphate Rock, No. 3 Phosphorus-P₂O₅ or Ca₃(PO₄)₂, Method A—Volumetric Method, IBR approved for § 63.606(f), § 63.626(f).
- (iii) Section IX, Methods of Analysis for Phosphate Rock, No. 3 Phosphorus-P₂O₅ or Ca₃(PO₄)₂, Method B—Gravimetric Quimociac Method, IBR approved for § 63.606(f), § 63.626(f).
- (iv) Section IX, Methods of Analysis For Phosphate Rock, No. 3 Phosphorus-P₂O₅ or Ca₃(PO₄)₂, Method C—Spectrophotometric Method, IBR approved for § 63.606(f), § 63.626(f).
- (v) Section XI, Methods of Analysis for Phosphoric Acid, Superphosphate, Triple Superphosphate, and Ammonium Phosphates, No. 3 Total Phosphorus-P₂O₅, Method A—Volumetric Method, IBR approved for § 63.606(f), § 63.626(f), and (g).
- (vi) Section XI, Methods of Analysis for Phosphoric Acid, Superphosphate, Triple Superphosphate, and Ammonium Phosphates, No. 3 Total Phosphorus-P₂O₅, Method B—Gravimetric Quimociac Method, IBR approved for § 63.606(f), § 63.626(f), and (g).
- (vii) Section XI, Methods of Analysis for Phosphoric Acid, Superphosphate, Triple Superphosphate, and Ammonium Phosphates, No. 3 Total Phosphorus-P₂O₅, Method C—Spectrophotometric Method, IBR approved for § 63.606(f), § 63.626(f), and (g).
- (2) [Reserved]
- (h) Association of Official Analytical Chemists (AOAC) International, Customer Services, Suite 400, 2200 Wilson Boulevard, Arlington, Virginia 22201-3301, Telephone (703) 522-3032, Fax (703) 522-5468.
 - (1) AOAC Official Method 929.01 Sampling of Solid Fertilizers, Sixteenth edition, 1995, IBR approved for § 63.626(g).
 - (2) AOAC Official Method 929.02 Preparation of Fertilizer Sample, Sixteenth edition, 1995, IBR approved for § 63.626(g).
 - (3) AOAC Official Method 957.02 Phosphorus (Total) in Fertilizers, Preparation of Sample Solution, Sixteenth edition, 1995, IBR approved for § 63.626(g).
 - (4) AOAC Official Method 958.01 Phosphorus (Total) in Fertilizers, Spectrophotometric Molybdovanadophosphate Method, Sixteenth edition, 1995, IBR approved for § 63.626(g).
 - (5) AOAC Official Method 962.02 Phosphorus (Total) in Fertilizers, Gravimetric Quinolinium Molybdophosphate Method, Sixteenth edition, 1995, IBR approved for § 63.626(g).
 - (6) AOAC Official Method 969.02 Phosphorus (Total) in Fertilizers, Alkalimetric Quinolinium Molybdophosphate Method, Sixteenth edition, 1995, IBR approved for § 63.626(g).
 - (7) AOAC Official Method 978.01 Phosphorus (Total) in Fertilizers, Automated Method, Sixteenth edition, 1995, IBR approved for § 63.626(g).
- (i) ASTM International, 100 Barr Harbor Drive, P.O. Box CB700, West Conshohocken, Pennsylvania 19428-2959; phone: (800) 262-1373; website: www.astm.org.
 - (1) ASTM D95-05 (Reapproved 2010), Standard Test Method for Water in Petroleum Products and Bituminous Materials by Distillation, approved May 1, 2010, IBR approved for § 63.10005(i) and table 6 to subpart DDDDD.
 - (2) ASTM D240-09 Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter, approved July 1, 2009, IBR approved for table 6 to subpart DDDDD.

- (3) ASTM Method D388-05, Standard Classification of Coals by Rank, approved September 15, 2005, IBR approved for §§ 63.7575, 63.10042, and 63.11237.
- (4) ASTM Method D396-10, Standard Specification for Fuel Oils, including Appendix X1, approved October 1, 2010, IBR approved for § 63.10042.
- (5) ASTM D396-10, Standard Specification for Fuel Oils, approved October 1, 2010, IBR approved for §§ 63.7575 and 63.11237.
- (6) ASTM D523-89, Standard Test Method for Specular Gloss, IBR approved for § 63.782.
- (7) ASTM D975-11b, Standard Specification for Diesel Fuel Oils, approved December 1, 2011, IBR approved for § 63.7575.
- (8) ASTM D1193-77, Standard Specification for Reagent Water, IBR approved for appendix A to part 63: Method 306, Sections 7.1.1 and 7.4.2.
- (9) ASTM D1193-91, Standard Specification for Reagent Water, IBR approved for appendix A to part 63: Method 306, Sections 7.1.1 and 7.4.2.
- (10) ASTM D1331-89, Standard Test Methods for Surface and Interfacial Tension of Solutions of Surface Active Agents, IBR approved for appendix A to part 63: Method 306B, Sections 6.2, 11.1, and 12.2.2.
- (11) ASTM D1475-90, Standard Test Method for Density of Paint, Varnish Lacquer, and Related Products, IBR approved for appendix A to subpart II.
- (12) ASTM D1475-13, Standard Test Method for Density of Liquid Coatings, Inks, and Related Products, approved November 1, 2013, IBR approved for §§ 63.3151(b), 63.3941(b) and (c), 63.3951(c), 63.4141(b) and (c), 63.4551(c), 63.4741(b) and (c), 63.4751(c), and 63.4941(b) and (c).
- (13) ASTM Method D1835-05, Standard Specification for Liquefied Petroleum (LP) Gases, approved April 1, 2005, IBR approved for §§ 63.7575 and 63.11237.
- (14) ASTM D1945-03 (Reapproved 2010), Standard Test Method for Analysis of Natural Gas by Gas Chromatography, Approved January 1, 2010, IBR approved for §§ 63.670(j), 63.772(h), and 63.1282(g).
- (15) ASTM D1945-14, Standard Test Method for Analysis of Natural Gas by Gas Chromatography, Approved November 1, 2014, IBR approved for § 63.670(j).
- (16) ASTM D1946-77, Standard Method for Analysis of Reformulated Gas by Gas Chromatography, IBR approved for § 63.11(b).
- (17) ASTM D1946-90 (Reapproved 1994), Standard Method for Analysis of Reformulated Gas by Gas Chromatography, 1994, IBR approved for §§ 63.11(b), 63.987(b), and 63.1412.
- (18) ASTM D1963-85 (Reapproved 1996), Standard Test Method for Specific Gravity of Drying Oils, Varnishes, Resins, and Related Materials at 25/25 °C, approved November 29, 1985, IBR approved for § 63.3360(c).
- (19) ASTM D2013/D2013M-09, Standard Practice for Preparing Coal Samples for Analysis, (Approved November 1, 2009), IBR approved for table 6 to subpart DDDDD and table 5 to subpart JJJJJJ.
- (20) ASTM D2099-00, Standard Test Method for Dynamic Water Resistance of Shoe Upper Leather by the Maeser Water Penetration Tester, IBR approved for § 63.5350.

- (21) ASTM D2111-10 (Reapproved 2015), Standard Test Methods for Specific Gravity and Density of Halogenated Organic Solvents and Their Admixtures, approved June 1, 2015, IBR approved for §§ 63.3360(c), 63.3951(c), 63.4141(b) and (c), 63.4551(c), and 63.4741(a).
- (22) ASTM D2216-05, Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass, IBR approved for the definition of "Free organic liquids" in § 63.10692.
- (23) ASTM D2234/D2234M-10, Standard Practice for Collection of a Gross Sample of Coal, approved January 1, 2010, IBR approved for table 6 to subpart DDDDD and table 5 to subpart JJJJJJ.
- (24) ASTM D2369-93, Standard Test Method for Volatile Content of Coatings, IBR approved for appendix A to subpart II.
- (25) ASTM D2369-95, Standard Test Method for Volatile Content of Coatings, IBR approved for appendix A to subpart II.
- (26) ASTM D2369-10 (Reapproved 2015)e1, Standard Test Method for Volatile Content of Coatings, approved June 1, 2015, IBR approved for §§ 63.3151(a), 63.3360(c), 63.3961(j), 63.4141(a) and (b), 63.4161(h), 63.4321(e), 63.4341(e), 63.4351(d), 63.4541(a), and 63.4561(j), appendix A to subpart PPPP, and §§ 63.4741(a), 63.4941(a) and (b), 63.4961(j), and 63.8055(b).
- (27) ASTM D2382-76, Heat of Combustion of Hydrocarbon Fuels by Bomb Calorimeter (High-Precision Method), IBR approved for § 63.11(b).
- (28) ASTM D2382-88, Heat of Combustion of Hydrocarbon Fuels by Bomb Calorimeter (High-Precision Method), IBR approved for § 63.11(b).
- (29) ASTM D2697-86 (Reapproved 1998), Standard Test Method for Volume Nonvolatile Matter in Clear or Pigmented Coatings, IBR approved for §§ 63.3521(b), and 63.5160(c).
- (30) ASTM D2697-03 (Reapproved 2014), Standard Test Method for Volume Nonvolatile Matter in Clear or Pigmented Coatings, approved July 1, 2014, IBR approved for §§ 63.3161(f), 63.3360(c), 63.3941(b), 63.4141(b), 63.4741(a) and (b), 63.4941(b), and 63.8055(b).
- (31) ASTM D2879-83, Standard Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope, Approved November 28, 1983, IBR approved for §§ 63.111, 63.1402, 63.2406, 63.7944, and 63.12005.
- (32) ASTM D2879-96, Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope, (Approved 1996), IBR approved for §§ 63.111, and 63.12005.
- (33) ASTM D2879-23, Standard Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope, approved December 1, 2023; IBR approved for § 63.101(b).
- (34) ASTM D2908-74, Standard Practice for Measuring Volatile Organic Matter in Water by Aqueous-Injection Gas Chromatography, Approved June 27, 1974, IBR approved for § 63.1329(c).
- (35) ASTM D2908-91, Standard Practice for Measuring Volatile Organic Matter in Water by Aqueous-Injection Gas Chromatography, Approved December 15, 1991, IBR approved for § 63.1329(c).
- (36) ASTM D2908-91(Reapproved 2001), Standard Practice for Measuring Volatile Organic Matter in Water by Aqueous-Injection Gas Chromatography, Approved December 15, 1991, IBR approved for § 63.1329(c).

- (37) ASTM D2908-91 (Reapproved 2005), Standard Practice for Measuring Volatile Organic Matter in Water by Aqueous-Injection Gas Chromatography, Approved December 1, 2005, IBR approved for § 63.1329(c).
- (38) ASTM D2908-91 (Reapproved 2011), Standard Practice for Measuring Volatile Organic Matter in Water by Aqueous-Injection Gas Chromatography, Approved May 1, 2011, IBR approved for § 63.1329(c).
- (39) ASTM D2986-95A, "Standard Practice for Evaluation of Air Assay Media by the Monodisperse DOP (Diethyl Phthalate) Smoke Test," approved September 10, 1995, IBR approved for section 7.1.1 of Method 315 in appendix A to this part.
- (40) ASTM D3173-03 (Reapproved 2008), Standard Test Method for Moisture in the Analysis Sample of Coal and Coke, (Approved February 1, 2008), IBR approved for table 6 to subpart DDDDD and table 5 to subpart JJJJJJ.
- (41) ASTM D3257-93, Standard Test Methods for Aromatics in Mineral Spirits by Gas Chromatography, IBR approved for § 63.786(b).
- (42) ASTM D3370-76, Standard Practices for Sampling Water, Approved August 27, 1976, IBR approved for § 63.1329(c).
- (43) ASTM D3370-95a, Standard Practices for Sampling Water from Closed Conduits, Approved September 10, 1995, IBR approved for § 63.1329(c).
- (44) ASTM D3370-07, Standard Practices for Sampling Water from Closed Conduits, Approved December 1, 2007, IBR approved for § 63.1329(c).
- (45) ASTM D3370-08, Standard Practices for Sampling Water from Closed Conduits, Approved October 1, 2008, IBR approved for § 63.1329(c).
- (46) ASTM D3370-10, Standard Practices for Sampling Water from Closed Conduits, Approved December 1, 2010, IBR approved for § 63.1329(c).
- (47) ASTM D3588-98 (Reapproved 2003), Standard Practice for Calculating Heat Value, Compressibility Factor, and Relative Density of Gaseous Fuels, (Approved May 10, 2003), IBR approved for §§ 63.772(h) and 63.1282(g).
- (48) ASTM D3695-88, Standard Test Method for Volatile Alcohols in Water by Direct Aqueous-Injection Gas Chromatography, IBR approved for § 63.365(e).
- (49) ASTM D3792-91, Standard Method for Water Content of Water-Reducible Paints by Direct Injection into a Gas Chromatograph, IBR approved for appendix A to subpart II.
- (50) ASTM D3912-80, Standard Test Method for Chemical Resistance of Coatings Used in Light-Water Nuclear Power Plants, IBR approved for § 63.782.
- (51) ASTM D3960-98, Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings, approved November 10, 1998, IBR approved for §§ 63.3360(c) and 63.8055(b).
- (52) ASTM D4006-11, Standard Test Method for Water in Crude Oil by Distillation, including Annex A1 and Appendix X1, (Approved June 1, 2011), IBR approved for § 63.10005(i) and table 6 to subpart DDDDD.

- (53) ASTM D4017-81, Standard Test Method for Water in Paints and Paint Materials by the Karl Fischer Titration Method, IBR approved for appendix A to subpart II.
- (54) ASTM D4017-90, Standard Test Method for Water in Paints and Paint Materials by the Karl Fischer Titration Method, IBR approved for appendix A to subpart II.
- (55) ASTM D4017-96a, Standard Test Method for Water in Paints and Paint Materials by the Karl Fischer Titration Method, IBR approved for appendix A to subpart II.
- (56) ASTM D4057-06 (Reapproved 2011), Standard Practice for Manual Sampling of Petroleum and Petroleum Products, including Annex A1, (Approved June 1, 2011), IBR approved for § 63.10005(i) and table 6 to subpart DDDDD.
- (57) ASTM D4082-89, Standard Test Method for Effects of Gamma Radiation on Coatings for Use in Light-Water Nuclear Power Plants, IBR approved for § 63.782.
- (58) ASTM D4084-07, Standard Test Method for Analysis of Hydrogen Sulfide in Gaseous Fuels (Lead Acetate Reaction Rate Method), (Approved June 1, 2007), IBR approved for table 6 to subpart DDDDD.
- (59) ASTM D4177-95 (Reapproved 2010), Standard Practice for Automatic Sampling of Petroleum and Petroleum Products, including Annexes A1 through A6 and Appendices X1 and X2, (Approved May 1, 2010), IBR approved for § 63.10005(i) and table 6 to subpart DDDDD.
- (60) ASTM D4208-02 (Reapproved 2007), Standard Test Method for Total Chlorine in Coal by the Oxygen Bomb Combustion/Ion Selective Electrode Method, approved May 1, 2007, IBR approved for table 6 to subpart DDDDD.
- (61) ASTM D4239-14e1, "Standard Test Method for Sulfur in the Analysis Sample of Coal and Coke Using High-Temperature Tube Furnace Combustion," approved March 1, 2014, IBR approved for § 63.849(f).
- (62) ASTM D4256-89, Standard Test Method for Determination of the Decontaminability of Coatings Used in Light-Water Nuclear Power Plants, IBR approved for § 63.782.
- (63) ASTM D4256-89 (Reapproved 94), Standard Test Method for Determination of the Decontaminability of Coatings Used in Light-Water Nuclear Power Plants, IBR approved for § 63.782.
- (64) ASTM D4282-15, Standard Test Method for Determination of Free Cyanide in Water and Wastewater by Microdiffusion, Approved July 15, 2015, IBR approved for § 63.1103(g).
- (65) ASTM D4606-03 (Reapproved 2007), Standard Test Method for Determination of Arsenic and Selenium in Coal by the Hydride Generation/Atomic Absorption Method, (Approved October 1, 2007), IBR approved for table 6 to subpart DDDDD.
- (66) ASTM D4809-95, Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter (Precision Method), IBR approved for § 63.11(b).
- (67) ASTM D4840-99 (Reapproved 2018)^e, Standard Guide for Sampling Chain-of-Custody Procedures, approved August 15, 2018, IBR approved for appendix A to part 63.
- (68) ASTM D4891-89 (Reapproved 2006), Standard Test Method for Heating Value of Gases in Natural Gas Range by Stoichiometric Combustion, (Approved June 1, 2006), IBR approved for §§ 63.772(h) and 63.1282(g).

- (69) ASTM D5066-91 (Reapproved 2017), Standard Test Method for Determination of the Transfer Efficiency Under Production Conditions for Spray Application of Automotive Paints-Weight Basis, approved June 1, 2017, IBR approved for § 63.3161(g).
- (70) ASTM D5087-02, Standard Test Method for Determining Amount of Volatile Organic Compound (VOC) Released from Solventborne Automotive Coatings and Available for Removal in a VOC Control Device (Abatement), IBR approved for § 63.3165(e) and appendix A to subpart IIII.
- (71) ASTM D5192-09, Standard Practice for Collection of Coal Samples from Core, (Approved June 1, 2009), IBR approved for table 6 to subpart DDDDD.
- (72) ASTM D5198-09, Standard Practice for Nitric Acid Digestion of Solid Waste, (Approved February 1, 2009), IBR approved for table 6 to subpart DDDDD and table 5 to subpart JJJJJJ.
- (73) ASTM D5228-92, Standard Test Method for Determination of Butane Working Capacity of Activated Carbon, (Reapproved 2005), IBR approved for § 63.11092(b).
- (74) ASTM D5291-02, Standard Test Methods for Instrumental Determination of Carbon, Hydrogen, and Nitrogen in Petroleum Products and Lubricants, IBR approved for appendix A to subpart MMMM.
- (75) ASTM D5790-95 (Reapproved 2012), Standard Test Method for Measurement of Purgeable Organic Compounds in Water by Capillary Column Gas Chromatography/Mass Spectrometry, Approved June 15, 2012, IBR approved for § 63.2485(h) and Table 4 to subpart UUUU.
- (76) ASTM D5864-11, Standard Test Method for Determining Aerobic Aquatic Biodegradation of Lubricants or Their Components, (Approved March 1, 2011), IBR approved for table 6 to subpart DDDDD.
- (77) ASTM D5865-10a, Standard Test Method for Gross Calorific Value of Coal and Coke, (Approved May 1, 2010), IBR approved for table 6 to subpart DDDDD and table 5 to subpart JJJJJJ.
- (78) ASTM D5954-98 (Reapproved 2006), Test Method for Mercury Sampling and Measurement in Natural Gas by Atomic Absorption Spectroscopy, (Approved December 1, 2006), IBR approved for table 6 to subpart DDDDD.
- (79) ASTM D5965-02 (Reapproved 2013), Standard Test Methods for Specific Gravity of Coating Powders, approved June 1, 2013, IBR approved for §§ 63.3151(b) and 63.3951(c).
- (80) ASTM D6053-00, Standard Test Method for Determination of Volatile Organic Compound (VOC) Content of Electrical Insulating Varnishes, IBR approved for appendix A to subpart MMMM.
- (81) ASTM D6093-97 (Reapproved 2003), Standard Test Method for Percent Volume Nonvolatile Matter in Clear or Pigmented Coatings Using a Helium Gas Pycnometer, IBR approved for §§ 63.3521 and 63.5160(c).
- (82) ASTM D6093-97 (Reapproved 2016), Standard Test Method for Percent Volume Nonvolatile Matter in Clear or Pigmented Coatings Using a Helium Gas Pycnometer, approved December 1, 2016, IBR approved for §§ 63.3161(f), 63.3360(c), 63.3941(b), 63.4141(b), 63.4741(a) and (b), and 63.4941(b).
- (83) ASTM D6196-03 (Reapproved 2009), Standard Practice for Selection of Sorbents, Sampling, and Thermal Desorption Analysis Procedures for Volatile Organic Compounds in Air, Approved March 1, 2009, IBR approved for appendix A to this part: Method 325A and Method 325B.

- (84) ASTM D6266-00a (Reapproved 2017), Standard Test Method for Determining the Amount of Volatile Organic Compound (VOC) Released from Waterborne Automotive Coatings and Available for Removal in a VOC Control Device (Abatement), approved July 1, 2017, IBR approved for § 63.3165(e).
- (85) ASTM D6323-98 (Reapproved 2003), Standard Guide for Laboratory Subsampling of Media Related to Waste Management Activities, (Approved August 10, 2003), IBR approved for table 6 to subpart DDDDD and table 5 to subpart JJJJJJ.
- (86) ASTM D6348-03, Standard Test Method for Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform Infrared (FTIR) Spectroscopy, including Annexes A1 through A8, Approved October 1, 2003, IBR approved for §§ 63.457(b), 63.997(e), and 63.1349, table 4 to subpart DDDD, table 5 to subpart EEEE, table 4 to subpart UUUU, table 4 subpart ZZZZ, and table 8 to subpart HHHHHH.
- (87) ASTM D6348-03 (Reapproved 2010), Standard Test Method for Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform Infrared (FTIR) Spectroscopy, including Annexes A1 through A8, Approved October 1, 2010, IBR approved for §§ 63.1571(a), 63.4751(i), 63.4752(e), 63.4766(b), 63.7142(a) and (b), tables 4 and 5 to subpart JJJJJ, tables 4 and 6 to subpart KKKKK, tables 1, 2, and 5 to subpart UUUUU and appendix B to subpart UUUUU.
- (88) ASTM D6348-12e1, Standard Test Method for Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform Infrared (FTIR) Spectroscopy, Approved February 1, 2012, IBR approved for §§ 63.997(e), 63.1571(a), and 63.2354(b), table 5 to subpart EEEE, table 4 to subpart UUUU, §§ 63.7142(a) and (b) and 63.8000(d), and table 4 to subpart SSSSS.
- (89) ASTM D6348-12 (Reapproved 2020), Standard Test Method for Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform Infrared (FTIR) Spectroscopy, Approved February 1, 2012, IBR approved for §§ 63.109(a); 63.365(b); 63.509(a); 63.7322(d), (e), and (g); 63.7825(g) and (h); table 5 to subpart AAAAA.
- (90) ASTM D6350-98 (Reapproved 2003), Standard Test Method for Mercury Sampling and Analysis in Natural Gas by Atomic Fluorescence Spectroscopy, (Approved May 10, 2003), IBR approved for table 6 to subpart DDDDD.
- (91) ASTM D6357-11, Test Methods for Determination of Trace Elements in Coal, Coke, and Combustion Residues from Coal Utilization Processes by Inductively Coupled Plasma Atomic Emission Spectrometry, (Approved April 1, 2011), IBR approved for table 6 to subpart DDDDD.
- (92) ASTM D6376-10, "Standard Test Method for Determination of Trace Metals in Petroleum Coke by Wavelength Dispersive X-Ray Fluorescence Spectroscopy," Approved July 1, 2010, IBR approved for § 63.849(f).
- (93) ASTM D6420-99, Standard Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography-Mass Spectrometry, IBR approved for §§ 63.5799 and 63.5850.
- (94) ASTM D6420-99 (Reapproved 2004), Standard Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography-Mass Spectrometry (Approved October 1, 2004), IBR approved for §§ 63.457(b), 63.772(a), 63.772(e), 63.1282(a) and (d), and table 8 to subpart HHHHHH.

- (95) ASTM D6420-99 (Reapproved 2010), Standard Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography-Mass Spectrometry, Approved October 1, 2010, IBR approved for §§ 63.670(j); table 4 to subpart UUUU; 63.1450(f); 63.7142(b); appendix A to this part.
- (96) ASTM D6420-18, Standard Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography-Mass Spectrometry, approved November 1, 2018' IBR approved for §§ 63.101(b); 63.115(g); 63.116(c); 63.126(d); 63.128(a); 63.139(c); 63.145(d) and (i); 63.150(g); 63.180(d); 63.305(c); 63.482(b); 63.485(t); 63.488(b); 63.490(c) and (e); 63.496(b); 63.500(c); 63.501(a); 63.502(j); 63.503(a) and (g); 63.525(a) and (e); 63.987(b); 63.997(e); 63.2354(b); table 5 to subpart EEEE; §§ 63.2450(j); 63.8000(d).
- (97) ASTM D6522-00, Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Concentrations in Emissions from Natural Gas Fired Reciprocating Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable Analyzers, IBR approved for § 63.9307(c).
- (98) ASTM D6522-00 (Reapproved 2005), Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Concentrations in Emissions from Natural Gas Fired Reciprocating Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable Analyzers, (Approved October 1, 2005), IBR approved for table 4 to subpart ZZZZ, table 5 to subpart DDDDDD, table 4 to subpart JJJJJJ, and §§ 63.772(e) and (h)) and 63.1282(d) and (g).
- (99) ASTM D6522-11 Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Concentrations in Emissions from Natural Gas-Fired Reciprocating Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable Analyzers, Approved December 1, 2011, IBR approved for § 63.1961(a) and table 3 to subpart YYYY.
- (100) ASTM D6721-01 (Reapproved 2006), Standard Test Method for Determination of Chlorine in Coal by Oxidative Hydrolysis Microcoulometry, (Approved April 1, 2006), IBR approved for table 6 to subpart DDDDD.
- (101) ASTM D6722-01 (Reapproved 2006), Standard Test Method for Total Mercury in Coal and Coal Combustion Residues by the Direct Combustion Analysis, (Approved April 1, 2006), IBR approved for Table 6 to subpart DDDDD and Table 5 to subpart JJJJJJ.
- (102) ASTM D6735-01 (Reapproved 2009), Standard Test Method for Measurement of Gaseous Chlorides and Fluorides from Mineral Calcining Exhaust Sources—Impinger Method, IBR approved for § 63.7142(b), tables 4 and 5 to subpart JJJJJ, and tables 4 and 6 to subpart KKKKK.
- (103) ASTM D6751-11b, Standard Specification for Biodiesel Fuel Blend Stock (B100) for Middle Distillate Fuels, (Approved July 15, 2011), IBR approved for §§ 63.7575 and 63.11237.
- (104) ASTM D6784-02 (Reapproved 2008), Standard Test Method for Elemental, Oxidized, Particle-Bound and Total Mercury in Flue Gas Generated from Coal-Fired Stationary Sources (Ontario Hydro Method), Approved April 1, 2008; IBR approved for §§ 63.2465(d); 63.11646(a); 63.11647(a) and (d); tables 1, 2, 5, 11, 12t, and 13 to subpart DDDDD; tables 4 and 5 to subpart JJJJJ; tables 4 and 6 to subpart KKKKK; table 4 to subpart JJJJJJ.
- (105) ASTM D6784-16, Standard Test Method for Elemental, Oxidized, Particle-Bound and Total Mercury in Flue Gas Generated from Coal-Fired Stationary Sources (Ontario Hydro Method), Approved March 1, 2016; IBR approved for §§ 63.1450(d); 63.9621; table 5 to subpart AAAAA; table 17 to subpart XXXX; table 5 to subpart UUUUU; appendix A to subpart UUUUU.

- (106) ASTM D6883-04, Standard Practice for Manual Sampling of Stationary Coal from Railroad Cars, Barges, Trucks, or Stockpiles, (Approved June 1, 2004), IBR approved for table 6 to subpart DDDDD.
- (107) ASTM D6886-18, Standard Test Method for Determination of the Weight Percent Individual Volatile Organic Compounds in Waterborne Air-Dry Coatings by Gas Chromatography, approved October 1, 2018, IBR approved for § 63.2354(c).
- (108) ASTM D7237-18, Standard Test Method for Free Cyanide and Aquatic Free Cyanide with Flow Injection Analysis (FIA) Utilizing Gas Diffusion Separation and Amperometric Detection, Approved December 1, 2018, IBR approved for § 63.1103(g).
- (109) ASTM D7430-11ae1, Standard Practice for Mechanical Sampling of Coal, (Approved October 1, 2011), IBR approved for table 6 to subpart DDDDD.
- (110) ASTM D7520-16, Standard Test Method for Determining the Opacity of a Plume in the Outdoor Ambient Atmosphere, approved April 1, 2016; IBR approved for §§ 63.1450(c), (e), and (g); 63.1453(h); 63.1625(b); table 3 to subpart LLLLL; §§ 63.7823(c) through (f), 63.7833(g); 63.11423(c).
- (111) [Reserved]
- (112) ASTM E145-94 (Reapproved 2001), Standard Specification for Gravity-Convection and Forced-Ventilation Ovens, IBR approved for appendix A to subpart PPPP.
- (113) ASTM E180-93, Standard Practice for Determining the Precision of ASTM Methods for Analysis and Testing of Industrial Chemicals, IBR approved for § 63.786(b).
- (114) ASTM E260-91, General Practice for Packed Column Gas Chromatography, IBR approved for §§ 63.750(b) and 63.786(b).
- (115) ASTM E260-96, General Practice for Packed Column Gas Chromatography, IBR approved for §§ 63.750(b) and 63.786(b).
- (116) ASTM E515-95 (Reapproved 2000), Standard Test Method for Leaks Using Bubble Emission Techniques, IBR approved for § 63.425(i).
- (117) ASTM E711-87 (Reapproved 2004), Standard Test Method for Gross Calorific Value of Refuse-Derived Fuel by the Bomb Calorimeter, (Approved August 28, 1987), IBR approved for table 6 to subpart DDDDD and table 5 to subpart JJJJJJ.
- (118) ASTM E776-87 (Reapproved 2009), Standard Test Method for Forms of Chlorine in Refuse-Derived Fuel, (Approved July 1, 2009), IBR approved for table 6 to subpart DDDDD.
- (119) ASTM E871-82 (Reapproved 2006), Standard Test Method for Moisture Analysis of Particulate Wood Fuels, (Approved November 1, 2006), IBR approved for table 6 to subpart DDDDD and table 5 to subpart JJJJJJ.
- (120) ASTM UOP539-12, Refinery Gas Analysis by GC, Copyright 2012 (to UOP), IBR approved for § 63.670(j).

Note 2 to paragraph (i): Standards listed in this paragraph (i) may also be available from standards resellers including the Standards Store, <https://global.ihs.com>.

- (j) Bay Area Air Quality Management District (BAAQMD), 939 Ellis Street, San Francisco, California 94109, <http://www.arb.ca.gov/DRDB/BA/CURHTML/ST/st30.pdf>.
 - (1) “BAAQMD Source Test Procedure ST-30—Static Pressure Integrity Test, Underground Storage Tanks,” adopted November 30, 1983, and amended December 21, 1994, IBR approved for § 63.11120(a).
 - (2) [Reserved]
- (k) British Standards Institute, 389 Chiswick High Road, London W4 4AL, United Kingdom.
 - (1) BS EN 1593:1999, Non-destructive Testing: Leak Testing—Bubble Emission Techniques, IBR approved for § 63.425(i).
 - (2) BS EN 14662-4:2005, Ambient air quality standard method for the measurement of benzene concentrations—Part 4: Diffusive sampling followed by thermal desorption and gas chromatography, Published June 27, 2005, IBR approved for appendix A to this part: Method 325A and Method 325B.
- (l) California Air Resources Board (CARB), 1001 I Street, P.O. Box 2815, Sacramento, CA 95812-2815, Telephone (916) 327-0900, <http://www.arb.ca.gov/>.
 - (1) Method 310, “Determination of Volatile Organic Compounds (VOC) in Consumer Products and Reactive Organic Compounds (ROC) in Aerosol Coating Products,” amended May 25, 2018, IBR approved for § 63.8055(b).
 - (2) Method 428, “Determination Of Polychlorinated Dibenzo-P-Dioxin (PCDD), Polychlorinated Dibenzofuran (PCDF), and Polychlorinated Biphenyle Emissions from Stationary Sources,” amended September 12, 1990, IBR approved for § 63.849(a)(13) and (14).
 - (3) Method 429, Determination of Polycyclic Aromatic Hydrocarbon (PAH) Emissions from Stationary Sources, Adopted September 12, 1989, Amended July 28, 1997, IBR approved for § 63.1625(b).
 - (4) California Air Resources Board Vapor Recovery Test Procedure TP-201.1—“Volumetric Efficiency for Phase I Vapor Recovery Systems,” adopted April 12, 1996, and amended February 1, 2001 and October 8, 2003, IBR approved for § 63.11120(b).
 - (5) California Air Resources Board Vapor Recovery Test Procedure TP-201.1E—“Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves,” adopted October 8, 2003, IBR approved for § 63.11120(a).
 - (6) California Air Resources Board Vapor Recovery Test Procedure TP-201.3—“Determination of 2-Inch WC Static Pressure Performance of Vapor Recovery Systems of Dispensing Facilities,” adopted April 12, 1996 and amended March 17, 1999, IBR approved for § 63.11120(a).
- (m) Composite Panel Association, 19465 Deerfield Avenue, Suite 306, Leesburg, VA 20176, Telephone (703)724-1128, and www.compositepanel.org.
 - (1) ANSI A135.4-2012, Basic Hardboard, approved June 8, 2012, IBR approved for § 63.4781.
 - (2) [Reserved]
- (n) Environmental Protection Agency. Air and Radiation Docket and Information Center, 1200 Pennsylvania Avenue NW., Washington, DC 20460, telephone number (202) 566-1745.
 - (1) *California Regulatory Requirements Applicable to the Air Toxics Program*, November 16, 2010, IBR approved for § 63.99(a).

- (2) New Jersey's *Toxic Catastrophe Prevention Act Program*, (July 20, 1998), IBR approved for § 63.99(a).
- (3) Delaware Department of Natural Resources and Environmental Control, Division of Air and Waste Management, *Accidental Release Prevention Regulation*, sections 1 through 5 and sections 7 through 14, effective January 11, 1999, IBR approved for § 63.99(a).
- (4) State of Delaware Regulations Governing the Control of Air Pollution (October 2000), IBR approved for § 63.99(a).
- (5) Massachusetts Department of Environmental Protection regulations at 310 CMR 7.26(10)-(16), *Air Pollution Control*, effective as of September 5, 2008, corrected March 6, 2009, and 310 CMR 70.00, *Environmental Results Program Certification*, effective as of December 28, 2007. IBR approved for § 63.99(a).
- (6)
 - (i) New Hampshire Regulations at Env-Sw 2100, *Management and Control of Asbestos Disposal Sites Not Operated after July 9, 1981*, effective September 1, 2018, (including a letter from Robert R. Scott, Commissioner, Department of Environmental Services, State of New Hampshire, to David J. Alukonis, Director, Office of Legislative Services, dated October 23, 2018, certifying that the enclosed rule, Env-Sw 2100, is the official version of this rule), IBR approved for § 63.99(a).
 - (ii) New Hampshire Code of Administrative Rules: Chapter Env-A 1800, *Asbestos Management and Control*, effective as of May 5, 2017 (certified with June 23, 2017 letter from Clark B. Freise, Assistant Commissioner, Department of Environmental Services, State of New Hampshire), as follows: Revision Notes #1 and #2; Part Env-A 1801-1807, excluding Env-A 1801.02(e), Env-A 1801.07, Env-A 1802.02, Env-A 1802.04, Env-A 1802.07-1802.09, Env-A 1802.13, Env-A 1802.15-1802.17, Env-A 1802.25, Env-A 1802.31, Env-A 1802.37, Env-A 1802.40, Env-A 1802.44, and Env-A 1803.05-1803.09; and Appendices B, C, and D; IBR approved for § 63.99(a).
- (7) Maine Department of Environmental Protection regulations at Chapter 125, *Perchloroethylene Dry Cleaner Regulation*, effective as of June 2, 1991, last amended on June 24, 2009. IBR approved for § 63.99(a).
- (8) California South Coast Air Quality Management District's "Spray Equipment Transfer Efficiency Test Procedure for Equipment User, May 24, 1989," IBR approved for §§ 63.11173(e) and 63.11516(d).
- (9) California South Coast Air Quality Management District's "Guidelines for Demonstrating Equivalency with District Approved Transfer Efficient Spray Guns, September 26, 2002," Revision 0, IBR approved for §§ 63.11173(e) and 63.11516(d).
- (10) Rhode Island Regulations at Title 250 Department of Environmental Management, Chapter 120 Air Resources, Subchapter 05 Air Pollution Control:
 - (i) 250-RICR-120-05-0. Part 0 General Definitions Regulation, effective as of January 4, 2022, excluding 0.2 "Application"; IBR approved for § 63.99(a).
 - (ii) 250-RICR-120-05-36. Part 36 Control of Emissions from Organic Solvent Cleaning, effective as of June 13, 2022, excluding 36.2 "Application", 36.5.A.28, "Industrial solvent cleaning", 36.6.D, and 36.17 "Requirements for Industrial Cleaning Solvents"; IBR approved for § 63.99(a).
- (11) [Reserved]

- (12) Alaska Statute 42.45.045. Renewable energy grant fund and recommendation program, available at <http://www.legis.state.ak.us/basis/folio.asp>, IBR approved for § 63.6675.
- (13) Vermont Air Pollution Control Regulations, Chapter 5, Air Pollution Control, section 5-253.11, Perchloroethylene Dry Cleaning, effective as of December 15, 2016. Incorporation by reference approved for § 63.99(a).
- (o) U.S. Environmental Protection Agency (EPA), 1200 Pennsylvania Avenue NW, Washington, DC 20460; phone: (202) 272-0167; website: www.epa.gov/aboutepa/forms/contact-epa.
 - (1) EPA/100/R-10/005, Recommended Toxicity Equivalence Factors (TEFs) for Human Health Risk Assessments of 2, 3, 7, 8-Tetrachlorodibenzo-p-dioxin and Dioxin-Like Compounds, December 2010; IBR approved for §§ 63.1450(f); 63.1459; table 2 to subpart QQQ; table 1 to subpart AAAAA. (Available at <https://www.epa.gov/sites/default/files/2013-09/documents/tefs-for-dioxin-epa-00-r-10-005-final.pdf>.)
 - (2) EPA-453/R-01-005, National Emission Standards for Hazardous Air Pollutants (NESHAP) for Integrated Iron and Steel Plants—Background Information for Proposed Standards, Final Report, January 2001; IBR approved for § 63.7491(g).
 - (3) EPA-454/B-08-002, Quality Assurance Handbook for Air Pollution Measurement Systems; Volume IV: Meteorological Measurements, Version 2.0 (Final), Issued March 2008; IBR approved for §§ 63.184(c); 63.7792(b).
 - (4) EPA-454/R-98-015, Fabric Filter Bag Leak Detection Guidance, September 1997; IBR approved for §§ 63.548(e); 63.864(e); 63.6012(c); 63.7525(j); 63.8450(e); 63.8600(e); 63.9632(a); 63.9804(f); 63.11224(f); 63.11423(e). (Available at: <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=2000D5T6.pdf>).
 - (5) EPA-454/R-99-005, Office of Air Quality Planning and Standards (OAQPS), Meteorological Monitoring Guidance for Regulatory Modeling Applications, February 2000; IBR approved for appendix A to this part.
 - (6) EPA/600/R-12/531, EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards, May 2012; IBR approved for § 63.2163(b).
 - (7) EPA-625/3-89-016, Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxins and -Dibenzofurans (CDDs and CDFs) and 1989 Update, March 1989; IBR approved for § 63.1513(d).
 - (8) EPA-821-R-02-019, Method 1631 Revision E, Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Absorption Fluorescence Spectrometry, Revision E, August 2002; IBR approved for table 6 to subpart DDDDD.
 - (9) EPA Method 200.8, Determination of Trace Elements in Waters and Wastes by Inductively Coupled Plasma—Mass Spectrometry, Revision 5.4, 1994; IBR approved for table 6 to subpart DDDDD.
 - (10) In EPA Publication No. SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (Available from: www.epa.gov/hw-sw846/sw-846-compendium):
 - (i) SW-846-0011, Sampling for Selected Aldehyde and Ketone Emissions from Stationary Sources, Revision 0, December 1996; IBR approved for table 4 to subpart DDDD.

- (ii) SW-846-3020A, Acid Digestion of Aqueous Samples And Extracts For Total Metals For Analysis By GFAA Spectroscopy, Revision 1, July 1992; IBR approved for table 6 to subpart DDDDD; table 5 to subpart JJJJJJ.
- (iii) SW-846-3050B, Acid Digestion of Sediments, Sludges, and Soils, Revision 2, December 1996; IBR approved for table 6 to subpart DDDDD; table 5 to subpart JJJJJJ.
- (iv) SW-846-5030B, Purge-And-Trap For Aqueous Samples, Revision 2, December 1996; IBR approved for §§ 63.109(b), (c), (d), and (e); 63.509(b) and (c); 63.2492(b) and (c).
- (v) SW-846-5031, Volatile, Nonpurgeable, Water-Soluble Compounds by Azeotropic Distillation, Revision 0, December 1996; IBR approved for §§ 63.109(b), (c), (d), and (e); 63.509(b) and (c); 63.2492(b) and (c).
- (vi) SW-846-7470A, Mercury In Liquid Waste (Manual Cold-Vapor Technique), Revision 1, September 1994; IBR approved for table 6 to subpart DDDDD; table 5 to subpart JJJJJJ.
- (vii) SW-846-7471B, Mercury In Solid Or Semisolid Waste (Manual Cold-Vapor Technique), Revision 2, February 2007; IBR approved for table 6 to subpart DDDDD; table 5 to subpart JJJJJJ.
- (viii) SW-846-8015C, Nonhalogenated Organics by Gas Chromatography, Revision 3, February 2007; IBR approved for §§ 63.11960; 63.11980; table 10 to subpart HHHHHHH.
- (ix) SW-846-8260B, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS), Revision 2, December 1996; IBR approved for §§ 63.1107(a); 63.11960; 63.11980; table 10 to subpart HHHHHHH.
- (x) SW-846-8260D, Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry, Revision 4, June 2018; IBR approved for §§ 63.109(b), (c), (d), and (e); 63.509(b) and (c); 63.2492(b) and (c).
- (xi) SW-846-8270D, Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS), Revision 4, February 2007; IBR approved for §§ 63.1107(a); 63.11960; 63.11980; table 10 to subpart HHHHHHH.
- (xii) SW-846-8315A, Determination of Carbonyl Compounds by High Performance Liquid Chromatography (HPLC), Revision 1, December 1996; IBR approved for §§ 63.11960; 63.11980; table 10 to subpart HHHHHHH.
- (xiii) SW-846-5050, Bomb Preparation Method for Solid Waste, Revision 0, September 1994; IBR approved for table 6 to subpart DDDDD.
- (xiv) SW-846-6010C, Inductively Coupled Plasma-Atomic Emission Spectrometry, Revision 3, February 2007; IBR approved for table 6 to subpart DDDDD.
- (xv) SW-846-6020A, Inductively Coupled Plasma-Mass Spectrometry, Revision 1, February 2007; IBR approved for table 6 to subpart DDDDD.
- (xvi) SW-846-7060A, Arsenic (Atomic Absorption, Furnace Technique), Revision 1, September 1994; IBR approved for table 6 to subpart DDDDD.
- (xvii) SW-846-7740, Selenium (Atomic Absorption, Furnace Technique), Revision 0, September 1986; IBR approved for table 6 to subpart DDDDD.

- (xviii) SW-846-9056, Determination of Inorganic Anions by Ion Chromatography, Revision 1, February 2007; IBR approved for table 6 to subpart DDDDD.
- (xix) SW-846-9076, Test Method for Total Chlorine in New and Used Petroleum Products by Oxidative Combustion and Microcoulometry, Revision 0, September 1994; IBR approved for table 6 to subpart DDDDD.
- (xx) SW-846-9250, Chloride (Colorimetric, Automated Ferricyanide AAI), Revision 0, September 1986; IBR approved for table 6 to subpart DDDDD.

(11)-(30) [Reserved]

- (31) EPA/100/R-10/005, Recommended Toxicity Equivalence Factors (TEFs) for Human Health Risk Assessments of 2, 3, 7, 8-Tetrachlorodibenzo-p-dioxin and Dioxin-Like Compounds, December 2010; IBR approved for § 63.1459 and table 2 to subpart QQQ. (Available at <https://www.epa.gov/sites/default/files/2013-09/documents/tefs-for-dioxin-epa-00-r-10-005-final.pdf>.)
- (p) International Standards Organization (ISO), 1, ch. de la Voie-Creuse, Case postale 56, CH-1211 Geneva 20, Switzerland, + 41 22 749 01 11, <http://www.iso.org/iso/home.htm>.
 - (1) ISO 6978-1:2003(E), Natural Gas—Determination of Mercury—Part 1: Sampling of Mercury by Chemisorption on Iodine, First edition, October 15, 2003, IBR approved for table 6 to subpart DDDDD.
 - (2) ISO 6978-2:2003(E), Natural gas—Determination of Mercury—Part 2: Sampling of Mercury by Amalgamation on Gold/Platinum Alloy, First edition, October 15, 2003, IBR approved for table 6 to subpart DDDDD.
 - (3) ISO 16017-2:2003(E): Indoor, ambient and workplace air—sampling and analysis of volatile organic compounds by sorbent tube/thermal desorption/capillary gas chromatography—Part 2: Diffusive sampling, May 15, 2003, IBR approved for appendix A to this part: Method 325A and Method 325B.
- (q) National Council of the Paper Industry for Air and Stream Improvement, Inc. (NCASI), P.O. Box 133318, Research Triangle Park, NC 27709-3318 or at <http://www.ncasi.org>.
 - (1) NCASI Method DI/MEOH-94.03, Methanol in Process Liquids and Wastewaters by GC/FID, Issued May 2000, IBR approved for §§ 63.457 and 63.459.
 - (2) NCASI Method CI/WP-98.01, Chilled Impinger Method For Use At Wood Products Mills to Measure Formaldehyde, Methanol, and Phenol, 1998, Methods Manual, IBR approved for table 4 to subpart DDDD.
 - (3) NCASI Method DI/HAPS-99.01, Selected HAPs In Condensates by GC/FID, Issued February 2000, IBR approved for § 63.459(b).
 - (4) NCASI Method IM/CAN/WP-99.02, Impinger/Canister Source Sampling Method for Selected HAPs and Other Compounds at Wood Products Facilities, January 2004, Methods Manual, IBR approved for table 4 to subpart DDDD.
 - (5) NCASI Method ISS/FP A105.01, Impinger Source Sampling Method for Selected Aldehydes, Ketones, and Polar Compounds, December 2005, Methods Manual, IBR approved for table 4 to subpart DDDD and §§ 63.4751(i) and 63.4752(e).
- (r) National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161, (703) 605-6000 or (800) 553-6847; or for purchase from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, (202) 512-1800.

- (1) Handbook 44, Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices 1998, IBR approved for § 63.1303(e).
- (2) "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, Third Edition. (A suffix of "A" in the method number indicates revision one (the method has been revised once). A suffix of "B" in the method number indicates revision two (the method has been revised twice).
 - (i) Method 0023A, "Sampling Method for Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofuran Emissions from Stationary Sources," Revision 2, dated August 2018, IBR approved for § 63.1208(b).
 - (ii) Method 9071B, "n-Hexane Extractable Material (HEM) for Sludge, Sediment, and Solid Samples," dated April 1998, IBR approved for § 63.7824(e).
 - (iii) Method 9095A, "Paint Filter Liquids Test," dated December 1996, IBR approved for §§ 63.7700(b) and 63.7765.
 - (iv) Method 9095B, "Paint Filter Liquids Test," (revision 2), dated November 2004, IBR approved for the definition of "Free organic liquids" in §§ 63.10692, 63.10885(a), and the definition of "Free liquids" in § 63.10906.
 - (v) SW-846 74741B, Revision 2, "Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique)," February 2007, IBR approved for § 63.11647(f).
- (3) National Institute of Occupational Safety and Health (NIOSH) test method compendium, "NIOSH Manual of Analytical Methods," NIOSH publication no. 94-113, Fourth Edition, August 15, 1994.
 - (i) NIOSH Method 2010, "Amines, Aliphatic," Issue 2, August 15, 1994, IBR approved for § 63.7732(g).
 - (ii) [Reserved]
- (s) North American Electric Reliability Corporation, 1325 G Street, NW., Suite 600, Washington, DC 20005-3801, <http://www.nerc.com>, http://www.nerc.com/files/EOP0002-3_1.pdf.
 - (1) North American Electric Reliability Corporation Reliability Standard EOP-002-3, Capacity and Energy Emergencies, adopted August 5, 2010, IBR approved for § 63.6640(f).
 - (2) [Reserved]
- (t) Technical Association of the Pulp and Paper Industry (TAPPI), 15 Technology Parkway South, Norcross, GA 30092, (800) 332-8686, <http://www.tappi.org>.
 - (1) TAPPI T 266, Determination of Sodium, Calcium, Copper, Iron, and Manganese in Pulp and Paper by Atomic Absorption Spectroscopy (Reaffirmation of T 266 om-02), Draft No. 2, July 2006, IBR approved for table 6 to subpart DDDDD.
 - (2) [Reserved]
- (u) Texas Commission on Environmental Quality (TCEQ) Library, Post Office Box 13087, Austin, Texas 78711-3087; phone: (512) 239-0028; email: info@www.tceq.texas.gov; website: www.tceq.texas.gov.

- (1) "Air Stripping Method (Modified El Paso Method) for Determination of Volatile Organic Compound Emissions from Water Sources," Revision Number One, dated January 2003, Sampling Procedures Manual, Appendix P: Cooling Tower Monitoring, January 31, 2003; IBR approved for §§ 63.104(f) and (g); 63.654(c) and (g); 63.655(i); 63.1086(e); 63.1089; 63.2490(d); 63.2525(r); 63.11920. (Available from: www.tceq.texas.gov/downloads/compliance/investigations/assistance/samplingappp.pdf).
- (2) [Reserved]

[79 FR 11277, Feb. 27, 2014]

Editorial Note: For FEDERAL REGISTER citations affecting § 63.14, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at www.govinfo.gov.

§ 63.15 Availability of information and confidentiality.

(a) *Availability of information.*

- (1) With the exception of information protected through part 2 of this chapter, all reports, records, and other information collected by the Administrator under this part are available to the public. In addition, a copy of each permit application, compliance plan (including the schedule of compliance), notification of compliance status, excess emissions and continuous monitoring systems performance report, and title V permit is available to the public, consistent with protections recognized in section 503(e) of the Act.
- (2) The availability to the public of information provided to or otherwise obtained by the Administrator under this part shall be governed by part 2 of this chapter.

(b) *Confidentiality.*

- (1) If an owner or operator is required to submit information entitled to protection from disclosure under section 114(c) of the Act, the owner or operator may submit such information separately. The requirements of section 114(c) shall apply to such information.
- (2) The contents of a title V permit shall not be entitled to protection under section 114(c) of the Act; however, information submitted as part of an application for a title V permit may be entitled to protection from disclosure.

§ 63.16 Performance Track Provisions.

- (a) Notwithstanding any other requirements in this part, an affected source at any major source or any area source at a Performance Track member facility, which is subject to regular periodic reporting under any subpart of this part, may submit such periodic reports at an interval that is twice the length of the regular period specified in the applicable subparts; provided, that for sources subject to permits under 40 CFR part 70 or 71 no interval so calculated for any report of the results of any required monitoring may be less frequent than once in every six months.
- (b) Notwithstanding any other requirements in this part, the modifications of reporting requirements in paragraph (c) of this section apply to any major source at a Performance Track member facility which is subject to requirements under any of the subparts of this part and which has:
 - (1) Reduced its total HAP emissions to less than 25 tons per year;
 - (2) Reduced its emissions of each individual HAP to less than 10 tons per year; and

- (3) Reduced emissions of all HAPs covered by each MACT standard to at least the level required for full compliance with the applicable emission standard.
- (c) For affected sources at any area source at a Performance Track member facility and which meet the requirements of paragraph (b)(3) of this section, or for affected sources at any major source that meet the requirements of paragraph (b) of this section:
 - (1) If the emission standard to which the affected source is subject is based on add-on control technology, and the affected source complies by using add-on control technology, then all required reporting elements in the periodic report may be met through an annual certification that the affected source is meeting the emission standard by continuing to use that control technology. The affected source must continue to meet all relevant monitoring and recordkeeping requirements. The compliance certification must meet the requirements delineated in Clean Air Act section 114(a)(3).
 - (2) If the emission standard to which the affected source is subject is based on add-on control technology, and the affected source complies by using pollution prevention, then all required reporting elements in the periodic report may be met through an annual certification that the affected source is continuing to use pollution prevention to reduce HAP emissions to levels at or below those required by the applicable emission standard. The affected source must maintain records of all calculations that demonstrate the level of HAP emissions required by the emission standard as well as the level of HAP emissions achieved by the affected source. The affected source must continue to meet all relevant monitoring and recordkeeping requirements. The compliance certification must meet the requirements delineated in Clean Air Act section 114(a)(3).
 - (3) If the emission standard to which the affected source is subject is based on pollution prevention, and the affected source complies by using pollution prevention and reduces emissions by an additional 50 percent or greater than required by the applicable emission standard, then all required reporting elements in the periodic report may be met through an annual certification that the affected source is continuing to use pollution prevention to reduce HAP emissions by an additional 50 percent or greater than required by the applicable emission standard. The affected source must maintain records of all calculations that demonstrate the level of HAP emissions required by the emission standard as well as the level of HAP emissions achieved by the affected source. The affected source must continue to meet all relevant monitoring and recordkeeping requirements. The compliance certification must meet the requirements delineated in Clean Air Act section 114(a)(3).
 - (4) Notwithstanding the provisions of paragraphs (c)(1) through (3), of this section, for sources subject to permits under 40 CFR part 70 or 71, the results of any required monitoring and recordkeeping must be reported not less frequently than once in every six months.

[69 FR 21753, Apr. 22, 2004]

Table 1 to Subpart A of Part 63—Detection Sensitivity Levels (grams per hour)

Monitoring frequency per subpart ^a	Detection sensitivity level
Bi-Monthly	60
Semi-Quarterly	85
Monthly	100

^a When this alternative work practice is used to identify leaking equipment, the owner or operator must choose one of the monitoring frequencies listed in this table, in lieu of the monitoring frequency specified in the applicable subpart. Bi-monthly means every other month. Semi-quarterly means twice per quarter. Monthly means once per month.

[73 FR 78213, Dec. 22, 2008]

This content is from the eCFR and is authoritative but unofficial.

Title 40 —Protection of Environment

Chapter I —Environmental Protection Agency

Subchapter C —Air Programs

Part 63 —National Emission Standards for Hazardous Air Pollutants for Source Categories

Authority: 42 U.S.C. 7401 *et seq.*

Source: 57 FR 61992, Dec. 29, 1992, unless otherwise noted.

Subpart F National Emission Standards for Hazardous Air Pollutants From the Synthetic Organic Chemical Manufacturing Industry

§ 63.100 Applicability and designation of source.

§ 63.101 Definitions.

§ 63.102 General standards.

§ 63.103 General compliance, reporting, and recordkeeping provisions.

§ 63.104 Heat exchange system requirements.

§ 63.105 Maintenance wastewater requirements.

§ 63.106 Implementation and enforcement.

§ 63.107 Identification of process vents subject to this subpart.

§ 63.108 Flare requirements.

§ 63.109 Procedures for determining whether process vents, storage vessels, equipment, wastewater, and heat exchange systems are in ethylene oxide service.

Table 1 to Subpart F of Part 63

Synthetic Organic Chemical Manufacturing Industry Chemicals

Table 2 to Subpart F of Part 63

Organic Hazardous Air Pollutants

Table 3 to Subpart F of Part 63

General Provisions Applicability to Subparts F, G, and H ^a to
Subpart F

Table 4 to Subpart F of Part 63

Organic Hazardous Air Pollutants Subject to Cooling Tower
Monitoring Requirements in § 63.104

Subpart F—National Emission Standards for Hazardous Air Pollutants From the Synthetic Organic Chemical Manufacturing Industry

Source: 59 FR 19454, Apr. 22, 1994, unless otherwise noted.

§ 63.100 Applicability and designation of source.

- (a) This subpart provides applicability provisions, definitions, and other general provisions that are applicable to subparts G and H of this part. This subpart also provides requirements for certain heat exchange systems, maintenance wastewater, and flares.
- (b) Except as provided in paragraphs (b)(4) and (c) of this section, the provisions of subparts F, G, and H of this part apply to chemical manufacturing process units that meet all the criteria specified in paragraphs (b)(1), (b)(2), and (b)(3) of this section:
 - (1) Manufacture as a primary product one or more of the chemicals listed in paragraphs (b)(1)(i) or (b)(1)(ii) of this section.
 - (i) One or more of the chemicals listed in table 1 of this subpart; or
 - (ii) One or more of the chemicals listed in paragraphs (b)(1)(ii)(A) or (b)(1)(ii)(B) of this section:
 - (A) Tetrahydrobenzaldehyde (CAS Number 100-50-5); or
 - (B) Crotonaldehyde (CAS Number 123-73-9).
 - (2) Use as a reactant or manufacture as a product, or co-product, one or more of the organic hazardous air pollutants listed in table 2 of this subpart;
 - (3) Are located at a plant site that is a major source as defined in section 112(a) of the Act.
 - (4) The owner or operator of a chemical manufacturing processing unit is exempt from all requirements of subparts F, G, and H of this part until not later than April 22, 1997 if the owner or operator certifies, in a notification to the appropriate EPA Regional Office, not later than May 14, 1996, that the plant site at which the chemical manufacturing processing unit is located emits, and will continue to emit, during any 12-month period, less than 10 tons per year of any individual hazardous air pollutants (HAP), and less than 25 tons per year of any combination of HAP.
 - (i) If such a determination is based on limitations and conditions that are not federally enforceable (as defined in subpart A of this part), the owner or operator shall document the basis for the determination as specified in paragraphs (b)(4)(i)(A) through (b)(4)(i)(C) and comply with the recordkeeping requirement in 63.103(f).
 - (A) The owner or operator shall identify all HAP emission points at the plant site, including those emission points subject to and emission points not subject to subparts F, G, and H;
 - (B) The owner or operator shall calculate the amount of annual HAP emissions released from each emission point at the plant site, using acceptable measurement or estimating techniques for maximum expected operating conditions at the plant site. Examples of estimating procedures that are considered acceptable include the calculation procedures in § 63.150 of subpart G, the early reduction demonstration procedures specified in §§ 63.74 (c)(2), (c)(3), (d)(2), (d)(3), and (g), or accepted engineering practices. If the total annual HAP emissions for the plant site are annually reported under Emergency Planning and Community Right-to-Know Act (EPCRA) section 313, then such reported annual emissions may be used to satisfy the requirements of § 63.100(b)(4)(i)(B).

- (C) The owner or operator shall sum the amount of annual HAP emissions from all emission points on the plant site. If the total emissions of any one HAP are less than 10 tons per year and the total emissions of any combination of HAP are less than 25 tons per year, the plant site qualifies for the exemption described in paragraph (b)(4) of this section, provided that emissions are kept below these thresholds.
- (ii) If such a determination is based on limitations and conditions that are federally enforceable (as defined in subpart A of this part), the owner or operator is not subject to the provisions of paragraph (b)(4) of this section.
- (c) The owner or operator of a chemical manufacturing process unit that meets the criteria specified in paragraphs (b)(1) and (b)(3) of this section but does not use as a reactant or manufacture as a product or co-product, any organic hazardous air pollutant listed in table 2 of this subpart shall comply only with the requirements of § 63.103(e) of this subpart. To comply with this subpart, such chemical manufacturing process units shall not be required to comply with the provisions of subpart A of this part.
- (d) The primary product of a chemical manufacturing process unit shall be determined according to the procedures specified in paragraphs (d)(1), (d)(2), (d)(3), and (d)(4) of this section.
 - (1) If a chemical manufacturing process unit produces more than one intended chemical product, the product with the greatest annual design capacity on a mass basis determines the primary product of the process.
 - (2) If a chemical manufacturing process unit has two or more products that have the same maximum annual design capacity on a mass basis and if one of those chemicals is listed in table 1 of this subpart, then the listed chemical is considered the primary product and the chemical manufacturing process unit is subject to this subpart. If more than one of the products is listed in table 1 of this subpart, then the owner or operator may designate as the primary product any of the listed chemicals and the chemical manufacturing process unit is subject to this subpart.
 - (3) For chemical manufacturing process units that are designed and operated as flexible operation units producing one or more chemicals listed in table 1 of this subpart, the primary product shall be determined for existing sources based on the expected utilization for the five years following April 22, 1994 and for new sources based on the expected utilization for the first five years after initial start-up.
 - (i) If the predominant use of the flexible operation unit, as described in paragraphs (d)(3)(i)(A) and (d)(3)(i)(B) of this section, is to produce one or more chemicals listed in table 1 of this subpart, then the flexible operation unit shall be subject to the provisions of subparts F, G, and H of this part.
 - (A) If the flexible operation unit produces one product for the greatest annual operating time, then that product shall represent the primary product of the flexible operation unit.
 - (B) If the flexible operation unit produces multiple chemicals equally based on operating time, then the product with the greatest annual production on a mass basis shall represent the primary product of the flexible operation unit.
 - (ii) The determination of applicability of this subpart to chemical manufacturing process units that are designed and operated as flexible operation units shall be reported as part of an operating permit application or as otherwise specified by the permitting authority.

- (4) Notwithstanding the provisions of paragraph (d)(3) of this section, for chemical manufacturing process units that are designed and operated as flexible operation units producing a chemical listed in paragraph (b)(1)(ii) of this section, the primary product shall be determined for existing sources based on the expected utilization for the five years following May 12, 1998 and for new sources based on the expected utilization for the first five years after initial start-up.
 - (i) The predominant use of the flexible operation unit shall be determined according to paragraphs (d)(3)(i)(A) and (d)(3)(i)(B) of this section. If the predominant use is to produce one of the chemicals listed in paragraph (b)(1)(ii) of this section, then the flexible operation unit shall be subject to the provisions of this subpart and subparts G and H of this part.
 - (ii) The determination of applicability of this subpart to chemical manufacturing process units that are designed and operated as flexible operation units shall be reported as part of an operating permit application or as otherwise specified by the permitting authority.
- (e) The source to which this subpart applies is the collection of all chemical manufacturing process units and the associated equipment at a major source that meet the criteria specified in paragraphs (b)(1) through (3) of this section. The source includes the process vents; storage vessels; transfer racks; waste management units; maintenance wastewater; heat exchange systems; equipment identified in § 63.149; and pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, instrumentation systems, surge control vessels, and bottoms receivers that are associated with that collection of chemical manufacturing process units. The source also includes equipment required by, or utilized as a method of compliance with, subparts F, G, or H of this part which may include control devices and recovery devices.
 - (1) This subpart applies to maintenance wastewater and heat exchange systems within a source that is subject to this subpart; and also applies to flares used to reduce organic HAP emissions from a source.
 - (2) This subpart F and subpart G of this part apply to process vents, storage vessels, transfer racks, equipment identified in § 63.149 of subpart G of this part, and wastewater streams and associated treatment residuals within a source that is subject to this subpart.
 - (3) This subpart and subpart H of this part apply to pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, instrumentation systems, surge control vessels, and bottoms receivers within a source that is subject to this subpart. Subpart H also contains fenceline monitoring requirements that apply to all emission sources (*i.e.*, maintenance wastewater, heat exchange systems, process vents, storage vessels, transfer racks, equipment identified in § 63.149, wastewater streams and associated treatment residuals within a source, and pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, instrumentation systems, surge control vessels, and bottoms receivers within a source). If specific items of equipment, comprising part of a chemical manufacturing process unit subject to this subpart, are managed by different administrative organizations (*e.g.*, different companies, affiliates, departments, divisions, etc.), those items of equipment may be aggregated with any chemical manufacturing process unit within the source for all purposes under subpart H, providing there is no delay in the applicable compliance date in § 63.100(k).

- (f) The source includes the emission points listed in paragraphs (f)(1) through (f)(11) of this section, but those emission points are not subject to the requirements of this subpart F and subparts G and H of this part. This subpart does not require emission points that are listed in paragraphs (f)(1) through (f)(11) of this section to comply with the provisions of subpart A of this part.
 - (1) Equipment that is located within a chemical manufacturing process unit that is subject to this subpart but the equipment does not contain organic hazardous air pollutants.
 - (2) Stormwater from segregated sewers;
 - (3) Water from fire-fighting and deluge systems in segregated sewers;
 - (4) Spills;
 - (5) Water from safety showers;
 - (6) Water from testing of deluge systems;
 - (7) Water from testing of firefighting systems;
 - (8) Except for storage vessels in ethylene oxide service, vessels storing organic liquids that contain organic hazardous air pollutants only as impurities;
 - (9) Loading racks, loading arms, or loading hoses that only transfer liquids containing organic hazardous air pollutants as impurities;
 - (10) Loading racks, loading arms, or loading hoses that vapor balance during all loading operations; and
 - (11) Equipment that is intended to operate in organic hazardous air pollutant service, as defined in § 63.101, for less than 300 hours during the calendar year.
- (g) The owner or operator shall follow the procedures specified in paragraphs (g)(1) through (g)(4) of this section to determine whether a storage vessel is part of the source to which this subpart applies.
 - (1) Where a storage vessel is dedicated to a chemical manufacturing process unit, the storage vessel shall be considered part of that chemical manufacturing process unit.
 - (i) If the chemical manufacturing process unit is subject to this subpart according to the criteria specified in paragraph (b) of this section, then the storage vessel is part of the source to which this subpart applies.
 - (ii) If the chemical manufacturing process unit is not subject to this subpart according to the criteria specified in paragraph (b) of this section, then the storage vessel is not part of the source to which this subpart applies.
 - (2) If a storage vessel is not dedicated to a single chemical manufacturing process unit, then the applicability of this subpart F and subpart G of this part shall be determined according to the provisions in paragraphs (g)(2)(i) through (g)(2)(iii) of this section.
 - (i) If a storage vessel is shared among chemical manufacturing process units and one of the process units has the predominant use, as determined by paragraph (g)(2)(i)(A) and (g)(2)(i)(B) of this section, then the storage vessel is part of that chemical manufacturing process unit.
 - (A) If the greatest input into the storage vessel is from a chemical manufacturing process unit that is located on the same plant site, then that chemical manufacturing process unit has the predominant use.

- (B) If the greatest input into the storage vessel is provided from a chemical manufacturing process unit that is not located on the same plant site, then the predominant use is the chemical manufacturing process unit on the same plant site that receives the greatest amount of material from the storage vessel.
 - (ii) If a storage vessel is shared among chemical manufacturing process units so that there is no single predominant use, and at least one of those chemical manufacturing process units is subject to this subpart, the storage vessel shall be considered to be part of the chemical manufacturing process unit that is subject to this subpart. If more than one chemical manufacturing process unit is subject to this subpart, the owner or operator may assign the storage vessel to any of the chemical manufacturing process units subject to this subpart.
 - (iii) If the predominant use of a storage vessel varies from year to year, then the applicability of this subpart shall be determined according to the criteria in paragraphs (g)(2)(iii)(A) and (g)(2)(iii)(B) of this section, as applicable. This determination shall be reported as part of an operating permit application or as otherwise specified by the permitting authority.
 - (A) For chemical manufacturing process units that produce one or more of the chemicals listed in table 1 of this subpart and meet the criteria in paragraphs (b)(2) and (b)(3) of this section, the applicability shall be based on the utilization that occurred during the 12-month period preceding April 22, 1994.
 - (B) For chemical manufacturing process units that produce one or more of the chemicals listed in paragraph (b)(1)(ii) of this section and meet the criteria in paragraphs (b)(2) and (b)(3) of this section, the applicability shall be based on the utilization that occurred during the 12-month period preceding May 12, 1998.
 - (iv) If there is a change in the material stored in the storage vessel, the owner or operator shall reevaluate the applicability of this subpart to the vessel.
- (3) Where a storage vessel is located at a major source that includes one or more chemical manufacturing process units which place material into, or receive materials from the storage vessel, but the storage vessel is located in a tank farm (including a marine tank farm), the applicability of this subpart F and subpart G of this part shall be determined according to the provisions in paragraphs (g)(3)(i) through (g)(3)(iv) of this section.
- (i) The storage vessel may only be assigned to a chemical manufacturing process unit that utilizes the storage vessel and does not have an intervening storage vessel for that product (or raw material, as appropriate). With respect to any chemical manufacturing process unit, an intervening storage vessel means a storage vessel connected by hard-piping to the chemical manufacturing process unit and to the storage vessel in the tank farm so that product or raw material entering or leaving the chemical manufacturing process unit flows into (or from) the intervening storage vessel and does not flow directly into (or from) the storage vessel in the tank farm.
 - (ii) If there is no chemical manufacturing process unit at the major source that meets the criteria of paragraph (g)(3)(i) of this section with respect to a storage vessel, this subpart F and subpart G of this part do not apply to the storage vessel.

- (iii) If there is only one chemical manufacturing process unit at the major source that meets the criteria of paragraph (g)(3)(i) of this section with respect to a storage vessel, the storage vessel shall be assigned to that chemical manufacturing process unit. Applicability of this subpart F and subpart G to this part to the storage vessel shall then be determined according to the provisions of paragraph (b) of this section.
 - (iv) If there are two or more chemical manufacturing process units at the major source that meet the criteria of paragraph (g)(3)(i) of this section with respect to a storage vessel, the storage vessel shall be assigned to one of those chemical manufacturing process units according to the provisions of paragraph (g)(2) of this section. The predominant use shall be determined among only those chemical manufacturing process units that meet the criteria of paragraph (g)(3)(i) of this section. Applicability of this subpart F and subpart G of this part to the storage vessel shall then be determined according to the provisions of paragraph (b) of this section.
- (4) If the storage vessel begins receiving material from (or sending material to) another chemical manufacturing process unit, or ceases to receive material from (or send material to) a chemical manufacturing process unit, or if the applicability of this subpart F and subpart G of this part to a storage vessel has been determined according to the provisions of paragraphs (g)(2)(i) and (g)(2)(ii) of this section and there is a change so that the predominant use may reasonably have changed, the owner or operator shall reevaluate the applicability of this subpart to the storage vessel.
- (h) The owner or operator shall follow the procedures specified in paragraphs (h)(1) and (h)(2) of this section to determine whether the arms and hoses in a loading rack are part of the source to which this subpart applies.
- (1) Where a loading rack is dedicated to a chemical manufacturing process unit, the loading rack shall be considered part of that specific chemical manufacturing process unit.
- (i) If the chemical manufacturing process unit is subject to this subpart according to the criteria specified in paragraph (b) of this section and the loading rack does not meet the criteria specified in paragraphs (f)(9) and (f)(10) of this section, then the loading rack is considered a transfer rack (as defined in § 63.101 of this subpart) and is part of the source to which this subpart applies.
 - (ii) If the chemical manufacturing process unit is not subject to this subpart according to the criteria specified in paragraph (b) of this section, then the loading rack is not considered a transfer rack (as defined in § 63.101 of this subpart) and is not a part of the source to which this subpart applies.
- (2) If a loading rack is shared among chemical manufacturing process units, then the applicability of this subpart F and subpart G of this part shall be determined at each loading arm or loading hose according to the provisions in paragraphs (h)(2)(i) through (h)(2)(iv) of this section.
- (i) Each loading arm or loading hose that is dedicated to the transfer of liquid organic hazardous air pollutants listed in table 2 of this subpart from a chemical manufacturing process unit to which this subpart applies is part of that chemical manufacturing process unit and is part of the source to which this subpart applies unless the loading arm or loading hose meets the criteria specified in paragraphs (f)(9) or (f)(10) of this section.

- (ii) If a loading arm or loading hose is shared among chemical manufacturing process units, and one of the chemical manufacturing process units provides the greatest amount of the material that is loaded by the loading arm or loading hose, then the loading arm or loading hose is part of that chemical manufacturing process unit.
 - (A) If the chemical manufacturing process unit is subject to this subpart according to the criteria specified in paragraph (b) of this section, then the loading arm or loading hose is part of the source to which this subpart applies unless the loading arm or loading hose meets the criteria specified in paragraphs (f)(9) or (f)(10) of this section.
 - (B) If the chemical manufacturing process unit is not subject to this subpart according to the criteria specified in paragraph (b) of this section, then the loading arm or loading hose is not part of the source to which this subpart applies.
- (iii) If a loading arm or loading hose is shared among chemical manufacturing process units so that there is no single predominant use as described in paragraph (h)(2)(ii) of this section and at least one of those chemical manufacturing process units is subject to this subpart, then the loading arm or hose is part of the chemical manufacturing process unit that is subject to this subpart. If more than one of the chemical manufacturing process units is subject to this subpart, the owner or operator may assign the loading arm or loading hose to any of the chemical manufacturing process units subject to this subpart.
- (iv) If the predominant use of a loading arm or loading hose varies from year to year, then the applicability of this subpart shall be determined according to the criteria in paragraphs (h)(2)(iv)(A) and (h)(2)(iv)(B) of this section, as applicable. This determination shall be reported as part of an operating permit application or as otherwise specified by the permitting authority.
 - (A) For chemical manufacturing process units that produce one or more of the chemicals listed in table 1 of this subpart and meet the criteria in paragraphs (b)(2) and (b)(3) of this section, the applicability shall be based on the utilization that occurred during the 12-month period preceding April 22, 1994.
 - (B) For chemical manufacturing process units that produce one or more of the chemicals listed in paragraph (b)(1)(ii) of this section and meet the criteria in paragraphs (b)(2) and (b)(3) of this section, the applicability shall be based on the utilization that occurred during the year preceding May 12, 1998.
- (3) If a loading rack that was dedicated to a single chemical manufacturing process unit begins to serve another chemical manufacturing process unit, or if applicability was determined under the provisions of paragraphs (h)(2)(i) through (h)(2)(iii) of this section and there is a change so that the predominant use may reasonably have changed, the owner or operator shall reevaluate the applicability of this subpart to the loading rack, loading arm, or loading hose.
- (i) Except as provided in paragraph (i)(4) of this section, the owner or operator shall follow the procedures specified in paragraphs (i)(1) through (i)(3) and (i)(5) of this section to determine whether the vent(s) from a distillation unit is part of the source to which this subpart applies.
 - (1) Where a distillation unit is dedicated to a chemical manufacturing process unit, the distillation column shall be considered part of that chemical manufacturing process unit.

- (i) If the chemical manufacturing process unit is subject to this subpart according to the criteria specified in paragraph (b) of this section, then the distillation unit is part of the source to which this subpart applies.
 - (ii) If the chemical manufacturing process unit is not subject to this subpart according to the criteria specified in paragraph (b) of this section, then the distillation unit is not part of the source to which this subpart applies.
- (2) If a distillation unit is not dedicated to a single chemical manufacturing process unit, then the applicability of this subpart and subpart G of this part shall be determined according to the provisions in paragraphs (i)(2)(i) through (i)(2)(iv) of this section.
- (i) If the greatest input to the distillation unit is from a chemical manufacturing process unit located on the same plant site, then the distillation unit shall be assigned to that chemical manufacturing process unit.
 - (ii) If the greatest input to the distillation unit is provided from a chemical manufacturing process unit that is not located on the same plant site, then the distillation unit shall be assigned to the chemical manufacturing process unit located at the same plant site that receives the greatest amount of material from the distillation unit.
 - (iii) If a distillation unit is shared among chemical manufacturing process units so that there is no single predominant use as described in paragraphs (i)(2)(i) and (i)(2)(ii) of this section, and at least one of those chemical manufacturing process units is subject to this subpart, the distillation unit shall be assigned to the chemical manufacturing process unit that is subject to this subpart. If more than one chemical manufacturing process unit is subject to this subpart, the owner or operator may assign the distillation unit to any of the chemical manufacturing process units subject to this subpart.
 - (iv) If the predominant use of a distillation unit varies from year to year, then the applicability of this subpart shall be determined according to the criteria in paragraphs (i)(2)(iv)(A) and (i)(2)(iv)(B), as applicable. This determination shall be included as part of an operating permit application or as otherwise specified by the permitting authority.
 - (A) For chemical manufacturing process units that produce one or more of the chemicals listed in table 1 of this subpart and meet the criteria in paragraphs (b)(2) and (b)(3) of this section, the applicability shall be based on the utilization that occurred during the year preceding April 22, 1994.
 - (B) For chemical manufacturing process units that produce one or more of the chemicals listed in paragraph (b)(1)(ii) of this section and meet the criteria in paragraphs (b)(2) and (b)(3) of this section, the applicability shall be based on the utilization that occurred during the year preceding May 12, 1998.
- (3) If the chemical manufacturing process unit to which the distillation unit is assigned is subject to this subpart, then each vent from the individual distillation unit shall be considered separately to determine whether it is a process vent (as defined in § 63.101 of this subpart). Each vent that is a process vent is part of the source to which this subpart applies.

- (4) If the distillation unit is part of one of the chemical manufacturing process units listed in paragraphs (i)(4)(i) through (i)(4)(iii) of this section, then each vent from the individual distillation unit shall be considered separately to determine whether it is a process vent (as defined in § 63.101 of this subpart). Each vent that is a process vent is part of the source to which this subpart applies:
 - (i) The Aromex unit that produces benzene, toluene, and xylene;
 - (ii) The unit that produces hexane; or
 - (iii) The unit that produces cyclohexane.
- (5) If a distillation unit that was dedicated to a single chemical manufacturing process unit, or that was part of a chemical manufacturing unit identified in paragraphs (i)(4)(i) through (i)(4)(iii) of this section, begins to serve another chemical manufacturing process unit, or if applicability was determined under the provisions of paragraphs (i)(2)(i) through (i)(2)(iii) of this section and there is a change so that the predominant use may reasonably have changed, the owner or operator shall reevaluate the applicability of this subpart to the distillation unit.
- (j) The provisions of subparts F, G, and H of this part do not apply to the processes specified in paragraphs (j)(1) through (j)(6) of this section. Subparts F, G, and H do not require processes specified in paragraphs (j)(1) through (j)(6) to comply with the provisions of subpart A of this part.
 - (1) Research and development facilities, regardless of whether the facilities are located at the same plant site as a chemical manufacturing process unit that is subject to the provisions of subparts F, G, or H of this part.
 - (2) Petroleum refining process units, regardless of whether the units supply feedstocks that include chemicals listed in table 1 of this subpart to chemical manufacturing process units that are subject to the provisions of subparts F, G, or H of this part.
 - (3) Ethylene production units, regardless of whether the units supply feedstocks that include chemicals listed in table 1 of this subpart to chemical manufacturing process units that are subject to the provisions of subpart F, G, or H of this part.
 - (4) Batch process vents within a chemical manufacturing process unit.
 - (5) Chemical manufacturing process units that are located in coke by-product recovery plants.
 - (6) Solvent reclamation, recovery, or recycling operations at hazardous waste TSD facilities requiring a permit under 40 CFR part 270 that are separate entities and not part of a SOCMI chemical manufacturing process unit.
- (k) Except as provided in paragraphs (l), (m), and (p) of this section, sources subject to subpart F, G, or H of this part are required to achieve compliance on or before the dates specified in paragraphs (k)(1) through (8) and (10) and (11) of this section.
 - (1)
 - (i) New sources that commence construction or reconstruction after December 31, 1992, but before August 27, 1996 shall be in compliance with this subpart F, subparts G and H of this part upon initial start-up or by April 22, 1994, whichever is later, as provided in § 63.6(b) of subpart A of this part, and further, where start-up occurs before January 17, 1997 shall also be in

compliance with this subpart F and subparts G and H of this part (as amended on January 17, 1997) by January 17, 1997, except that, with respect to all new sources that commenced construction or reconstruction after December 31, 1992, and before August 27, 1996:

- (A) Heat exchange systems and maintenance wastewater, that are part of a new source on which construction or reconstruction commenced after December 31, 1992, but before August 27, 1996, shall be in compliance with this subpart F no later than initial start-up or 180 days after January 17, 1997, whichever is later;
 - (B) Process wastewater streams and equipment subject to § 63.149, that are part of a new source on which construction or reconstruction commenced after December 31, 1992, but before August 27, 1996, shall be in compliance with this subpart F and subpart G of this part no later than initial start-up or 180 days after January 17, 1997, whichever is later; and
 - (ii) New sources that commence construction after August 26, 1996 shall be in compliance with this subpart F, subparts G and H of this part upon initial start-up or by January 17, 1997, whichever is later.
- (2) Existing sources shall be in compliance with this subpart F and subpart G of this part no later than the dates specified in paragraphs (k)(2)(i) and (k)(2)(ii) of this section, unless an extension has been granted by the Administrator as provided in § 63.151(a)(6) of subpart G of this part or granted by the permitting authority as provided in § 63.6(i) of subpart A of this part.
- (i) Process vents, storage vessels, and transfer racks at an existing source shall be in compliance with the applicable sections of this subpart and subpart G of this part no later than April 22, 1997.
 - (ii) Heat exchange systems and maintenance wastewater shall be in compliance with the applicable sections of this subpart, and equipment subject to § 63.149 and process wastewater streams shall be in compliance with the applicable sections of this subpart and subpart G of this part no later than April 22, 1999, except as provided in paragraphs (k)(2)(ii)(A) and (k)(2)(ii)(B) of this section.
 - (A) If a process wastewater stream or equipment subject to § 63.149 is subject to the control requirements of subpart G of this part due to the contribution of nitrobenzene to the total annual average concentration (as determined according to the procedures in § 63.144(b) of subpart G of this part), the wastewater stream shall be in compliance no later than January 18, 2000.
 - (B) If a process wastewater stream is used to generate credits in an emissions average in accordance with § 63.150 of subpart G of this part, the process wastewater stream shall be in compliance with the applicable sections of subpart G of this part no later than April 22, 1997.
- (3) Existing sources shall be in compliance with subpart H of this part no later than the dates specified in paragraphs (k)(3)(i) through (k)(3)(v) of this section, except as provided for in paragraphs (k)(4) through (k)(8) of this section, unless an extension has been granted by the Administrator as provided in § 63.182(a)(6) of this part or granted by the permitting authority as provided in § 63.6(i) of subpart A of this part. The group designation for each process unit is indicated in table 1 of this subpart.
- (i) Group I: October 24, 1994.
 - (ii) Group II: January 23, 1995.

- (iii) Group III: April 24, 1995.
- (iv) Group IV: July 24, 1995.
- (v) Group V: October 23, 1995.
- (4) Existing chemical manufacturing process units in Groups I and II as identified in table 1 of this subpart shall be in compliance with the requirements of § 63.164 no later than May 10, 1995, for any compressor meeting one or more of the criteria in paragraphs (k)(4)(i) through (iv) of this section, if the work can be accomplished without a process unit shutdown, as defined in § 63.101.
 - (i) The seal system will be replaced;
 - (ii) A barrier fluid system will be installed;
 - (iii) A new barrier fluid will be utilized which requires changes to the existing barrier fluid system; or
 - (iv) The compressor must be modified to permit connecting the compressor to a closed vent system.
- (5) Existing chemical manufacturing process units shall be in compliance with the requirements of § 63.164 in subpart H no later than 1 year after the applicable compliance date specified in paragraph (k)(3) of this section, for any compressor meeting the criteria in paragraphs (k)(5)(i) through (k)(5)(iv) of this section.
 - (i) The compressor meets one or more of the criteria specified in paragraphs (k)(4) (i) through (iv) of this section;
 - (ii) The work can be accomplished without a process unit shutdown as defined in § 63.101;
 - (iii) The additional time is actually necessary due to the unavailability of parts beyond the control of the owner or operator; and
 - (iv) The owner or operator submits a request to the appropriate EPA Regional Office at the addresses listed in § 63.13 of subpart A of this part no later than 45 days before the applicable compliance date in paragraph (k)(3) of this section, but in no event earlier than May 10, 1995. The request shall include the information specified in paragraphs (k)(5)(iv)(A) through (k)(5)(iv)(E) of this section. Unless the EPA Regional Office objects to the request within 30 days after receipt, the request shall be deemed approved.
 - (A) The name and address of the owner or operator and the address of the existing source if it differs from the address of the owner or operator;
 - (B) The name, address, and telephone number of a contact person for further information;
 - (C) An identification of the chemical manufacturing process unit, and of the specific equipment for which additional compliance time is required;
 - (D) The reason compliance can not reasonably be achieved by the applicable date specified in paragraphs (k)(3)(i) through (k)(3)(v) of this section; and
 - (E) The date by which the owner or operator expects to achieve compliance.
- (6)

- (i) If compliance with the compressor provisions of § 63.164 cannot reasonably be achieved without a process unit shutdown, as defined in § 63.101, the owner or operator shall achieve compliance no later than April 22, 1996, except as provided for in paragraph (k)(6)(ii) of this section. The owner or operator who elects to use this provision shall comply with the requirements of § 63.103(g).
 - (ii) If compliance with the compressor provisions of § 63.164 of subpart H of this part can not be achieved without replacing the compressor or recasting the distance piece, the owner or operator shall achieve compliance no later than April 22, 1997. The owner or operator who elects to use this provision shall also comply with the requirements of § 63.103(g) of this subpart.
- (7) Existing sources shall be in compliance with the provisions of § 63.170 of subpart H no later than April 22, 1997.
- (8) If an owner or operator of a chemical manufacturing process unit subject to the provisions of subparts F, G, and H of part 63 plans to implement pollution prevention measures to eliminate the use or production of HAP listed in table 2 of this subpart by October 23, 1995, the provisions of subpart H do not apply regardless of the compliance dates specified in paragraph (k)(3) of this section. The owner or operator who elects to use this provision shall comply with the requirements of § 63.103(h) of this subpart.
- (9) All terms in this subpart F or subpart G of this part that define a period of time for completion of required tasks (e.g., weekly, monthly, quarterly, annual), unless specified otherwise in the section or subsection that imposes the requirement, refer to the standard calendar periods.
 - (i) Notwithstanding time periods specified in this subpart F or subpart G of this part for completion of required tasks, such time periods may be changed by mutual agreement between the owner or operator and the Administrator, as specified in subpart A of this part (e.g., a period could begin on the compliance date or another date, rather than on the first day of the standard calendar period). For each time period that is changed by agreement, the revised period shall remain in effect until it is changed. A new request is not necessary for each recurring period.
 - (ii) Where the period specified for compliance is a standard calendar period, if the initial compliance date occurs after the beginning of the period, compliance shall be required according to the schedule specified in paragraphs (k)(9)(ii)(A) or (k)(9)(ii)(B) of this section, as appropriate.
 - (A) Compliance shall be required before the end of the standard calendar period within which the compliance deadline occurs, if there remain at least 3 days for tasks that must be performed weekly, at least 2 weeks for tasks that must be performed monthly, at least 1 month for tasks that must be performed each quarter, or at least 3 months for tasks that must be performed annually; or
 - (B) In all other cases, compliance shall be required before the end of the first full standard calendar period after the period within which the initial compliance deadline occurs.
 - (iii) In all instances where a provision of this subpart F or subpart G of this part requires completion of a task during each of multiple successive periods, an owner or operator may perform the required task at any time during the specified period, provided the task is conducted at a reasonable interval after completion of the task during the previous period.

- (10) All affected sources that commenced construction or reconstruction on or before April 25, 2023, must be in compliance with the requirements listed in paragraphs (k)(10)(i) through (viii) of this section upon initial startup or on July 15, 2027, whichever is later. All affected sources that commenced construction or reconstruction after April 25, 2023, must be in compliance with the requirements listed in paragraphs (k)(10)(i) through (viii) of this section upon initial startup, or on July 15, 2024, whichever is later.
- (i) The general requirements specified in paragraph (q)(4)(iii) of this section, §§ 63.102(e) and (f), 63.103(b)(1), (b)(3)(ii), and (c)(2)(iv), 63.107(j), 63.108, 63.110(h)(2) and (j)(1), and § 63.148(f)(4), (i)(3)(iii), and (j)(4).
 - (ii) For heat exchange systems, the requirements specified in § 63.104(a)(3) and (a)(4)(v) (g), (h), (i), (j), and (l).
 - (iii) For process vents, the requirements specified in §§ 63.113(a)(4) and (5), (k), and (l), 63.114(a)(5)(v) and (d)(3), 63.115(g), 63.116(g), 63.117(g), and 63.118(f)(7) and (n).
 - (iv) For storage vessels, the requirements specified in §§ 63.119(a)(6), 63.119(b)(5)(ix) through (xii), 63.119(b)(7), 63.119(f)(3)(iv), 63.120(d)(1)(iii), and footnotes b and c of tables 5 and 6 to subpart G of this part. For pressure vessels, the requirements specified in §§ 63.119(a)(7), 63.122(j), and 63.123(b).
 - (v) For transfer operations, the requirements specified in §§ 63.126(h)(1), 63.127(b)(4) and (d)(3), and 63.130(a)(2)(iv), (b)(3), and (d)(7).
 - (vi) For process wastewater, the requirements specified in §§ 63.132(a)(2)(i)(C) and (b)(3)(i)(C), 63.135(b)(4), 63.139(d)(5), and 63.145(a)(10).
 - (vii) For equipment leaks and pressure relief devices, the requirements specified in §§ 63.165(a) and (e), 63.170(b), 63.172(j)(4), 63.181(g)(3)(iii), and 63.182(d)(2)(xix).
 - (viii) The other notification, reports, and records requirements specified in § 63.152(c)(2)(ii)(F), table 3 to subpart G of this part, item 3 in column 3 for presence of flow and monthly inspections of sealed valves for all control devices, table 7 to subpart G of this part, item 3 in column 3 for presence of flow and monthly inspections of sealed valves for all control devices and vapor balancing systems, and table 20 to subpart G of this part, item (8)(iii).
- (11) All affected sources that commenced construction or reconstruction on or before April 25, 2023, must be in compliance with the ethylene oxide requirements in §§ 63.104(k), 63.109, 63.113(j), 63.119(a)(5), 63.120(d)(9), 63.124, 63.163(a)(1)(iii), (b)(2)(iv), (c)(4), and (e)(7), 63.168(b)(2)(iv) and (d)(5), 63.171(f), and 63.174(a)(3), (b)(3)(vi), (b)(5), and (g)(3), upon initial startup or on July 15, 2026, whichever is later. All affected sources that commenced construction or reconstruction after April 25, 2023, must be in compliance with the ethylene oxide requirements listed in §§ 63.104(k), 63.109, 63.113(j), 63.119(a)(5), 63.120(d)(9), § 63.124, 63.163(a)(1)(iii), (b)(2)(iv), (c)(4), and (e)(7), 63.168(b)(2)(iv) and (d)(5), § 63.171(f), and 63.174(a)(3), (b)(3)(vi), (b)(5), and (g)(3), upon initial startup or on July 15, 2024, whichever is later.
- (12) All affected sources that commenced construction or reconstruction on or before April 25, 2023, must commence fenceline monitoring according to the requirements in § 63.184 by no later than July 15, 2026, however requirements for corrective actions are not required until on or after July 15,

2027. All affected sources that commenced construction or reconstruction after April 25, 2023, must be in compliance with the fenceline monitoring requirements listed in § 63.184 upon initial startup, or on July 15, 2024, whichever is later.

(l)

- (1) If an additional chemical manufacturing process unit meeting the criteria specified in paragraph (b) of this section is added to a plant site that is a major source as defined in section 112(a) of the Act, the addition shall be subject to the requirements for a new source in subparts F, G, and H of this part if:
 - (i) It is an addition that meets the definition of construction in § 63.2 of subpart A of this part;
 - (ii)
 - (A) Such construction commenced after December 31, 1992 for chemical manufacturing process units that produce as a primary product one or more of the chemicals listed in table 1 of this subpart;
 - (B) Such construction commenced after August 22, 1997 for chemical manufacturing process units that produce as a primary product one or more of the chemicals listed in paragraph (b)(1)(ii) of this section; and
 - (iii) The addition has the potential to emit 10 tons per year or more of any HAP or 25 tons per year or more of any combination of HAP's, unless the Administrator establishes a lesser quantity.
- (2) If any change is made to a chemical manufacturing process unit subject to this subpart, the change shall be subject to the requirements of a new source in subparts F, G, and H of this part if:
 - (i) It is a change that meets the definition of reconstruction in § 63.2 of subpart A of this part; and
 - (ii)
 - (A) Such reconstruction commenced after December 31, 1992 for chemical manufacturing process units that produce as a primary product one or more of the chemicals listed in table 1 of this subpart; and
 - (B) Such construction commenced after August 22, 1997 for chemical manufacturing process units that produce as a primary product one or more of the chemicals listed in paragraph (b)(1)(ii) of this section.
- (3) If an additional chemical manufacturing process unit is added to a plant site or a change is made to a chemical manufacturing process unit and the addition or change is determined to be subject to the new source requirements according to paragraph (l)(1) or (l)(2) of this section:
 - (i) The new or reconstructed source shall be in compliance with the new source requirements of subparts F, G, and H of this part upon initial start-up of the new or reconstructed source or by April 22, 1994, whichever is later; and
 - (ii) The owner or operator of the new or reconstructed source shall comply with the reporting and recordkeeping requirements in subparts F, G, and H of this part that are applicable to new sources. The applicable reports include, but are not limited to:

- (A) The application for approval of construction or reconstruction which shall be submitted by the date specified in § 63.151(b)(2)(ii) of subpart G of this part, or an Initial Notification as specified in § 63.151(b)(2)(iii) of subpart G of this part;
 - (B) Changes that meet the criteria in § 63.151(j) of subpart G of this part, unless the information has been submitted in an operating permit application or amendment;
 - (C) The Notification of Compliance Status as required by § 63.152(b) of subpart G of this part for the new or reconstructed source;
 - (D) Periodic Reports and Other Reports as required by § 63.152(c) and (d) of subpart G of this part;
 - (E) Reports required by § 63.182 of subpart H of this part; and
 - (F) Reports and notifications required by sections of subpart A of this part that are applicable to subparts F, G, and H of this part, as identified in table 3 of this subpart.
- (4) If an additional chemical manufacturing process unit is added to a plant site, or if an emission point is added to an existing chemical manufacturing process unit, or if another deliberate operational process change creating an additional Group 1 emission point(s) is made to an existing chemical manufacturing process unit, or if a surge control vessel or bottoms receiver becomes subject to § 63.170 of subpart H, or if a compressor becomes subject to § 63.164 of subpart H, and if the addition or change is not subject to the new source requirements as determined according to paragraph (l)(1) or (l)(2) of this section, the requirements in paragraphs (l)(4)(i) through (l)(4)(iii) of this section shall apply. Examples of process changes include, but are not limited to, changes in production capacity, feedstock type, or catalyst type, or whenever there is replacement, removal, or addition of recovery equipment. For purposes of this paragraph and paragraph (m) of this section, process changes do not include: Process upsets, unintentional temporary process changes, and changes that are within the equipment configuration and operating conditions documented in the Notification of Compliance Status required by § 63.152(b) of subpart G of this part.
- (i) The added emission point(s) and any emission point(s) within the added or changed chemical manufacturing process unit are subject to the requirements of subparts F, G, and H of this part for an existing source;
 - (ii) The added emission point(s) and any emission point(s) within the added or changed chemical manufacturing process unit shall be in compliance with subparts F, G, and H of this part by the dates specified in paragraph (l)(4)(ii) (A) or (B) of this section, as applicable.
 - (A) If a chemical manufacturing process unit is added to a plant site or an emission point(s) is added to an existing chemical manufacturing process unit, the added emission point(s) shall be in compliance upon initial start-up of the added chemical manufacturing process unit or emission point(s) or by 3 years after April 22, 1994, whichever is later.
 - (B) If a deliberate operational process change to an existing chemical manufacturing process unit causes a Group 2 emission point to become a Group 1 emission point, if a surge control vessel or bottoms receiver becomes subject to § 63.170, or if a compressor becomes subject to § 63.164, the owner or operator shall be in compliance upon initial start-up or by 3 years after April 22, 1994, whichever is later, unless the owner or operator demonstrates to the Administrator that achieving compliance will take longer than making

the change. If this demonstration is made to the Administrator's satisfaction, the owner or operator shall follow the procedures in paragraphs (m)(1) through (3) of this section to establish a compliance date.

(iii) The owner or operator of a chemical manufacturing process unit or emission point that is added to a plant site and is subject to the requirements for existing sources shall comply with the reporting and recordkeeping requirements of subparts F, G, and H of this part that are applicable to existing sources, including, but not limited to, the reports listed in paragraphs (l)(4)(iii)(A) through (E) of this section. A change to an existing chemical manufacturing process unit shall be subject to the reporting requirements for existing sources, including but not limited to, the reports listed in paragraphs (l)(4)(iii)(A) through (E) of this section if the change meets the criteria specified in § 63.118(g), (h), (i), or (j) of subpart G of this part for process vents or the criteria in § 63.155(i) or (j) of subpart G of this part. The applicable reports include, but are not limited to:

- (A) Reports specified in § 63.151(i) and (j) of subpart G of this part, unless the information has been submitted in an operating permit application or amendment;
- (B) The Notification of Compliance Status as required by § 63.152(b) of subpart G of this part for the emission points that were added or changed;
- (C) Periodic Reports and other reports as required by § 63.152 (c) and (d) of subpart G of this part;
- (D) Reports required by § 63.182 of subpart H of this part; and
- (E) Reports and notifications required by sections of subpart A of this part that are applicable to subparts F, G, and H of this part, as identified in table 3 of this subpart.

(m) If a change that does not meet the criteria in paragraph (l)(4) of this section is made to a chemical manufacturing process unit subject to subparts F and G of this part, and the change causes a Group 2 emission point to become a Group 1 emission point (as defined in § 63.101), then the owner or operator shall comply with the requirements of subpart G of this part for the Group 1 emission point as expeditiously as practicable, but in no event later than 3 years after the emission point becomes Group 1.

- (1) The owner or operator shall submit to the Administrator for approval a compliance schedule, along with a justification for the schedule.
- (2) The compliance schedule shall be submitted with the report required in § 63.151(i)(2) of subpart G of this part for emission points included in an emissions average or § 63.151(j)(1) or subpart G of this part for emission points not in an emissions average, unless the compliance schedule has been submitted in an operating permit application or amendment.
- (3) The Administrator shall approve the compliance schedule or request changes within 120 calendar days of receipt of the compliance schedule and justification.

(n) **Rules stayed for reconsideration.** Notwithstanding any other provision of this subpart, the effectiveness of subpart F is stayed from October 24, 1994, to April 24, 1995, only as applied to those sources for which the owner or operator makes a representation in writing to the Administrator that the resolution of the area source definition issues could have an effect on the compliance status of the source with respect to subpart F.

- (o) **Sections stayed for reconsideration.** Notwithstanding any other provision of this subpart, the effectiveness of §§ 63.164 and 63.170 of subpart H is stayed from October 28, 1994, to April 24, 1995, only as applied to those sources subject to § 63.100(k)(3) (i) and (ii).
- (p) **Compliance dates for chemical manufacturing process units that produce crotonaldehyde or tetrahydrobenzaldehyde.** Notwithstanding the provisions of paragraph (k) of this section, chemical manufacturing process units that meet the criteria in paragraphs (b)(1)(ii), (b)(2), and (b)(3) of this section shall be in compliance with this subpart and subparts G and H of this part by the dates specified in paragraphs (p)(1) and (p)(2) of this section, as applicable.
- (1) If the source consists only of chemical manufacturing process units that produce as a primary product one or more of the chemicals listed in paragraph (b)(1)(ii) of this section, new sources shall comply by the date specified in paragraph (p)(1)(i) of this section and existing sources shall comply by the dates specified in paragraphs (p)(1)(ii) and (p)(1)(iii) of this section.
- (i) Upon initial start-up or May 12, 1998, whichever is later.
- (ii) This subpart and subpart G of this part by May 14, 2001, unless an extension has been granted by the Administrator as provided in § 63.151(a)(6) or granted by the permitting authority as provided in § 63.6(i) of subpart A of this part. When April 22, 1994 is referred to in this subpart and subpart G of this part, May 12, 1998 shall be used as the applicable date for that provision. When December 31, 1992 is referred to in this subpart and subpart G of this part, August 22, 1997 shall be used as the applicable date for that provision.
- (iii) Subpart H of this part by May 12, 1999, unless an extension has been granted by the Administrator as provided in § 63.151(a)(6) or granted by the permitting authority as provided in § 63.6(i) of subpart A of this part. When April 22, 1994 is referred to in subpart H of this part, May 12, 1998 shall be used as the applicable date for that provision. When December 31, 1992 is referred to in subpart H of this part, August 22, 1997 shall be used as the applicable date for that provision.
- (2) If the source consists of a combination of chemical manufacturing process units that produce as a primary product one or more of the chemicals listed in paragraphs (b)(1)(i) and (b)(1)(ii) of this section, new chemical manufacturing process units that meet the criteria in paragraph (b)(1)(ii) of this section shall comply by the date specified in paragraph (p)(1)(i) of this section and existing chemical manufacturing process units producing crotonaldehyde and/or tetrahydrobenzaldehyde shall comply by the dates specified in paragraphs (p)(1)(ii) and (p)(1)(iii) of this section.
- (q) If the owner or operator of a process vent, or of a gas stream transferred subject to § 63.113(i), is unable to comply with the provisions of §§ 63.113 through 63.118 by the applicable compliance date specified in paragraph (k), (l), or (m) of this section for the reasons stated in paragraph (q)(1), (3), or (5) of this section, the owner or operator shall comply with the applicable provisions in §§ 63.113 through 63.118 as expeditiously as practicable, but in no event later than the date approved by the Administrator pursuant to paragraph (q)(2), (4), or (6) of this section, respectively. For requests under paragraph (q)(1) or (3) of this section, the date approved by the Administrator may be earlier than, and shall not be later than, the later of January 22, 2004, or 3 years after the transferee's refusal to accept the stream for disposal. For requests submitted under paragraph (q)(5) of this section, the date approved by the Administrator may be earlier than, and shall not be later than, 3 years after the date of publication of the amendments to this subpart or to subpart G of this part which created the need for an extension of the compliance.

- (1) If the owner or operator has been sending a gas stream for disposal as described in § 63.113(i) prior to January 22, 2001, and the transferee does not submit a written certification as described in § 63.113(i)(2) and ceases to accept the gas stream for disposal, the owner or operator shall comply with paragraph (q)(2) of this section.
- (2)
 - (i) An owner or operator directed to comply with paragraph (q)(2) of this section shall submit to the Administrator for approval a compliance schedule, along with a justification for the schedule.
 - (ii) The compliance schedule and justification shall be submitted no later than 90 days after the transferee ceases to accept the gas stream for disposal.
 - (iii) The Administrator shall approve the compliance schedule or request changes within 120 days of receipt of the compliance schedule and justification.
- (3) Except as specified in paragraph (q)(4)(iii) of this section, if the owner or operator has been sending the gas stream for disposal as described in § 63.113(i) to a transferee who had submitted a written certification as described in § 63.113(i)(2), and the transferee revokes its written certification, the owner or operator shall comply with paragraphs (q)(4)(i) and (ii) of this section. During the period between the date when the owner or operator receives notice of revocation of the transferee's written certification and the compliance date established under paragraph (q)(4) of this section, the owner or operator shall implement, to the extent reasonably available, measures to prevent or minimize excess emissions to the extent practical. For purposes of this paragraph (q)(3), the term "excess emissions" means emissions in excess of those that would have occurred if the transferee had continued managing the gas stream in compliance with the requirements in §§ 63.113 through 63.118. The measures to be taken shall be identified in the applicable startup, shutdown, and malfunction plan. If the measures that can be reasonably taken will change over time, so that a more effective measure which could not reasonably be taken initially would be reasonable at a later date, the Administrator may require the more effective measure by a specified date (in addition to or instead of any other measures taken sooner or later than that date) as a condition of approval of the compliance schedule.
- (4)
 - (i) An owner or operator directed to comply with this paragraph (q)(4) shall submit to the Administrator for approval the documents specified in paragraphs (q)(4)(i)(A) through (E) of this section no later than 90 days after the owner or operator receives notice of revocation of the transferee's written certification.
 - (A) A request for determination of a compliance date.
 - (B) A justification for the request for determination of a compliance date.
 - (C) A compliance schedule.
 - (D) A justification for the compliance schedule.
 - (E) A description of the measures that will be taken to minimize excess emissions until the new compliance date, and the date when each measure will first be implemented. The owner or operator shall describe how, and to what extent, each measure will minimize excess emissions, and shall justify any period of time when measures are not in place.

- (ii) The Administrator shall approve or disapprove the request for determination of a compliance date and the compliance schedule, or request changes, within 120 days after receipt of the documents specified in paragraphs (q)(4)(i)(A) through (E) of this section. Upon approving the request for determination and compliance schedule, the Administrator shall specify a reasonable compliance date consistent with the introductory text in paragraph (q) of this section.
 - (iii) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), paragraph (q)(3) of this section no longer applies.
- (5) If the owner's or operator's inability to meet otherwise applicable compliance deadlines is due to amendments of this subpart or of subpart G of this part published on or after January 22, 2001, and neither condition specified in paragraph (q)(1) or (3) of this section is applicable, the owner or operator shall comply with paragraph (q)(6) of this section.
- (6)
- (i) An owner or operator directed to comply with this paragraph (6)(i) shall submit to the Administrator for approval, a request for determination of a compliance date, a compliance schedule, a justification for the determination of a compliance date, and a justification for the compliance schedule.
 - (ii) The documents required to be submitted under paragraph (q)(6)(i) of this section shall be submitted no later than 120 days after publication of the amendments of this subpart or of subpart G of this part which necessitate the request for an extension.
 - (iii) The Administrator shall approve or disapprove the request for a determination of a compliance date, or request changes, within 120 days after receipt of the request for determination of a compliance date, the compliance schedule, and the two justifications. If the request for determination of a compliance date is disapproved, the compliance schedule is disapproved and the owner or operator shall comply by the applicable date specified in paragraph (k), (l), or (m) of this section. If the request for the determination of a compliance date is approved, the Administrator shall specify, at the time of approval, a reasonable compliance date consistent with the introductory text in paragraph (q) of this section.

[59 FR 19454, Apr. 22, 1994, as amended at 59 FR 53360, Oct. 24, 1994; 59 FR 54132, Oct. 28, 1994; 60 FR 5321, Jan. 27, 1995; 60 FR 18023, 18028, Apr. 10, 1995; 60 FR 63626, Dec. 12, 1995; 61 FR 7718, Feb. 29, 1996; 61 FR 64574, Dec. 5, 1996; 62 FR 2729, Jan. 17, 1997; 63 FR 26081, May 12, 1998; 64 FR 20191, Apr. 26, 1999; 66 FR 6927, Jan. 22, 2001; 89 FR 43153, May 16, 2024]

§ 63.101 Definitions.

- (a) The following terms as used in subparts F, G, and H of this part shall have the meaning given them in subpart A of this part: Act, actual emissions, Administrator, affected source, approved permit program, commenced, compliance date, construction, continuous monitoring system, continuous parameter monitoring system, effective date, emission standard, emissions averaging, EPA, equivalent emission limitation, existing source, Federally enforceable, fixed capital cost, hazardous air pollutant, lesser quantity, major source, malfunction, new source, owner or operator, performance evaluation, performance test, permit program, permitting authority, reconstruction, relevant standard, responsible official, run, standard conditions, State, and stationary source.

- (b) All other terms used in this subpart and subparts G and H of this part shall have the meaning given them in the Act and in this section. If the same term is defined in subpart A of this part and in this section, it shall have the meaning given in this section for purposes of subparts F, G, and H of this part.

Air oxidation reactor means a device or vessel in which air, or a combination of air and oxygen, is used as an oxygen source in combination with one or more organic reactants to produce one or more organic compounds. Air oxidation reactor includes the product separator and any associated vacuum pump or steam jet.

Ancillary activities means boilers and incinerators (not used to comply with the emission limits of subparts F, G, and H of this part), chillers and refrigeration systems, and other equipment and activities that are not directly involved (i.e., they operate within a closed system and materials are not combined with process fluids) in the processing of raw materials or the manufacturing of a product or isolated intermediate.

Annual average concentration, as used in the wastewater provisions, means the flow-weighted annual average concentration, as determined according to the procedures specified in § 63.144(b).

Annual average flow rate, as used in the wastewater provisions, means the annual average flow rate, as determined according to the procedures specified in § 63.144(c).

Automated monitoring and recording system means any means of measuring values of monitored parameters and creating a hard copy or computer record of the measured values that does not require manual reading of monitoring instruments and manual transcription of data values. Automated monitoring and recording systems include, but are not limited to, computerized systems and strip charts.

Batch operation means a noncontinuous operation in which a discrete quantity or batch of feed is charged into a unit operation within a chemical manufacturing process unit and processed at one time. Batch operation includes noncontinuous operations in which the equipment is fed intermittently or discontinuously. Addition of raw material and withdrawal of product do not occur simultaneously in a batch operation. After each batch operation, the equipment is generally emptied before a fresh batch is started.

Batch process means a process in which the equipment is fed intermittently or discontinuously. Processing then occurs in this equipment after which the equipment is generally emptied. Examples of industries that use batch processes include pharmaceutical production and pesticide production.

Batch process vent means gaseous venting to the atmosphere from a batch operation.

Batch product-process equipment train means the collection of equipment (e.g., connectors, reactors, valves, pumps, etc.) configured to produce a specific product or intermediate by a batch process.

Bench-scale batch process means a batch process (other than a research and development facility) that is operated on a small scale, such as one capable of being located on a laboratory bench top. This bench-scale equipment will typically include reagent feed vessels, a small reactor and associated product separator, recovery and holding equipment. These processes are only capable of producing small quantities of product.

Boiler means any enclosed combustion device that extracts useful energy in the form of steam and is not an incinerator. Boiler also means any industrial furnace as defined in 40 CFR 260.10.

Bottoms receiver means a tank that collects distillation bottoms before the stream is sent for storage or for further downstream processing.

Breakthrough means the time when the level of HAP or TOC, measured at the outlet of the first bed, has been detected is at the highest concentration allowed to be discharged from the adsorber system and indicates that the adsorber bed should be replaced.

By compound means by individual stream components, not carbon equivalents.

By-product means a chemical that is produced coincidentally during the production of another chemical.

Car-seal means a seal that is placed on a device that is used to change the position of a valve (e.g., from opened to closed) in such a way that the position of the valve cannot be changed without breaking the seal.

Chemical manufacturing process unit or CMPU means the equipment assembled and connected by pipes or ducts to process raw materials and to manufacture an intended product. A chemical manufacturing process unit consists of more than one unit operation. For the purpose of this subpart, chemical manufacturing process unit includes air oxidation reactors and their associated product separators and recovery devices; reactors and their associated product separators and recovery devices; distillation units and their associated distillate receivers and recovery devices; associated unit operations; associated recovery devices; and any feed, intermediate and product storage vessels and pressure vessels, product transfer racks, and connected ducts and piping. A chemical manufacturing process unit includes pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, instrumentation systems, and control devices or systems. A chemical manufacturing process unit is identified by its primary product. Ancillary activities are not considered a process or part of any process. Quality assurance/quality control laboratories are not considered part of any process.

Closed biological treatment process means a tank or surface impoundment where biological treatment occurs and air emissions from the treatment process are routed to either a control device by means of a closed vent system or to a fuel gas system by means of hard-piping. The tank or surface impoundment has a fixed roof, as defined in this section, or a floating flexible membrane cover that meets the requirements specified in § 63.134.

Closed-loop system means an enclosed system that returns process fluid to the process and is not vented to the atmosphere except through a closed-vent system.

Closed-purge system means a system or combination of system and portable containers, to capture purged liquids. Containers must be covered or closed when not being filled or emptied.

Closed vent system means a system that is not open to the atmosphere and is composed of piping, ductwork, connections, and, if necessary, flow inducing devices that transport gas or vapor from an emission point to a control device.

Combustion device means an individual unit of equipment, such as a flare, incinerator, process heater, or boiler, used for the combustion of organic hazardous air pollutant emissions.

Compliance date means the dates specified in § 63.100(k) or (l)(3) for process units subject to subpart F of this part; the dates specified in § 63.190(e) for process units subject to subpart I of this part. For sources subject to other subparts in this part that reference this subpart, compliance date will be defined in those subparts. However, the compliance date for § 63.170 shall be no later than 3 years after the effective date of those subparts unless otherwise specified in such other subparts.

Connector means flanged, screwed, or other joined fittings used to connect two pipe lines or a pipe line and a piece of equipment. A common connector is a flange. Joined fittings welded completely around the circumference of the interface are not considered connectors for the purpose of this regulation. For the purpose of reporting and recordkeeping, connector means joined fittings that are not inaccessible, glass, or glass-lined as described in § 63.174(h).

Container, as used in the wastewater provisions, means any portable waste management unit that has a capacity greater than or equal to 0.1 m³ in which a material is stored, transported, treated, or otherwise handled. Examples of containers are drums, barrels, tank trucks, barges, dumpsters, tank cars, dump trucks, and ships.

Continuous record means documentation, either in hard copy or computer readable form, of data values measured at least once every 15 minutes and recorded at the frequency specified in § 63.152(f) or (g).

Continuous recorder means a data recording device that either records an instantaneous data value at least once every 15 minutes or records 15-minute or more frequent block average values.

Continuous seal means a seal that forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the floating roof. A continuous seal may be a vapor-mounted, liquid-mounted, or metallic shoe seal. A continuous seal may be constructed of fastened segments so as to form a continuous seal.

Continuous vapor processing system means a vapor processing system that treats total organic compound vapors collected from tank trucks or railcars on a demand basis without intermediate accumulation in a vapor holder.

Control device means any combustion device, recovery device, or recapture device. Such equipment includes, but is not limited to, absorbers, carbon adsorbers, condensers, incinerators, flares, boilers, and process heaters. For process vents, recapture devices are considered control devices but recovery devices are not considered control devices, and for a steam stripper, a primary condenser is not considered a control device.

Co-product means a chemical that is produced during the production of another chemical.

Cover, as used in the wastewater provisions, means a device or system which is placed on or over a waste management unit containing wastewater or residuals so that the entire surface area is enclosed to minimize air emissions. A cover may have openings necessary for operation, inspection, and maintenance of the waste management unit such as access hatches, sampling ports, and gauge wells provided that each opening is closed when not in use. Examples of covers include a fixed roof installed on a wastewater tank, a lid installed on a container, and an air-supported enclosure installed over a waste management unit.

Dioxins and furans means total tetra-through octachlorinated dibenzo-p-dioxins and dibenzofurans.

Distillate receiver means overhead receivers, overhead accumulators, reflux drums, and condenser(s) including ejector-condenser(s) associated with a distillation unit.

Distillation unit means a device or vessel in which one or more feed streams are separated into two or more exit streams, each exit stream having component concentrations different from those in the feed stream(s). The separation is achieved by the redistribution of the components between the

liquid and the vapor phases by vaporization and condensation as they approach equilibrium within the distillation unit. Distillation unit includes the distillate receiver, reboiler, and any associated vacuum pump or steam jet.

Double block and bleed system means two block valves connected in series with a bleed valve or line that can vent the line between the two block valves.

Duct work means a conveyance system such as those commonly used for heating and ventilation systems. It is often made of sheet metal and often has sections connected by screws or crimping. Hard-piping is not ductwork.

Emission point means an individual process vent, storage vessel, transfer rack, wastewater stream, or equipment leak.

Empty or emptying means the removal of the stored liquid from a storage vessel. Storage vessels where stored liquid is left on the walls, as bottom clingage, or in pools due to bottom irregularities are considered empty. Lowering of the stored liquid level, so that the floating roof is resting on its legs, as necessitated by normal vessel operation (for example, when changing stored material or when transferring material out of the vessel for shipment) is not considered emptying.

Enhanced biological treatment system or enhanced biological treatment process means an aerated, thoroughly mixed treatment unit(s) that contains biomass suspended in water followed by a clarifier that removes biomass from the treated water and recycles recovered biomass to the aeration unit. The mixed liquor volatile suspended solids (biomass) is greater than 1 kilogram per cubic meter throughout each aeration unit. The biomass is suspended and aerated in the water of the aeration unit(s) by either submerged air flow or mechanical agitation. A thoroughly mixed treatment unit is a unit that is designed and operated to approach or achieve uniform biomass distribution and organic compound concentration throughout the aeration unit by quickly dispersing the recycled biomass and the wastewater entering the unit.

Equipment leak means emissions of organic hazardous air pollutants from a connector, pump, compressor, agitator, pressure relief device, sampling connection system, open-ended valve or line, valve, surge control vessel, bottoms receiver, or instrumentation system in organic hazardous air pollutant service as defined in this section.

Equipment means each pump, compressor, agitator, pressure relief device, sampling connection system, open-ended valve or line, valve, connector, surge control vessel, bottoms receiver, and instrumentation system in organic hazardous air pollutant service; and any control devices or systems required by this subpart.

Ethylene production unit means a chemical manufacturing process unit in which ethylene and/or propylene are produced by separation from petroleum refining process streams or by subjecting hydrocarbons to high temperatures in the presence of steam. The ethylene process unit includes the separation of ethylene and/or propylene from associated streams such as a C₄ product, pyrolysis gasoline, and pyrolysis fuel oil. The ethylene process does not include the manufacture of SOCM chemicals such as the production of butadiene from the C₄ stream and aromatics from pyrolysis gasoline.

External floating roof means a pontoon-type or double-deck-type cover that rests on the liquid surface in a storage vessel or waste management unit with no fixed roof.

Fill or filling means the introduction of organic hazardous air pollutant into a storage vessel or the introduction of a wastewater stream or residual into a waste management unit, but not necessarily to complete capacity.

First attempt at repair means to take action for the purpose of stopping or reducing leakage of organic material to the atmosphere, followed by monitoring as specified in § 63.180(b) and (c), as appropriate, to verify whether the leak is repaired, unless the owner or operator determines by other means that the leak is not repaired.

Fixed roof means a cover that is mounted on a waste management unit or storage vessel in a stationary manner and that does not move with fluctuations in liquid level.

Flame zone means the portion of the combustion chamber in a boiler or process heater occupied by the flame envelope.

Flexible operation unit means a chemical manufacturing process unit that manufactures different chemical products periodically by alternating raw materials or operating conditions. These units are also referred to as campaign plants or blocked operations.

Floating roof means a cover consisting of a double deck, pontoon single deck, internal floating cover or covered floating roof, which rests upon and is supported by the liquid being contained, and is equipped with a closure seal or seals to close the space between the roof edge and waste management unit or storage vessel wall.

Flow indicator means a device which indicates whether gas flow is, or whether the valve position would allow gas flow to be, present in a line.

Fuel gas means gases that are combusted to derive useful work or heat.

Fuel gas system means the offsite and onsite piping and flow and pressure control system that gathers gaseous stream(s) generated by onsite operations, may blend them with other sources of gas, and transports the gaseous stream for use as fuel gas in combustion devices or in in-process combustion equipment such as furnaces and gas turbines either singly or in combination.

Group 1 process vent means, before July 15, 2027, a process vent for which the vent stream flow rate is greater than or equal to 0.005 standard cubic meter per minute, the total organic HAP concentration is greater than or equal to 50 parts per million by volume, and the total resource effectiveness index value, calculated according to § 63.115, is less than or equal to 1.0. On and after July 15, 2027, Group 1 process vent means a process vent that emits greater than or equal to 1.0 pound per hour of total organic HAP.

Group 1 storage vessel means a storage vessel that meets the criteria for design storage capacity and stored-liquid maximum true vapor pressure specified in table 5 to subpart G of this part for storage vessels at existing sources, and in table 6 to subpart G of this part for storage vessels at new sources.

Group 1 transfer rack means a transfer rack that annually loads greater than or equal to 0.65 million liter of liquid products that contain organic hazardous air pollutants with a rack weighted average vapor pressure greater than or equal to 10.3 kilopascals.

Group 1 wastewater stream means a wastewater stream consisting of process wastewater as defined in this section at an existing or new source that meets the criteria for Group 1 status in § 63.132(c) for table 9 compounds and/or a wastewater stream consisting of process wastewater at a new source that meets the criteria for Group 1 status in § 63.132(d) for table 8 compounds.

Group 2 process vent means, before July 15, 2027, a process vent for which the vent stream flow rate is less than 0.005 standard cubic meter per minute, the total organic HAP concentration is less than 50 parts per million by volume or the total resource effectiveness index value, calculated according to § 63.115, is greater than 1.0. On and after July 15, 2027, Group 2 process vent means a process vent that emits less than 1.0 pound per hour of total organic HAP.

Group 2 storage vessel means a storage vessel that does not meet the definition of a Group 1 storage vessel.

Group 2 transfer rack means a transfer rack that does not meet the definition of Group 1 transfer rack.

Group 2 wastewater stream means any process wastewater stream that does not meet the definition of a Group 1 wastewater stream.

Halogenated vent stream or halogenated stream means a vent stream from a process vent or transfer operation determined to have a mass emission rate of halogen atoms contained in organic compounds of 0.45 kilograms per hour or greater determined by the procedures presented in § 63.115(d)(2)(v).

Halogens and hydrogen halides means hydrogen chloride (HCl), chlorine (Cl₂), hydrogen bromide (HBr), bromine (Br₂), and hydrogen fluoride (HF).

Hard-piping means pipe or tubing that is manufactured and properly installed using good engineering judgment and standards such as American National Standards Institute (ANSI) B31-3 (see § 63.14 for ANSI contact information).

Heat exchange system means a device or collection of devices used to transfer heat from process fluids to water without intentional direct contact of the process fluid with the water (i.e., non-contact heat exchanger) and to transport and/or cool the water in a closed-loop recirculation system (cooling tower system) or a once-through system (e.g., river or pond water). For closed-loop recirculation systems, the heat exchange system consists of a cooling tower, all CMPU heat exchangers that are in organic HAP service, as defined in this subpart, serviced by that cooling tower, and all water lines to and from these process unit heat exchangers. For once-through systems, the heat exchange system consists of all heat exchangers that are in organic HAP service, as defined in this subpart, servicing an individual CMPU and all water lines to and from these heat exchangers. Sample coolers or pump seal coolers are not considered heat exchangers for the purpose of this definition and are not part of the heat exchange system. Intentional direct contact with process fluids results in the formation of a wastewater.

Impurity means a substance that is produced coincidentally with the primary product or is present in a raw material. An impurity does not serve a useful purpose in the production or use of the primary product and is not isolated.

In ethylene oxide service means the following:

- (i) For equipment leaks, any equipment that contains or contacts a fluid (liquid or gas) that is at least 0.1 percent by weight of ethylene oxide. If information exists that suggests ethylene oxide could be present in equipment, the equipment is considered to be "in ethylene oxide service"

unless the procedures specified in § 63.109 are performed to demonstrate that the equipment does not meet the definition of being "in ethylene oxide service". Examples of information that could suggest ethylene oxide could be present in equipment, include calculations based on safety data sheets, material balances, process stoichiometry, or previous test results provided the results are still relevant to the current operating conditions.

- (ii) For heat exchange systems, any heat exchange system in a process that cools process fluids (liquid or gas) that are 0.1 percent or greater by weight of ethylene oxide. If knowledge exists that suggests ethylene oxide could be present in a heat exchange system, then the heat exchange system is considered to be "in ethylene oxide service" unless the procedures specified in § 63.109 are performed to demonstrate that the heat exchange system does not meet the definition of being "in ethylene oxide service". Examples of information that could suggest ethylene oxide could be present in a heat exchange system, include calculations based on safety data sheets, material balances, process stoichiometry, or previous test results provided the results are still relevant to the current operating conditions.
- (iii) For process vents, each Group 1 and Group 2 process vent in a process that, when uncontrolled, contains a concentration of greater than or equal to 1 ppmv undiluted ethylene oxide, and when combined, the sum of all these process vents within the process would emit uncontrolled, ethylene oxide emissions greater than or equal to 5 lb/yr (2.27 kg/yr). If information exists that suggests ethylene oxide could be present in a Group 1 or Group 2 process vent, then the Group 1 or Group 2 process vent is considered to be "in ethylene oxide service" unless an analysis is performed as specified in § 63.109 to demonstrate that the Group 1 or Group 2 process vent does not meet the definition of being "in ethylene oxide service". Examples of information that could suggest ethylene oxide could be present in a Group 1 or Group 2 process vent, include calculations based on safety data sheets, material balances, process stoichiometry, or previous test results provided the results are still relevant to the current operating conditions.
- (iv) For storage vessels, storage vessels of any capacity and vapor pressure storing a liquid that is at least 0.1 percent by weight of ethylene oxide. If knowledge exists that suggests ethylene oxide could be present in a storage vessel, then the storage vessel is considered to be "in ethylene oxide service" unless the procedures specified in § 63.109 are performed to demonstrate that the storage vessel does not meet the definition of being "in ethylene oxide service". The exemption for "vessels storing organic liquids that contain organic hazardous air pollutants only as impurities" listed in the definition of "storage vessel" in this section does not apply for storage vessels that may be in ethylene oxide service. Examples of information that could suggest ethylene oxide could be present in a storage vessel, include calculations based on safety data sheets, material balances, process stoichiometry, or previous test results provided the results are still relevant to the current operating conditions.
- (v) For wastewater streams, any wastewater stream that contains total annual average concentration of ethylene oxide greater than or equal to 1 parts per million by weight at any flow rate. If knowledge exists that suggests ethylene oxide could be present in a wastewater stream, then the wastewater stream is considered to be "in ethylene oxide service" unless sampling and analysis is performed as specified in § 63.109 to demonstrate that the wastewater stream does not meet the definition of being "in ethylene oxide service". Examples of information that could suggest ethylene oxide could be present in a wastewater stream, include calculations based on safety data sheets, material balances, process stoichiometry, or previous test results provided the results are still relevant to the current operating conditions.

In food/medical service means that a piece of equipment in organic hazardous air pollutant service contacts a process stream used to manufacture a Food and Drug Administration regulated product where leakage of a barrier fluid into the process stream would cause any of the following:

- (i) A dilution of product quality so that the product would not meet written specifications,
- (ii) An exothermic reaction which is a safety hazard,
- (iii) The intended reaction to be slowed down or stopped, or
- (iv) An undesired side reaction to occur.

In gas/vapor service means that a piece of equipment in organic hazardous air pollutant service contains a gas or vapor at operating conditions.

In heavy liquid service means that a piece of equipment in organic hazardous air pollutant service is not in gas/vapor service or in light liquid service.

In light liquid service means that a piece of equipment in organic hazardous air pollutant service contains a liquid that meets the following conditions:

- (i) The vapor pressure of one or more of the organic compounds is greater than 0.3 kilopascals at 20 °C,
- (ii) The total concentration of the pure organic compounds constituents having a vapor pressure greater than 0.3 kilopascals at 20 °C is equal to or greater than 20 percent by weight of the total process stream, and
- (iii) The fluid is a liquid at operating conditions.

Note 1 to *In light liquid service*: Vapor pressures may be determined by the methods described in § 60.485(e)(1) of this chapter.

In liquid service means that a piece of equipment in organic hazardous air pollutant service is not in gas/vapor service.

In organic hazardous air pollutant or in organic HAP service means that a piece of equipment or heat exchange system either contains or contacts a fluid (liquid or gas) that is at least 5 percent by weight of total organic HAP's as determined according to the provisions of § 63.180(d). The provisions of § 63.180(d) also specify how to determine that a piece of equipment is not in organic HAP service. For purposes of the definition of "heat exchange system", the term "equipment" in § 63.180(d) includes heat exchange systems.

In vacuum service means that equipment is operating at an internal pressure which is at least 5 kilopascals below ambient pressure.

In volatile organic compound or in VOC service means, for the purposes of subpart H of this part, that:

- (i) The piece of equipment contains or contacts a process fluid that is at least 10 percent VOC by weight (see § 60.2 of this chapter for the definition of VOC, and § 60.485(d) of this chapter to determine whether a piece of equipment is not in VOC service); and
- (ii) The piece of equipment is not in heavy liquid service as defined in § 60.481 of this chapter.

Incinerator means an enclosed combustion device that is used for destroying organic compounds.

Auxiliary fuel may be used to heat waste gas to combustion temperatures. Any energy recovery section present is not physically formed into one manufactured or assembled unit with the combustion section; rather, the energy recovery section is a separate section following the combustion section and the two are joined by ducts or connections carrying flue gas. The above energy recovery section limitation does not apply to an energy recovery section used solely to preheat the incoming vent stream or combustion air.

Individual drain system means the stationary system used to convey wastewater streams or residuals to a waste management unit or to discharge or disposal. The term includes hard-piping, all process drains and junction boxes, together with their associated sewer lines and other junction boxes, manholes, sumps, and lift stations, conveying wastewater streams or residuals. A segregated stormwater sewer system, which is a drain and collection system designed and operated for the sole purpose of collecting rainfall runoff at a facility, and which is segregated from all other individual drain systems, is excluded from this definition.

Initial start-up means the first time a new or reconstructed source begins production, or, for equipment added or changed as described in § 63.100(l) or (m), the first time the equipment is put into operation. Initial start-up does not include operation solely for testing equipment. For purposes of subpart G of this part, initial start-up does not include subsequent start-ups (as defined in this section) of chemical manufacturing process units following malfunctions or shutdowns or following changes in product for flexible operation units or following recharging of equipment in batch operation. For purposes of subpart H of this part, initial start-up does not include subsequent start-ups (as defined in this section) of process units (as defined in § this section) following malfunctions or process unit shutdowns.

In-situ sampling systems means nonextractive samplers or in-line samplers.

Instrumentation system means a group of equipment components used to condition and convey a sample of the process fluid to analyzers and instruments for the purpose of determining process operating conditions (e.g., composition, pressure, flow, etc.). Valves and connectors are the predominant type of equipment used in instrumentation systems; however, other types of equipment may also be included in these systems. Only valves nominally 0.5 inches and smaller, and connectors nominally 0.75 inches and smaller in diameter are considered instrumentation systems for the purposes of subpart H of this part. Valves greater than nominally 0.5 inches and connectors greater than nominally 0.75 inches associated with instrumentation systems are not considered part of instrumentation systems and must be monitored individually.

Intermittent vapor processing system means a vapor processing system that employs an intermediate vapor holder to accumulate total organic compound vapors collected from tank trucks or railcars, and treats the accumulated vapors only during automatically controlled cycles.

Internal floating roof means a cover that rests or floats on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel or waste management unit that has a permanently affixed roof.

Junction box means a manhole or access point to a wastewater sewer line or a lift station.

Liquid-mounted seal means a foam- or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel or waste management unit and the floating roof. The seal is mounted continuously around the circumference of the vessel or unit.

Liquids dripping means any visible leakage from the seal including dripping, spraying, misting, clouding, and ice formation. Indications of liquid dripping include puddling or new stains that are indicative of an existing evaporated drip.

Loading cycle means the time period from the beginning of filling a tank truck or railcar until flow to the control device ceases, as measured by the flow indicator.

Loading rack means a single system used to fill tank trucks and railcars at a single geographic site. Loading equipment and operations that are physically separate (i.e., do not share common piping, valves, and other equipment) are considered to be separate loading racks.

Maintenance wastewater means wastewater generated by the draining of process fluid from components in the chemical manufacturing process unit into an individual drain system prior to or during maintenance activities. Maintenance wastewater can be generated during planned and unplanned shutdowns and during periods not associated with a shutdown. Examples of activities that can generate maintenance wastewaters include descaling of heat exchanger tubing bundles, cleaning of distillation column traps, draining of low legs and high point bleeds, draining of pumps into an individual drain system, and draining of portions of the chemical manufacturing process unit for repair.

Maximum true vapor pressure means the equilibrium partial pressure exerted by the total organic HAP's in the stored or transferred liquid at the temperature equal to the highest calendar-month average of the liquid storage or transfer temperature for liquids stored or transferred above or below the ambient temperature or at the local maximum monthly average temperature as reported by the National Weather Service for liquids stored or transferred at the ambient temperature, as determined:

- (i) In accordance with methods described in API MPMS 19.2 (incorporated by reference as specified in § 63.14); or
- (ii) As obtained from standard reference texts; or
- (iii) As determined by the ASTM D2879-23 (incorporated by reference as specified in § 63.14); or
- (iv) Any other method approved by the Administrator.

Metallic shoe seal or mechanical shoe seal means metal sheets that are held vertically against the wall of the storage vessel by springs, weighted levers, or other mechanisms and connected to the floating roof by braces or other means. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

Non-automated monitoring and recording system means manual reading of values measured by monitoring instruments and manual transcription of those values to create a record. Non-automated systems do not include strip charts.

Nonrepairable means that it is technically infeasible to repair a piece of equipment from which a leak has been detected without a process unit shutdown.

Oil-water separator or organic-water separator means a waste management unit, generally a tank used to separate oil or organics from water. An oil-water or organic-water separator consists of not only the separation unit but also the forebay and other separator basins, skimmers, weirs, grit chambers, sludge hoppers, and bar screens that are located directly after the individual drain system and prior to additional treatment units such as an air flotation unit, clarifier, or biological treatment unit.

Examples of an oil-water or organic-water separator include, but are not limited to, an American Petroleum Institute separator, parallel-plate interceptor, and corrugated-plate interceptor with the associated ancillary equipment.

On-site or On site means, with respect to records required to be maintained by this subpart, that the records are stored at a location within a major source which encompasses the affected source. On-site includes, but is not limited to, storage at the chemical manufacturing process unit to which the records pertain, or storage in central files elsewhere at the major source.

Open biological treatment process means a biological treatment process that is not a closed biological treatment process as defined in this section.

Open-ended valve or line means any valve, except pressure relief valves, having one side of the valve seat in contact with process fluid and one side open to atmosphere, either directly or through open piping.

Operating permit means a permit required by 40 CFR part 70 or 71.

Organic hazardous air pollutant or organic HAP means one of the chemicals listed in table 2 of this subpart.

Organic monitoring device means a unit of equipment used to indicate the concentration level of organic compounds exiting a recovery device based on a detection principle such as infra-red, photoionization, or thermal conductivity.

Petroleum refining process, also referred to as a *petroleum refining process unit*, means a process that for the purpose of producing transportation fuels (such as gasoline and diesel fuels), heating fuels (such as fuel gas, distillate, and residual fuel oils), or lubricants separates petroleum or separates, cracks, or reforms unfinished derivatives. Examples of such units include, but are not limited to, alkylation units, catalytic hydrotreating, catalytic hydrorefining, catalytic hydrocracking, catalytic reforming, catalytic cracking, crude distillation, and thermal processes.

Plant site means all contiguous or adjoining property that is under common control, including properties that are separated only by a road or other public right-of-way. Common control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, or any combination thereof.

Point of determination means each point where process wastewater exits the chemical manufacturing process unit. This subpart and subpart G of this part allows point of determination of the characteristics of a wastewater stream:

- (i) At the point of determination or
- (ii) Downstream of the point of determination if corrections are made for changes in flow rate and annual average concentration of table 8 or table 9 compounds as determined in § 63.144. Such changes include losses by air emissions; reduction of annual average concentration or changes in flow rate by mixing with other water or wastewater streams; and reduction in flow rate or annual average concentration by treating or otherwise handling the wastewater stream to remove or destroy hazardous air pollutants.

Point of transfer means:

- (i) If the transfer is to an off-site location for control, the point where the conveyance crosses the property line; or

- (ii) If the transfer is to an on-site location not owned or operated by the owner or operator of the source, the point where the conveyance enters the operation or equipment of the transferee.

Polymerizing monomer means a molecule or compound usually containing carbon and of relatively low molecular weight and simple structure (e.g., hydrogen cyanide, acrylonitrile, styrene), which is capable of conversion to polymers, synthetic resins, or elastomers by combination with itself due to heat generation caused by a pump mechanical seal surface, contamination by a seal fluid (e.g., organic peroxides or chemicals that will form organic peroxides), or a combination of both with the resultant polymer buildup causing rapid mechanical seal failure.

Pressure release means the emission of materials resulting from the system pressure being greater than the set pressure of the pressure relief device. This release can be one release or a series of releases over a short time period.

Pressure relief device or valve means a valve, rupture disk, or similar device used only to release an unplanned, nonroutine discharge of gas from process equipment in order to avoid safety hazards or equipment damage. A pressure relief device discharge can result from an operator error, a malfunction such as a power failure or equipment failure, or other unexpected cause. Such devices include conventional, spring-actuated relief valves, balanced bellows relief valves, pilot-operated relief valves, rupture disks, and breaking, buckling, or shearing pin devices. Devices that are actuated either by a pressure of less than or equal to 2.5 pounds per square inch gauge or by a vacuum are not pressure relief devices.

Pressure-assisted multi-point flare means a flare system consisting of multiple flare burners in staged arrays whereby the vent stream pressure is used to promote mixing and smokeless operation at the flare burner tips. Pressure-assisted multi-point flares are designed for smokeless operation at velocities up to Mach = 1 conditions (i.e., sonic conditions), can be elevated or at ground level, and typically use cross-lighting for flame propagation to combust any flare vent gases sent to a particular stage of flare burners.

Pressure vessel means a storage vessel that is used to store liquids or gases and is designed not to vent to the atmosphere as a result of compression of the vapor headspace in the pressure vessel during filling of the pressure vessel to its design capacity.

Primary fuel means the fuel that provides the principal heat input to the device. To be considered primary, the fuel must be able to sustain operation without the addition of other fuels.

Process heater means a device that transfers heat liberated by burning fuel directly to process streams or to heat transfer liquids other than water.

Process unit means a chemical manufacturing process unit as defined in subpart F of this part, a process subject to the provisions of subpart I of this part, or a process subject to another subpart in this part that references this subpart.

Process unit shutdown means a work practice or operational procedure that stops production from a process unit or part of a process unit during which it is technically feasible to clear process material from a process unit or part of a process unit consistent with safety constraints and during which repairs can be effected. An unscheduled work practice or operational procedure that stops production from a process unit or part of a process unit for less than 24 hours is not a process unit shutdown. An unscheduled work practice or operational procedure that would stop production from a process unit or part of a process unit for a shorter period of time than would be required to clear the process unit or part of the process unit of materials and start up the unit, and would result in

greater emissions than delay of repair of leaking components until the next scheduled process unit shutdown, is not a process unit shutdown. The use of spare equipment and technically feasible bypassing of equipment without stopping production are not process unit shutdowns.

Process vent means the point of discharge to the atmosphere (or the point of entry into a control device, if any) of a gas stream if the gas stream has the characteristics specified in § 63.107(b) through (h), or meets the criteria specified in § 63.107(i). For purposes of §§ 63.113 through 63.118, all references to the characteristics of a process vent (e.g., flow rate, total HAP concentration, or TRE index value) shall mean the characteristics of the gas stream.

Process wastewater means wastewater which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, by-product, or waste product. Examples are product tank drawdown or feed tank drawdown; water formed during a chemical reaction or used as a reactant; water used to wash impurities from organic products or reactants; water used to cool or quench organic vapor streams through direct contact; and condensed steam from jet ejector systems pulling vacuum on vessels containing organics.

Process wastewater stream means a stream that contains process wastewater.

Product means a compound or chemical which is manufactured as the intended product of the chemical manufacturing process unit. By-products, isolated intermediates, impurities, wastes, and trace contaminants are not considered products.

Product separator means phase separators, flash drums, knock-out drums, decanters, degassers, and condenser(s) including ejector-condenser(s) associated with a reactor or an air oxidation reactor.

Product tank drawdown means any material or mixture of materials discharged from a product tank for the purpose of removing water or other contaminants from the product tank.

Product tank, as used in the wastewater provisions, means a stationary unit that is designed to contain an accumulation of materials that are fed to or produced by a process unit, and is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) which provide structural support. This term has the same meaning as a product storage vessel.

Rack-weighted average partial pressure means the throughput weighted average of the average maximum true vapor pressure of liquids containing organic HAP transferred at a transfer rack. The rack-weighted average partial pressure shall be calculated using the equation below:

$$P = \frac{\sum P_i G_i}{\sum G_i}$$

Where:

P = Rack-weighted average partial pressure, kilopascals.

P_i = Individual HAP maximum true vapor pressure, kilopascals, = X_i*P, where X_i is the mole fraction of compound i in the liquid.

G_i = Yearly volume of each liquid that contains organic HAP that is transferred at the rack, liters.

I = Each liquid that contains HAP that is transferred at the rack.

Reactor means a device or vessel in which one or more chemicals or reactants, other than air, are combined or decomposed in such a way that their molecular structures are altered and one or more new organic compounds are formed. Reactor includes the product separator and any associated vacuum pump or steam jet.

Recapture device means an individual unit of equipment capable of and used for the purpose of recovering chemicals, but not normally for use, reuse, or sale. For example, a recapture device may recover chemicals primarily for disposal. Recapture devices include, but are not limited to, absorbers, carbon adsorbers, and condensers.

Recovery device means an individual unit of equipment capable of and normally used for the purpose of recovering chemicals for fuel value (i.e., net positive heating value), use, reuse or for sale for fuel value, use, or reuse. Examples of equipment that may be recovery devices include absorbers, carbon adsorbers, condensers, oil-water separators or organic-water separators, or organic removal devices such as decanters, strippers, or thin-film evaporation units. For purposes of the monitoring, recordkeeping, and reporting requirements of subparts G and H of this part, recapture devices are considered recovery devices.

Reference control technology for process vents means a combustion device or recapture device used to reduce organic hazardous air pollutant emissions by 98 percent, or to an outlet concentration of 20 parts per million by volume.

Reference control technology for storage vessels means an internal floating roof meeting the specifications of § 63.119(b), an external floating roof meeting the specifications of § 63.119(c), an external floating roof converted to an internal floating roof meeting the specifications of § 63.119(d), or a closed-vent system to a control device achieving 95-percent reduction in organic HAP emissions. For purposes of emissions averaging, these four technologies are considered equivalent.

Reference control technology for transfer racks means a combustion device, recapture device, or recovery device used to reduce organic hazardous air pollutants emissions by 98 percent, or to an outlet concentration of 20 parts per million by volume; or a vapor balancing system.

Reference control technology for wastewater means the use of:

- (i) Controls specified in §§ 63.133 through 63.137;
- (ii) A steam stripper meeting the specifications of § 63.138(d) or any of the other alternative control measures specified in § 63.138(b), (c), (e), (f), (g), or (h); and
- (iii) A control device to reduce by 95 percent (or to an outlet concentration of 20 parts per million by volume for combustion devices or for noncombustion devices controlling air emissions from waste management units other than surface impoundments or containers) the organic hazardous air pollutants emissions in the vapor streams vented from wastewater tanks, oil-water separators, containers, surface impoundments, individual drain systems, and treatment processes (including the design steam stripper) managing wastewater.

Relief valve means a type of pressure relief device that is designed to re-close after the pressure relief.

Repaired means that equipment:

- (i) Is adjusted, or otherwise altered, to eliminate a leak as defined in the applicable sections of subpart H of this part, and
- (ii) Unless otherwise specified in applicable provisions of subpart H of this part, is monitored as specified in § 63.180(b) and (c), as appropriate, to verify that emissions from the equipment are below the applicable leak definition.

Research and development facility means laboratory and pilot plant operations whose primary purpose is to conduct research and development into new processes and products, where the operations are under the close supervision of technically trained personnel, and is not engaged in the manufacture of products for commercial sale, except in a *de minimis* manner.

Residual means any liquid or solid material containing table 9 compounds that is removed from a wastewater stream by a waste management unit or treatment process that does not destroy organics (nondestructive unit). Examples of residuals from nondestructive wastewater management units are: the organic layer and bottom residue removed by a decanter or organic-water separator and the overheads from a steam stripper or air stripper. Examples of materials which are not residuals are: silt; mud; leaves; bottoms from a steam stripper or air stripper; and sludges, ash, or other materials removed from wastewater being treated by destructive devices such as biological treatment units and incinerators.

Routed to a process or route to a process means the emissions are conveyed to any enclosed portion of a process unit where the emissions are predominately recycled and/or consumed in the same manner as a material that fulfills the same function in the process; and/or transformed by chemical reaction into materials that are not organic hazardous air pollutants; and/or incorporated into a product; and/or recovered.

Sampling connection system means an assembly of equipment within a process unit used during periods of representative operation to take samples of the process fluid. Equipment used to take non-routine grab samples is not considered a sampling connection system.

Screwed connector means a threaded pipe fitting where the threads are cut on the pipe wall and the fitting requires only two pieces to make the connection (*i.e.*, the pipe and the fitting).

Secondary fuel means a fuel fired through a burner other than the primary fuel burner that provides supplementary heat in addition to the heat provided by the primary fuel.

Sensor means a device that measures a physical quantity or the change in a physical quantity, such as temperature, pressure, flow rate, pH, or liquid level.

Set pressure means the pressure at which a properly operating pressure relief device begins to open to relieve atypical process system operating pressure.

Sewer line means a lateral, trunk line, branch line, or other conduit including, but not limited to, grates, trenches, etc., used to convey wastewater streams or residuals to a downstream waste management unit.

Shutdown means for purposes including, but not limited to, periodic maintenance, replacement of equipment, or repair, the cessation of operation of a chemical manufacturing process unit or a reactor, air oxidation reactor, distillation unit, waste management unit, equipment required or used to comply with this subpart, subpart G or H of this part, or the emptying and degassing of a storage vessel. Shutdown does not include the routine rinsing or washing of equipment in batch operation between batches.

Simultaneous loading means, for a shared control device, loading of organic HAP materials from more than one transfer arm at the same time such that the beginning and ending times of loading cycles coincide or overlap and there is no interruption in vapor flow to the shared control device.

Single-seal system means a floating roof having one continuous seal that completely covers the space between the wall of the storage vessel and the edge of the floating roof. This seal may be a vapor-mounted, liquid-mounted, or metallic shoe seal.

Source means the collection of emission points to which this subpart applies as determined by the criteria in § 63.100. For purposes of subparts F, G, and H of this part, the term *affected source* as used in subpart A of this part has the same meaning as the term *source* defined here.

Specific gravity monitoring device means a unit of equipment used to monitor specific gravity and having a minimum accuracy of ± 0.02 specific gravity units.

Start-up means the setting into operation of a chemical manufacturing process unit or a reactor, air oxidation reactor, distillation unit, waste management unit, or equipment required or used to comply with this subpart, subpart G or H of this part, or a storage vessel after emptying and degassing. Start-up includes initial start-up, operation solely for testing equipment, the recharging of equipment in batch operation, and transitional conditions due to changes in product for flexible operation units.

Start-up, shutdown, and malfunction plan means the plan required under § 63.6(e)(3). This plan details the procedures for operation and maintenance of the source during periods of start-up, shutdown, and malfunction. For each source as defined in this section, this definition no longer applies on and after July 15, 2027.

Steam jet ejector means a steam nozzle which discharges a high-velocity jet across a suction chamber that is connected to the equipment to be evacuated.

Storage vessel means a tank or other vessel that is used to store organic liquids that contain one or more of the organic HAP's listed in table 2 to this subpart and that has been assigned, according to the procedures in § 63.100(g), to a chemical manufacturing process unit that is subject to this subpart. Storage vessel does not include:

- (i) Vessels permanently attached to motor vehicles such as trucks, railcars, barges, or ships;
- (ii) Vessels with capacities smaller than 38 cubic meters;
- (iii) Except for storage vessels in ethylene oxide service, vessels storing organic liquids that contain organic hazardous air pollutants only as impurities;
- (iv) Bottoms receiver tanks;
- (v) Surge control vessels; or
- (vi) Wastewater storage tanks. Wastewater storage tanks are covered under the wastewater provisions.

Surface impoundment means a waste management unit which is a natural topographic depression, manmade excavation, or diked area formed primarily of earthen materials (although it may be lined with manmade materials), which is designed to hold an accumulation of liquid wastes or waste containing free liquids. A surface impoundment is used for the purpose of treating, storing, or disposing of wastewater or residuals, and is not an injection well. Examples of surface impoundments are equalization, settling, and aeration pits, ponds, and lagoons.

Surge control vessel means feed drums, recycle drums, and intermediate vessels. Surge control vessels are used within a chemical manufacturing process unit when in-process storage, mixing, or management of flow rates or volumes is needed to assist in production of a product.

Table 8 compound means a compound listed in table 8 to subpart G of this part.

Table 9 compound means a compound listed in table 9 to subpart G of this part.

Temperature monitoring device means a unit of equipment used to monitor temperature and having a minimum accuracy of (a) ± 1 percent of the temperature being monitored expressed in degrees Celsius ($^{\circ}\text{C}$) or (b) ± 0.5 degrees ($^{\circ}\text{C}$), whichever is greater.

The 33/50 program means a voluntary pollution prevention initiative established and administered by the EPA to encourage emissions reductions of 17 chemicals emitted in large volumes by industrial facilities. The EPA Document Number 741-K-92-001 provides more information about the 33/50 program.

Total organic compounds (TOC), as used in the process vents provisions, means those compounds measured according to the procedures of Method 18 of appendix A-6 to 40 CFR part 60, ASTM D6420-18 (incorporated by reference, see § 63.14) may be used in lieu of Method 18, if the target compounds are all known and are all listed in Section 1.1 of ASTM D6420-18 as measurable; ASTM D6420-18 must not be used for methane and ethane; and ASTM D6420-18 may not be used as a total VOC method.

Total resource effectiveness index value or TRE index value means a measure of the supplemental total resource requirement per unit reduction of organic HAP associated with a process vent stream, based on vent stream flow rate, emission rate of organic HAP, net heating value, and corrosion properties (whether or not the vent stream contains halogenated compounds), as quantified by the equations given under § 63.115.

Transfer operation means the loading, into a tank truck or railcar, of organic liquids that contain one or more of the organic hazardous air pollutants listed in table 2 of this subpart from a transfer rack (as defined in this section). Transfer operations do not include loading at an operating pressure greater than 204.9 kilopascals. For each source as defined in this section, the greater than 204.9 kilopascals exemption in this definition no longer applies on and after July 15, 2027.

Transfer rack means the collection of loading arms and loading hoses, at a single loading rack, that are assigned to a chemical manufacturing process unit subject to this subpart according to the procedures specified in § 63.100(h) and are used to fill tank trucks and/or railcars with organic liquids that contain one or more of the organic hazardous air pollutants listed in table 2 to this subpart. Transfer rack includes the associated pumps, meters, shutoff valves, relief valves, and other piping and valves. Transfer rack does not include:

- (i) Racks, arms, or hoses that only transfer liquids containing organic hazardous air pollutants as impurities; or
- (ii) Racks, arms, or hoses that vapor balance during all loading operations.

Treatment process means a specific technique that removes or destroys the organics in a wastewater or residual stream such as a steam stripping unit, thin-film evaporation unit, waste incinerator, biological treatment unit, or any other process applied to wastewater streams or residuals to comply with § 63.138. Most treatment processes are conducted in tanks. Treatment processes are a subset of waste management units.

Unit operation means one or more pieces of process equipment used to make a single change to the physical or chemical characteristics of one or more process streams. Unit operations include, but are not limited to, reactors, distillation units, extraction columns, absorbers, decanters, dryers, condensers, and filtration equipment.

Vapor balancing system means a piping system that is designed to collect organic hazardous air pollutants vapors displaced from tank trucks or railcars during loading; and to route the collected organic hazardous air pollutants vapors to the storage vessel from which the liquid being loaded originated, or to another storage vessel connected by a common header or to compress and route to a process or a fuel gas system the collected organic hazardous air pollutants vapors.

Vapor collection system, as used in the transfer provisions, means the equipment used to collect and transport organic HAP vapors displaced during the loading of tank trucks or railcars. This does not include the vapor collection system that is part of any tank truck or railcar vapor collection manifold system.

Vapor-mounted seal means a continuous seal that completely covers the annular space between the wall of the storage vessel or waste management unit and the edge of the floating roof and is mounted such that there is a vapor space between the stored liquid and the bottom of the seal.

Vent stream, as used in the process vent provisions, means the gas stream flowing through the process vent.

Waste management unit means the equipment, structure(s), and/or device(s) used to convey, store, treat, or dispose of wastewater streams or residuals. Examples of waste management units include: Wastewater tanks, surface impoundments, individual drain systems, and biological wastewater treatment units. Examples of equipment that may be waste management units include containers, air flotation units, oil-water separators or organic-water separators, or organic removal devices such as decanters, strippers, or thin-film evaporation units. If such equipment is used for recovery then it is part of a chemical manufacturing process unit and is not a waste management unit.

Wastewater means water that:

- (i) Contains either:
 - (A) An annual average concentration of table 9 compounds of at least 5 parts per million by weight and has an annual average flow rate of 0.02 liter per minute or greater, or
 - (B) An annual average concentration of table 9 compounds of at least 10,000 parts per million by weight at any flow rate, and that
- (ii) Is discarded from a chemical manufacturing process unit that meets all of the criteria specified in § 63.100 (b)(1) through (3). Wastewater is process wastewater or maintenance wastewater.

Wastewater stream means a stream that contains only wastewater.

Wastewater tank means a stationary waste management unit that is designed to contain an accumulation of wastewater or residuals and is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) which provide structural support. Wastewater tanks used for flow equalization are included in this definition.

Water seal controls means a seal pot, p-leg trap, or other type of trap filled with water (e.g., flooded sewers that maintain water levels adequate to prevent air flow through the system) that creates a water barrier between the sewer line and the atmosphere. The water level of the seal must be maintained in the vertical leg of a drain in order to be considered a water seal.

[59 FR 19454, Apr. 22, 1994, as amended at 60 FR 18024, Apr. 10, 1995; 60 FR 63626, Dec. 12, 1995; 62 FR 2731, Jan. 17, 1997; 65 FR 26497, May 8, 2000; 66 FR 6928, Jan. 22, 2001; 89 FR 43155, May 16, 2024]

§ 63.102 General standards.

- (a) Except as specified in paragraph (e) of this section, owners and operators of sources subject to this subpart shall comply with the requirements of subparts G and H of this part as specified in paragraphs (a)(1) through (4) of this section.
 - (1) The provisions set forth in this subpart and subpart G of this part shall apply at all times except during periods of start-up or shutdown (as defined in § 63.101 of this subpart), malfunction, or non-operation of the chemical manufacturing process unit (or specific portion thereof) resulting in cessation of the emissions to which this subpart and subpart G of this part apply. However, if a start-up, shutdown, malfunction or period of non-operation of one portion of a chemical manufacturing process unit does not affect the ability of a particular emission point to comply with the specific provisions to which it is subject, then that emission point shall still be required to comply with the applicable provisions of this subpart and subpart G of this part during the start-up, shutdown, malfunction or period of non-operation. For example, if there is an overpressure in the reactor area, a storage vessel in the chemical manufacturing process unit would still be required to be controlled in accordance with § 63.119. Similarly, the degassing of a storage vessel would not affect the ability of a process vent to meet the requirements of § 63.113.
 - (2) The provisions set forth in subpart H of this part shall apply at all times except during periods of start-up or shutdown, malfunction, or process unit shutdown (as defined in § 63.101(b)), or non-operation of the chemical manufacturing process unit (or specific portion thereof) in which the lines are drained and depressurized resulting in cessation of the emissions to which subpart H of this part applies.
 - (3) The owner or operator shall not shut down items of equipment that are required or utilized for compliance with the provisions of this subpart or subpart G or H of this part during times when emissions (or, where applicable, wastewater streams or residuals) are being routed to such items of equipment, if the shutdown would contravene requirements of this subpart or subpart G or H of this part applicable to such items of equipment. This paragraph does not apply if the item of equipment is malfunctioning, or if the owner or operator must shut down the equipment to avoid damage due to a contemporaneous start-up, shutdown, or malfunction of the chemical manufacturing process unit or portion thereof.
 - (4) During start-ups, shutdowns, and malfunctions when the requirements of this subpart and subparts G and/or H of this part do not apply pursuant to paragraphs (a)(1) through (3) of this section, the owner or operator shall implement, to the extent reasonably available, measures to prevent or minimize excess emissions to the extent practical. The general duty to minimize emissions during a period of startup, shutdown, or malfunction does not require the owner or operator to achieve emission levels that would be required by the applicable standard at other times if this is not consistent with safety and good air pollution control practices, nor does it require the owner or operator to make any further efforts to reduce emissions if levels required by the applicable

standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures (including the startup, shutdown, and malfunction plan required in § 63.6(e)(3)), review of operation and maintenance records, and inspection of the source. The measures to be taken may include, but are not limited to, air pollution control technologies, recovery technologies, work practices, pollution prevention, monitoring, and/or changes in the manner of operation of the source. Back-up control devices are not required but may be used if available.

- (b) If, in the judgment of the Administrator, an alternative means of emission limitation will achieve a reduction in organic HAP emissions at least equivalent to the reduction in organic HAP emissions from that source achieved under any design, equipment, work practice, or operational standards in subpart G or H of this part, the Administrator will publish in the FEDERAL REGISTER a notice permitting the use of the alternative means for purposes of compliance with that requirement.
 - (1) The notice may condition the permission on requirements related to the operation and maintenance of the alternative means.
 - (2) Any notice under this paragraph (b) shall be published only after public notice and an opportunity for a hearing.
 - (3) Any person seeking permission to use an alternative means of compliance under this section shall collect, verify, and submit to the Administrator information showing that the alternative means achieves equivalent emission reductions.
- (c) Each owner or operator of a source subject to this subpart shall obtain a permit under 40 CFR part 70 or part 71 from the appropriate permitting authority by the date determined by 40 CFR part 70 or part 71, as appropriate.
 - (1) If the EPA has approved a State operating permit program under 40 CFR part 70, the permit shall be obtained from the State authority. If the State operating permit program has not been approved, the source shall apply to the EPA Regional Office.
 - (2) [Reserved]
- (d) The requirements in this subpart and subparts G and H of this part are federally enforceable under section 112 of the Act on and after the dates specified in § 63.100(k) of this subpart.
- (e) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), paragraph (a) of this section does not apply. Instead, owners and operators of sources as defined in § 63.101 shall comply with the requirements in this subpart and subparts G and H of this part at all times, except during periods of nonoperation of the source (or specific portion thereof) resulting in cessation of the emissions to which this subpart or subpart G or H of this part applies.
- (f) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), at all times, owners and operators must operate and maintain any source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require owners and operators to make any further efforts to reduce emissions if levels required by the applicable standard have been achieved. Determination of whether a source is

operating in compliance with operation and maintenance requirements will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

[89 FR 43163, May 16, 2024]

§ 63.103 General compliance, reporting, and recordkeeping provisions.

- (a) Table 3 of this subpart specifies the provisions of subpart A that apply and those that do not apply to owners and operators of sources subject to subparts F, G, and H of this part.
- (b) Performance tests and initial compliance determinations shall be required only as specified in subparts G and H of this part.
 - (1) Initial performance tests and compliance determinations shall be conducted according to the schedule and procedures in § 63.7(a) and the applicable sections of subparts G and H of this part. Beginning no later than the compliance dates specified in § 63.100(k)(10), except as outlined in subpart H of this part, conduct subsequent performance tests no later than 60 calendar months after the previous performance test.
 - (2) The owner or operator shall notify the Administrator of the intention to conduct a performance test at least 30 calendar days before the performance test is scheduled to allow the Administrator the opportunity to have an observer present during the test.
 - (3) Performance tests shall be conducted as specified in paragraph (b)(3)(i) or (ii) of this section.
 - (i) Except as specified in paragraph (b)(3)(ii) of this section, performance tests shall be conducted according to the provisions of § 63.7(e), except that performance tests shall be conducted at maximum representative operating conditions for the process. During the performance test, an owner or operator may operate the control or recovery device at maximum or minimum representative operating conditions for monitored control or recovery device parameters, whichever results in lower emission reduction.
 - (ii) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), paragraph (b)(3)(i) of this section no longer applies and instead the owner or operator may not conduct performance tests during periods of malfunction. Owners and operators must record the process information that is necessary to document operating conditions during the test and include in such record an explanation to support that such conditions represent normal operation. Upon request, owners and operators must make available to the Administrator such records as may be necessary to determine the conditions of performance tests.
 - (4) Data shall be reduced in accordance with the EPA-approved methods specified in the applicable subpart or, if other test methods are used, the data and methods shall be validated according to the protocol in Method 301 of appendix A of this part.
 - (5) Performance tests may be waived with approval of the Administrator as specified in § 63.7(h)(2) of subpart A of this part. Owners or operators of sources subject to subparts F, G, and H of this part who apply for a waiver of a performance test shall submit the application by the dates specified in paragraph (b)(5)(i) of this section rather than the dates specified in § 63.7(h)(3) of subpart A of this part.

- (i) If a request is made for an extension of compliance under § 63.151(a)(6) of subpart G or § 63.6(i) of subpart A of this part, the application for a waiver of an initial performance test shall accompany the information required for the request for an extension of compliance. If no extension of compliance is requested, the application for a waiver of an initial performance test shall be submitted no later than 90 calendar days before the Notification of Compliance Status required in § 63.152(b) of subpart G of this part is due to be submitted.
 - (ii) Any application for a waiver of a performance test shall include information justifying the owner or operator's request for a waiver, such as the technical or economic infeasibility, or the impracticality, of the source performing the required test.
- (6) The owner or operator of a flexible operation unit shall conduct all required compliance demonstrations during production of the primary product. The owner or operator is not required to conduct compliance demonstrations for operating conditions during production of a product other than the primary product. Except as otherwise provided in this subpart or in subpart G or subpart H of this part, as applicable, the owner or operator shall operate each control device, recovery device, and/or recapture device that is required or used for compliance, and associated monitoring systems, without regard for whether the product that is being produced is the primary product or a different product. Except as otherwise provided in this subpart, subpart G and/or subpart H of this part, as applicable, operation of a control device, recapture device and/or recovery device required or used for compliance such that the daily average of monitored parameter values is outside the parameter range established pursuant to § 63.152(b)(2), or such that the monitoring data show operation inconsistent with the monitoring plan established pursuant to § 63.120(d)(2) or § 63.181(g)(1)(iv), shall constitute a violation of the required operating conditions.
- (c) Each owner or operator of a source subject to subparts F, G, and H of this part shall keep copies of all applicable reports and records required by subparts F, G, and H of this part for at least 5 years; except that, if subparts G or H require records to be maintained for a time period different than 5 years, those records shall be maintained for the time specified in subpart G or H of this part. If an owner or operator submits copies of reports to the applicable EPA Regional Office, the owner or operator is not required to maintain copies of reports. If the EPA Regional Office has waived the requirement of § 63.10(a)(4)(ii) for submittal of copies of reports, the owner or operator is not required to maintain copies of reports.
 - (1) All applicable records shall be maintained in such a manner that they can be readily accessed. The most recent 6 months of records shall be retained on site or shall be accessible from a central location by computer or other means that provides access within 2 hours after a request. The remaining four and one-half years of records may be retained offsite. Records may be maintained in hard copy or computer-readable form including, but not limited to, on paper, microfilm, computer, floppy disk, magnetic tape, or microfiche.
 - (2) The owner or operator subject to subparts F, G, and H of this part shall keep the records specified in this paragraph, as well as records specified in subparts G and H.
 - (i) Records of the occurrence and duration of each start-up, shutdown, and malfunction of operation of process equipment or of air pollution control equipment or continuous monitoring systems used to comply with this subpart or subpart G or H of this part during which excess emissions (as defined in § 63.102(a)(4)) occur. For each source as defined in § 63.101, on and after July 15, 2027, this paragraph (c)(2)(i) no longer applies; however, for historical compliance purposes, a copy of these records must be retained and available on-site for at least five years after the date of occurrence.

(ii) For each start-up, shutdown, and malfunction during which excess emissions (as defined in § 63.102(a)(4)) occur, records that the procedures specified in the source's start-up, shutdown, and malfunction plan were followed, and documentation of actions taken that are not consistent with the plan. For example, if a start-up, shutdown, and malfunction plan includes procedures for routing a control device to a backup control device (e.g., the incinerator for a halogenated stream could be routed to a flare during periods when the primary control device is out of service), records must be kept of whether the plan was followed. These records may take the form of a "checklist," or other form of recordkeeping that confirms conformance with the start-up, shutdown, and malfunction plan for the event. For each source as defined in § 63.101, on and after July 15, 2027, this paragraph (c)(2)(ii) no longer applies; however, for historical compliance purposes, a copy of the plan and these records must be retained and available on-site for 5 years after July 15, 2027.

(iii) For continuous monitoring systems used to comply with subpart G of this part, records documenting the completion of calibration checks and maintenance of continuous monitoring systems that are specified in the manufacturer's instructions or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately. Inning no later than the compliance dates specified in § 63.100(k)(10), the manufacturer's specifications specified in paragraph (c)(2)(iii) of this section must include a schedule for calibrations, preventative maintenance procedures, a schedule for preventative maintenance, and corrective actions to be taken if a calibration fails. If a continuous monitoring system calibration fails, the continuous monitoring system is considered to be inoperative until the owner or operator takes corrective action and the system passes calibration. The owner or operator must record the nature and cause of instances when the continuous monitoring system is inoperative and the corrective action taken.

(3) Records of start-up, shutdown and malfunction and continuous monitoring system calibration and maintenance are not required if they pertain solely to Group 2 emission points, as defined in § 63.101, that are not included in an emissions average. For each source as defined in § 63.101, on and after July 15, 2027, the phrase "start-up, shutdown and malfunction and" in this paragraph (c)(3) no longer applies.

(d) Unless required to be submitted electronically via the EPA's CEDRI, all reports required under this subpart and subparts G and H of this part must be sent to the Administrator at the addresses listed in § 63.13, except that requests for permission to use an alternative means of compliance as provided for in § 63.102(b) of this subpart and application for approval of a nominal efficiency as provided for in § 63.150 (i)(1) through (6) must be submitted to the Director of the EPA Office of Air Quality Planning and Standards rather than to the Administrator or delegated authority.

(1) Wherever subpart A of this part specifies "postmark" dates, submittals may be sent by methods other than the U.S. Mail (e.g., by fax or courier). Submittals shall be sent on or before the specified date.

(2) If acceptable to both the Administrator and the owner or operator of a source, reports may be submitted on electronic media.

(e) The owner or operator of a chemical manufacturing process unit which meets the criteria of § 63.100(b)(1) and (3), but not the criteria of § 63.100(b)(2), shall comply with the requirements of either paragraph (e)(1) or (2) of this section.

- (1) Retain information, data, and analysis used to determine that the chemical manufacturing process unit does not use as a reactant or manufacture as a product or co-product any organic hazardous air pollutant. Examples of information that could document this include, but are not limited to, records of chemicals purchased for the process, analyses of process stream composition, engineering calculations, or process knowledge.
 - (2) When requested by the Administrator, demonstrate that the chemical manufacturing process unit does not use as a reactant or manufacture as a product or co-product any organic hazardous air pollutant.
- (f) To qualify for the exemption specified in § 63.100(b)(4), the owner or operator shall maintain the documentation of the information required pursuant to § 63.100(b)(4)(i), and documentation of any update of this information requested by the EPA Regional Office, and shall provide the documentation to the EPA Regional Office upon request. The EPA Regional Office will notify the owner or operator, after reviewing such documentation, if the source does not qualify for the exemption specified in § 63.100(b)(4). In such cases, compliance with subpart H shall be required no later than 90 days after expiration of the applicable compliance date in § 63.100(k)(3), but in no event earlier than 90 days after the date of such notification by the EPA Regional Office. Compliance with this subpart and subpart G of this part shall be no later than April 22, 1997, or as otherwise specified in § 63.100(k)(2)(ii), unless an extension has been granted by the EPA Regional Office or permitting authority as provided in § 63.6(i).
- (g) An owner or operator who elects to use the compliance extension provisions of § 63.100(k)(6)(i) or (ii) shall submit a compliance extension request to the appropriate EPA Regional Office no later than 45 days before the applicable compliance date in § 63.100(k)(3), but in no event is submittal required earlier than May 10, 1995. The request shall contain the information specified in § 63.100(k)(5)(iv) and the reason compliance cannot reasonably be achieved without a process unit shutdown, as defined in 40 CFR 63.101 or without replacement of the compressor or recasting of the distance piece.
- (h) An owner or operator who elects to use the compliance extension provisions of § 63.100(k)(8) shall submit to the appropriate EPA Regional Office a brief description of the process change, identify the HAP eliminated, and the expected date of cessation of use or production of HAP. The description shall be submitted no later than May 10, 1995, or with the Notice of Compliance Status as required in § 63.182(c), whichever is later.

[59 FR 19454, Apr. 22, 1994, as amended at 59 FR 48176, Sept. 20, 1994; 60 FR 18024, Apr. 10, 1995; 62 FR 2733, Jan. 17, 1997; 63 FR 26082, May 12, 1998; 89 FR 43164, May 16, 2024]

§ 63.104 Heat exchange system requirements.

- (a) Unless one or more of the conditions specified in paragraphs (a)(1) through (6) or paragraph (l) of this section are met, owners and operators of sources subject to this subpart shall monitor each heat exchange system used to cool process equipment in a chemical manufacturing process unit meeting the conditions of § 63.100(b)(1) through (3), except for chemical manufacturing process units meeting the condition specified in § 63.100(c), according to the provisions in either paragraph (b) or (c) of this section, and if applicable, paragraph (g) of this section. Whenever a leak is detected, the owner or operator shall comply with the requirements in paragraph (d) of this section, and if applicable, paragraphs (h) through (j) of this section. Owners and operators of heat exchange systems in a chemical manufacturing process unit meeting the conditions of § 63.100(b)(1) through (3) must also comply with paragraph (k) of this section.

- (1) The heat exchange system is operated with the minimum pressure on the cooling water side at least 35 kilopascals greater than the maximum pressure on the process side.
- (2) There is an intervening cooling fluid, containing less than 5 percent by weight of total hazardous air pollutants listed in table 4 of this subpart, between the process and the cooling water. This intervening fluid serves to isolate the cooling water from the process fluid and the intervening fluid is not sent through a cooling tower or discharged. For purposes of this section, discharge does not include emptying for maintenance purposes.
- (3) The once-through heat exchange system is subject to a National Pollution Discharge Elimination System (NPDES) permit with an allowable discharge limit of 1 part per million or less above influent concentration or 10 percent or less above influent concentration, whichever is greater. For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), this paragraph (a)(3) no longer applies.
- (4) Except as specified in paragraph (a)(4)(v) of this section, the once-through heat exchange system is subject to an NPDES permit that:
 - (i) Requires monitoring of a parameter(s) or condition(s) to detect a leak of process fluids into cooling water;
 - (ii) Specifies or includes the normal range of the parameter or condition;
 - (iii) Requires monitoring for the parameters selected as leak indicators no less frequently than monthly for the first six months and quarterly thereafter; and
 - (iv) Requires the owner or operator to report and correct leaks to the cooling water when the parameter or condition exceeds the normal range.
 - (v) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), this paragraph (a)(4) no longer applies.
- (b) The owner or operator who elects to comply with the requirements of paragraph (a) of this section by monitoring the cooling water for the presence of one or more organic hazardous air pollutants or other representative substances whose presence in cooling water indicates a leak shall comply with the requirements specified in paragraphs (b)(1) through (b)(6) of this section. The cooling water shall be monitored for total hazardous air pollutants, total volatile organic compounds, total organic carbon, one or more speciated HAP compounds, or other representative substances that would indicate the presence of a leak in the heat exchange system.
 - (1) The cooling water shall be monitored monthly for the first 6 months and quarterly thereafter to detect leaks.
 - (2)
 - (i) For recirculating heat exchange systems (cooling tower systems), the monitoring of speciated hazardous air pollutants or total hazardous air pollutants refers to the hazardous air pollutants listed in table 4 of this subpart.
 - (ii) For once-through heat exchange systems, the monitoring of speciated hazardous air pollutants or total hazardous air pollutants refers to the hazardous air pollutants listed in table 9 of subpart G of this part.

- (3) The concentration of the monitored substance(s) in the cooling water shall be determined using any EPA-approved method listed in part 136 of this chapter as long as the method is sensitive to concentrations as low as 10 parts per million and the same method is used for both entrance and exit samples. Alternative methods may be used upon approval by the Administrator.
- (4) The samples shall be collected either at the entrance and exit of each heat exchange system or at locations where the cooling water enters and exits each heat exchanger or any combination of heat exchangers.
 - (i) For samples taken at the entrance and exit of recirculating heat exchange systems, the entrance is the point at which the cooling water leaves the cooling tower prior to being returned to the process equipment and the exit is the point at which the cooling water is introduced to the cooling tower after being used to cool the process fluid.
 - (ii) For samples taken at the entrance and exit of once-through heat exchange systems, the entrance is the point at which the cooling water enters and the exit is the point at which the cooling water exits the plant site or chemical manufacturing process units.
 - (iii) For samples taken at the entrance and exit of each heat exchanger or any combination of heat exchangers in chemical manufacturing process units, the entrance is the point at which the cooling water enters the individual heat exchanger or group of heat exchangers and the exit is the point at which the cooling water exits the heat exchanger or group of heat exchangers.
- (5) A minimum of three sets of samples shall be taken at each entrance and exit as defined in paragraph (b)(4) of this section. The average entrance and exit concentrations shall then be calculated. The concentration shall be corrected for the addition of any makeup water or for any evaporative losses, as applicable.
- (6) A leak is detected if the exit mean concentration is found to be greater than the entrance mean using a one-sided statistical procedure at the 0.05 level of significance and the amount by which it is greater is at least 1 part per million or 10 percent of the entrance mean, whichever is greater.
- (c) The owner or operator who elects to comply with the requirement of paragraph (a) of this section by monitoring using a surrogate indicator of heat exchange system leaks shall comply with the requirements specified in paragraphs (c)(1) through (c)(3) of this section. Surrogate indicators that could be used to develop an acceptable monitoring program are ion specific electrode monitoring, pH, conductivity or other representative indicators.
 - (1) The owner or operator shall prepare and implement a monitoring plan that documents the procedures that will be used to detect leaks of process fluids into cooling water. The plan shall require monitoring of one or more surrogate indicators or monitoring of one or more process parameters or other conditions that indicate a leak. Monitoring that is already being conducted for other purposes may be used to satisfy the requirements of this section. The plan shall include the information specified in paragraphs (c)(1)(i) and (c)(1)(ii) of this section.
 - (i) A description of the parameter or condition to be monitored and an explanation of how the selected parameter or condition will reliably indicate the presence of a leak.

- (ii) The parameter level(s) or conditions(s) that shall constitute a leak. This shall be documented by data or calculations showing that the selected levels or conditions will reliably identify leaks. The monitoring must be sufficiently sensitive to determine the range of parameter levels or conditions when the system is not leaking. When the selected parameter level or condition is outside that range, a leak is indicated.
 - (iii) The monitoring frequency which shall be no less frequent than monthly for the first 6 months and quarterly thereafter to detect leaks.
 - (iv) The records that will be maintained to document compliance with the requirements of this section.
- (2) If a substantial leak is identified by methods other than those described in the monitoring plan and the method(s) specified in the plan could not detect the leak, the owner or operator shall revise the plan and document the basis for the changes. The owner or operator shall complete the revisions to the plan no later than 180 days after discovery of the leak.
- (3) The owner or operator shall maintain, at all times, the monitoring plan that is currently in use. The current plan shall be maintained on-site, or shall be accessible from a central location by computer or other means that provides access within 2 hours after a request. If the monitoring plan is superseded, the owner or operator shall retain the most recent superseded plan at least until 5 years from the date of its creation. The superseded plan shall be retained on-site (or accessible from a central location by computer or other means that provides access within two hours after a request) for at least 6 months after its creation.
- (d) If a leak is detected according to the criteria of paragraph (b) or (c) of this section, the owner or operator shall comply with the requirements in paragraphs (d)(1) and (d)(2) of this section, except as provided in paragraph (e) of this section.
- (1) The leak shall be repaired as soon as practical but not later than 45 calendar days after the owner or operator receives results of monitoring tests indicating a leak. The leak shall be repaired unless the owner or operator demonstrates that the results are due to a condition other than a leak.
 - (2) Once the leak has been repaired, the owner or operator shall confirm that the heat exchange system has been repaired within 7 calendar days of the repair or startup, whichever is later.
- (e) Delay of repair of heat exchange systems for which leaks have been detected is allowed if the equipment is isolated from the process. Delay of repair is also allowed if repair is technically infeasible without a shutdown and any one of the conditions in paragraph (e)(1) or (e)(2) of this section is met. All time periods in paragraphs (e)(1) and (e)(2) of this section shall be determined from the date when the owner or operator determines that delay of repair is necessary.
- (1) If a shutdown is expected within the next 2 months, a special shutdown before that planned shutdown is not required.
 - (2) If a shutdown is not expected within the next 2 months, the owner or operator may delay repair as provided in paragraph (e)(2)(i) or (e)(2)(ii) of this section. Documentation of a decision to delay repair shall state the reasons repair was delayed and shall specify a schedule for completing the repair as soon as practical.
 - (i) If a shutdown for repair would cause greater emissions than the potential emissions from delaying repair, the owner or operator may delay repair until the next shutdown of the process equipment associated with the leaking heat exchanger. The owner or operator shall document

the basis for the determination that a shutdown for repair would cause greater emissions than the emissions likely to result from delaying repair as specified in paragraphs (e)(2)(i)(A) and (e)(2)(i)(B) of this section.

- (A) The owner or operator shall calculate the potential emissions from the leaking heat exchanger by multiplying the concentration of total hazardous air pollutants listed in table 4 of this subpart in the cooling water from the leaking heat exchanger by the flowrate of the cooling water from the leaking heat exchanger by the expected duration of the delay. The owner or operator may calculate potential emissions using total organic carbon concentration instead of total hazardous air pollutants listed in table 4 of this subpart.
- (B) The owner or operator shall determine emissions from purging and depressurizing the equipment that will result from the unscheduled shutdown for the repair.
- (ii) If repair is delayed for reasons other than those specified in paragraph (e)(2)(i) of this section, the owner or operator may delay repair up to a maximum of 120 calendar days. The owner shall demonstrate that the necessary parts or personnel were not available.

(f)

- (1) **Required records.** The owner or operator shall retain the records identified in paragraphs (f)(1)(i) through (iv) of this section, and if applicable, paragraph (f)(3) of this section, as specified in § 63.103(c)(1).
 - (i) Monitoring data required by this section indicating a leak and the date when the leak was detected, and if demonstrated not to be a leak, the basis for that determination;
 - (ii) Records of any leaks detected by procedures subject to paragraph (c)(2) of this section and the date the leak was discovered;
 - (iii) The dates of efforts to repair leaks; and
 - (iv) The method or procedure used to confirm repair of a leak and the date repair was confirmed.
- (2) **Reports.** If an owner or operator invokes the delay of repair provisions for a heat exchange system, the following information shall be submitted in the next semi-annual periodic report required by § 63.152(c). If the leak remains unrepaired, the information shall also be submitted in each subsequent periodic report, until repair of the leak is reported. In addition, if an owner or operator is complying with paragraph (g) or (l) of this section, then the semi-annual periodic report must include the information specified in paragraph (f)(2)(vi) of this section.
 - (i) The owner or operator shall report the presence of the leak by identifying the heat exchange system and the date that the leak was detected.
 - (ii) The owner or operator shall report whether or not the leak has been repaired.
 - (iii) The owner or operator shall report the reason(s) for delay of repair. If delay of repair is invoked due to the reasons described in paragraph (e)(2) of this section, documentation of emissions estimates must also be submitted.
 - (iv) If the leak remains unrepaired, the owner or operator shall report the expected date of repair.
 - (v) If the leak is repaired, the owner or operator shall report the date the leak was successfully repaired.

- (vi) For each heat exchange system subject to paragraph (g) or (l) of this section, the following information must be submitted in each semi-annual periodic report required by § 63.152(c).
 - (A) The number of heat exchange systems at the plant site subject to the monitoring requirements in paragraph (g) or (l) of this section during the reporting period.
 - (B) The number of heat exchange systems subject to the monitoring requirements in paragraph (g) or (l) of this section at the plant site found to be leaking during the reporting period.
 - (C) For each monitoring location where a leak was identified during the reporting period, identification of the monitoring location (e.g., unique monitoring location or heat exchange system ID number), the measured total strippable hydrocarbon concentration (in ppmv as methane) or total hydrocarbon mass emissions rate (in kg/hr as methane) (if complying with paragraph (g) of this section) or the measured concentration of the monitored substance(s) (in ppmv) (if complying with paragraph (l) of this section), the date the leak was first identified, and, if applicable, the date the source of the leak was identified;
 - (D) For leaks that were repaired during the reporting period (including delayed repairs), identification of the monitoring location associated with the repaired leak, the total strippable hydrocarbon concentration or total hydrocarbon mass emissions rate (if complying with paragraph (g) of this section) or the measured concentration of the monitored substance(s) (if complying with paragraph (l) of this section) measured during re-monitoring to verify repair, and the re-monitoring date (i.e., the effective date of repair); and
 - (E) For each delayed repair, identification of the monitoring location associated with the leak for which repair is delayed, the date when the delay of repair began, the date the repair was completed or is expected to be completed (if the leak is not repaired during the reporting period), the total strippable hydrocarbon concentration or total hydrocarbon mass emissions rate (if complying with paragraph (g) of this section) or the measured concentration of the monitored substance(s) (if complying with paragraph (l) of this section) and date of each monitoring event conducted on the delayed repair during the reporting period, and an estimate in pounds of the potential total hydrocarbon emissions or monitored substance(s) emissions over the reporting period associated with the delayed repair.
- (3) **Additional records.** For each heat exchange system subject to paragraph (g) or (l) of this section, owners and operators must also keep records in paragraphs (f)(3)(i) through (iv) of this section.
 - (i) Monitoring data required by paragraph (g) or (l) of this section that indicate a leak, the date the leak was detected, or, if applicable, the basis for determining there is no leak.
 - (ii) The dates of efforts to repair leaks.
 - (iii) The method or procedures used to confirm repair of a leak and the date the repair was confirmed.
 - (iv) Documentation of delay of repair as specified in paragraphs (f)(3)(iv)(A) through (f)(3)(iv)(D) of this section.
 - (A) The reason(s) for delaying repair.

- (B) A schedule for completing the repair as soon as practical.
- (C) The date and concentration or mass emissions rate of the leak as first identified and the results of all subsequent monitoring events during the delay of repair.
- (D) An estimate of the potential total hydrocarbon emissions (if monitoring the cooling water for leaks according to paragraph (g)(1) of this section) or monitored substance(s) emissions (if monitoring the cooling water for leaks according to paragraph (l) of this section) from the leaking heat exchange system or heat exchanger for each required delay of repair monitoring interval following the procedures in paragraphs (f)(3)(iv)(D)(1) through (4) of this section.
 - (1) If an owner or operator complies with the total strippable hydrocarbon concentration leak action level, as specified in paragraph (g)(4) of this section, then the owner or operator must calculate the mass emissions rate by complying with the requirements of paragraph (g)(3)(ii) of this section or by determining the mass flow rate of the cooling water at the monitoring location where the leak was detected. If the monitoring location is an individual cooling tower riser, determine the total cooling water mass flow rate to the cooling tower. Cooling water mass flow rates may be determined using direct measurement, pump curves, heat balance calculations, or other engineering methods. If an owner or operator determines the mass flow rate of the cooling water, calculate the mass emissions rate by converting the stripping gas leak concentration (in ppmv as methane) to an equivalent liquid concentration, in parts per million by weight (ppmw), using equation 7-1 from "Air Stripping Method (Modified El Paso Method) for Determination of Volatile Organic Compound Emissions from Water Sources" (incorporated by reference—see § 63.14) and multiply the equivalent liquid concentration by the mass flow rate of the cooling water.
 - (2) For delay of repair monitoring intervals prior to repair of the leak, calculate the potential total hydrocarbon emissions or monitored substance(s) emissions for the leaking heat exchange system or heat exchanger for the monitoring interval by multiplying the mass emissions rate, determined in paragraph (g)(3)(ii) or (f)(3)(iv)(D)(1) or (4) of this section, by the duration of the delay of repair monitoring interval. The duration of the delay of repair monitoring interval is the time period starting at midnight on the day of the previous monitoring event or at midnight on the day the repair would have had to be completed if the repair had not been delayed, whichever is later, and ending at midnight of the day the of the current monitoring event.
 - (3) For delay of repair monitoring intervals ending with a repaired leak, calculate the potential total hydrocarbon emissions or monitored substance(s) emissions for the leaking heat exchange system or heat exchanger for the final delay of repair monitoring interval by multiplying the duration of the final delay of repair monitoring interval by the mass emissions rate determined for the last monitoring event prior to the re-monitoring event used to verify the leak was repaired. The duration of the final delay of repair monitoring interval is the time period starting at midnight of the day of the last monitoring event prior to re-monitoring to verify the leak was repaired and ending at the time of the re-monitoring event that verified that the leak was repaired.

- (4) If an owner or operator monitors the cooling water for leaks according to paragraph (l) of this section, then the owner or operator must calculate the mass emissions rate by determining the mass flow rate of the cooling water at the monitoring location where the leak was detected. Cooling water mass flow rates may be determined using direct measurement, pump curves, heat balance calculations, or other engineering methods. Once determined, multiply the mass flow rate of the cooling water by the concentration of the measured substance(s).
- (g) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), owners and operators must monitor the cooling water for the presence of total strippable hydrocarbons that indicate a leak according to paragraph (g)(1) of this section, and if an owner or operator detects a leak pursuant to the procedures in this paragraph, then the owner or operator must repair it according to paragraphs (h) and (i) of this section, unless repair is delayed according to paragraph (j) of this section. The requirements in this paragraph do not apply to heat exchange systems that have a maximum cooling water flow rate of 10 gallons per minute or less.
 - (1) For each recirculating heat exchange system subject to the requirements of paragraph (g) of this section, owners and operators must collect and analyze a sample from the location(s) described in either paragraph (g)(1)(i) or (ii) of this section.
 - (i) Each cooling tower return line or any representative riser within the cooling tower prior to exposure to air for each heat exchange system.
 - (ii) Selected heat exchanger exit line(s), so that each heat exchanger or group of heat exchangers within a heat exchange system is covered by the selected monitoring location(s).
 - (2) For each once-through heat exchange system, owners and operators must collect and analyze a sample from the location(s) described in paragraph (g)(2)(i) of this section. The owner or operator may also elect to collect and analyze an additional sample from the location(s) described in paragraph (g)(2)(ii) of this section.
 - (i) Selected heat exchanger exit line(s), so that each heat exchanger or group of heat exchangers within a heat exchange system is covered by the selected monitoring location(s). The selected monitoring location may be at a point where discharges from multiple heat exchange systems are combined provided that the combined cooling water flow rate at the monitoring location does not exceed 40,000 gallons per minute.
 - (ii) The inlet water feed line for a once-through heat exchange system prior to any heat exchanger. If multiple heat exchange systems use the same water feed (*i.e.*, inlet water from the same primary water source), the owner or operator may monitor at one representative location and use the monitoring results for that sampling location for all heat exchange systems that use that same water feed.
 - (3) If an owner or operator complies with the total strippable hydrocarbon concentration leak action level as specified in paragraph (g)(4) of this section, then the owner or operator must comply with the requirements in paragraph (g)(3)(i) of this section. If an owner or operator complies with the total hydrocarbon mass emissions rate leak action level as specified in paragraph (g)(4) of this section, then the owner or operator must comply with the requirements in paragraphs (g)(3)(i) and (ii) of this section.

- (i) Owners and operators must determine the total strippable hydrocarbon concentration (in parts per million by volume (ppmv) as methane) at each monitoring location using the "Air Stripping Method (Modified El Paso Method) for Determination of Volatile Organic Compound Emissions from Water Sources" (incorporated by reference—see § 63.14) using a flame ionization detector (FID) analyzer for on-site determination as described in Section 6.1 of the Modified El Paso Method.
 - (ii) Owners and operators must convert the total strippable hydrocarbon concentration (in ppmv as methane) to a total hydrocarbon mass emissions rate (as methane) using the calculations in Section 7.0 of "Air Stripping Method (Modified El Paso Method) for Determination of Volatile Organic Compound Emissions from Water Sources" (incorporated by reference—see § 63.14).
- (4) Except as specified in paragraph (g)(6) of this section, for each heat exchange system, owners and operators must initially monitor monthly for 6-months beginning upon startup and monitor quarterly thereafter using a leak action level defined as a total strippable hydrocarbon concentration (as methane) in the stripping gas of 6.2 ppmv or, for heat exchange systems with a recirculation rate of 10,000 gallons per minute or less, the owner or operator may monitor quarterly using a leak action level defined as a total hydrocarbon mass emissions rate from the heat exchange system (as methane) of 0.18 kg/hr. If a leak is detected as specified in paragraph (g)(5) of this section, then owners and operators must monitor monthly until the leak has been repaired according to the requirements in paragraph (h) or (i) of this section. Once the leak has been repaired according to the requirements in paragraph (h) or (i) of this section, quarterly monitoring for the heat exchange system may resume. The monitoring frequencies specified in this paragraph also apply to the inlet water feed line for a once-through heat exchange system, if monitoring of the inlet water feed is elected as provided in paragraph (g)(2)(ii) of this section.
- (5) A leak is defined as described in paragraph (g)(5)(i) or (ii) of this section, as applicable.
 - (i) For once-through heat exchange systems for which the inlet water feed is monitored as described in paragraph (g)(2)(ii) of this section, a leak is detected if the difference in the measurement value of the sample taken from a location specified in paragraph (g)(2)(i) of this section and the measurement value of the corresponding sample taken from the location specified in paragraph (g)(2)(ii) of this section equals or exceeds the leak action level.
 - (ii) For all other heat exchange systems, a leak is detected if a measurement value of the sample taken from a location specified in paragraph (g)(1)(i) or (ii) or (g)(2)(i) of this section equals or exceeds the leak action level.
- (6) For heat exchange systems in ethylene oxide service, as defined in § 63.101, the monitoring frequency is weekly.
- (h) If a leak is detected using the methods described in paragraph (g) of this section, owners and operators must repair the leak to reduce the concentration or mass emissions rate to below the applicable leak action level as soon as practicable, but no later than 45 days after identifying the leak, except as specified in paragraph (h)(6) or (j) of this section. Repair must include re-monitoring at the monitoring location where the leak was identified according to the method specified in paragraph (g)(3) of this section to verify that the total strippable hydrocarbon concentration or total hydrocarbon mass emissions rate is below the applicable leak action level. Repair may also include performing the additional monitoring in paragraph (i) of this section to verify that the total strippable hydrocarbon concentration or total hydrocarbon mass emissions rate is below the applicable leak action level. Actions that can be taken to achieve repair include but are not limited to:

- (1) Physical modifications to the leaking heat exchanger, such as welding the leak or replacing a tube;
- (2) Blocking the leaking tube within the heat exchanger;
- (3) Changing the pressure so that water flows into the process fluid;
- (4) Replacing the heat exchanger or heat exchanger bundle; or
- (5) Isolating, bypassing, or otherwise removing the leaking heat exchanger from service until it is otherwise repaired.
- (6) For heat exchange systems in ethylene oxide service, as defined in § 63.101, paragraph (j) of this section does not apply, and owners and operators must repair the leak to reduce the concentration or mass emissions rate to below the applicable leak action level as soon as practicable, but no later than 15 days after the sample was collected. Delay of repair of heat exchange systems in ethylene oxide service for which leaks have been detected is allowed if the equipment is isolated from the process such that it is no longer in ethylene oxide service.
- (i) If an owner or operator detects a leak when monitoring a cooling tower return line under paragraph (g)(1)(i) of this section, then the owner or operator may conduct additional monitoring of each heat exchanger or group of heat exchangers associated with the heat exchange system for which the leak was detected, as provided in paragraph (g)(1)(ii) of this section. If no leaks are detected when monitoring according to the requirements of paragraph (g)(1)(ii) of this section, the heat exchange system is considered to have met the repair requirements through re-monitoring of the heat exchange system, as provided in paragraph (h) of this section.
- (j) Owners and operators may delay repair when one of the conditions in paragraph (j)(1) or (2) of this section is met and the leak is less than the delay of repair action level specified in paragraph (j)(3) of this section. Owners and operators must determine if a delay of repair is necessary as soon as practicable, but no later than 45 days after first identifying the leak.
 - (1) If the repair is technically infeasible without a shutdown and the total strippable hydrocarbon concentration or total hydrocarbon mass emissions rate is initially and remains less than the delay of repair action level for all monitoring periods during the delay of repair, then the owner or operator may delay repair until the next scheduled shutdown of the heat exchange system. If, during subsequent monitoring, the delay of repair action level is exceeded, then owners and operators must repair the leak within 30 days of the monitoring event in which the leak was equal to or exceeded the delay of repair action level.
 - (2) If the necessary equipment, parts, or personnel are not available and the total strippable hydrocarbon concentration or total hydrocarbon mass emissions rate is initially and remains less than the delay of repair action level for all monitoring periods during the delay of repair, then the owner or operator may delay the repair for a maximum of 120 calendar days. Owners and operators must demonstrate that the necessary equipment, parts, or personnel were not available. If, during subsequent monitoring, the delay of repair action level is exceeded, then owners and operators must repair the leak within 30 days of the monitoring event in which the leak was equal to or exceeded the delay of repair action level.

- (3) The delay of repair action level is a total strippable hydrocarbon concentration (as methane) in the stripping gas of 62 ppmv or, for heat exchange systems with a recirculation rate of 10,000 gallons per minute or less, the delay of repair action level is a total hydrocarbon mass emissions rate (as methane) of 1.8 kg/hr. The delay of repair action level is assessed as described in paragraph (j)(3)(i) or (ii) of this section, as applicable.
 - (i) For once-through heat exchange systems for which the inlet water feed is monitored as described in paragraph (g)(2)(ii) of this section, the delay of repair action level is exceeded if the difference in the measurement value of the sample taken from a location specified in paragraph (g)(2)(i) of this section and the measurement value of the corresponding sample taken from the location specified in paragraph (g)(2)(ii) of this section equals or exceeds the delay of repair action level.
 - (ii) For all other heat exchange systems, the delay of repair action level is exceeded if a measurement value of the sample taken from a location specified in paragraph (g)(1)(i), (1)(ii), or (2)(i) of this section equals or exceeds the delay of repair action level.
- (k) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(11), owners and operators must not inject water into or dispose of water through any heat exchange system in a chemical manufacturing process unit meeting the conditions of § 63.100(b)(1) through (3) if the water contains any amount of ethylene oxide, has been in contact with any process stream containing ethylene oxide, or the water is considered wastewater as defined in § 63.101.
- (l) If 99 percent by weight or more of the organic compounds that could leak into the heat exchange system are water soluble and have a Henry's Law Constant less than 5.0E-6 atmospheres-cubic meters/mol at 25 degrees Celsius, beginning no later than the compliance dates specified in § 63.100(k)(10), owners and operators may monitor the cooling water for leaks according to the requirements in paragraph (b) of this section in lieu of using the Modified El Paso Method. If an owner or operator detects a leak according to paragraph (b) of this section, then the owner or operator must repair it according to paragraph (l)(1) of this section, unless repair is delayed according to paragraph (l)(2) of this section.
 - (1) If a leak is detected using the methods described in paragraph (l) of this section, the owner or operator must repair the leak as soon as practicable, but no later than 45 days after identifying the leak, except as specified in paragraph (l)(2) of this section. Repair must include re-monitoring at the monitoring location where the leak was identified to verify that the criteria in paragraph (b)(6) of this section is no longer met. Actions that can be taken to achieve repair include but are not limited to:
 - (i) Physical modifications to the leaking heat exchanger, such as welding the leak or replacing a tube;
 - (ii) Blocking the leaking tube within the heat exchanger;
 - (iii) Changing the pressure so that water flows into the process fluid;
 - (iv) Replacing the heat exchanger or heat exchanger bundle; or
 - (v) Isolating, bypassing, or otherwise removing the leaking heat exchanger from service until it is otherwise repaired.
 - (2) The owner or operator may delay repair when the conditions in paragraph (e) of this section are met.

[62 FR 2733, Jan. 17, 1997, as amended at 89 FR 43166, May 16, 2024]

§ 63.105 Maintenance wastewater requirements.

- (a) Each owner or operator of a source subject to this subpart shall comply with the requirements of paragraphs (b) through (e) of this section for maintenance wastewaters containing those organic HAP's listed in table 9 of subpart G of this part.
- (b) The owner or operator shall prepare a description of maintenance procedures for management of wastewaters generated from the emptying and purging of equipment in the process during temporary shutdowns for inspections, maintenance, and repair (i.e., a maintenance-turnaround) and during periods which are not shutdowns (i.e., routine maintenance). The descriptions shall:
 - (1) Specify the process equipment or maintenance tasks that are anticipated to create wastewater during maintenance activities.
 - (2) Specify the procedures that will be followed to properly manage the wastewater and control organic HAP emissions to the atmosphere; and
 - (3) Specify the procedures to be followed when clearing materials from process equipment.
- (c) The owner or operator shall modify and update the information required by paragraph (b) of this section as needed following each maintenance procedure based on the actions taken and the wastewaters generated in the preceding maintenance procedure.
- (d) The owner or operator shall incorporate the procedures described in paragraphs (b) and (c) of this section as part of the startup, shutdown, and malfunction plan required under § 63.6(e)(3). For each source as defined in § 63.101, on and after July 15, 2027, this paragraph no longer applies.
- (e) The owner or operator shall maintain a record of the information required by paragraphs (b) and (c) of this section as part of the start-up, shutdown, and malfunction plan required under § 63.6(e)(3). For each source as defined in § 63.101, on and after July 15, 2027, the phrase "as part of the start-up, shutdown, and malfunction plan required under § 63.6(e)(3)" in this paragraph no longer applies.

[59 FR 19454, Apr. 22, 1994, as amended at 60 FR 63626, Dec. 12, 1995; 71 FR 20456, Apr. 20, 2006; 89 FR 43169, May 16, 2024]

§ 63.106 Implementation and enforcement.

- (a) This subpart can be implemented and enforced by the U.S. EPA, or a delegated authority such as the applicable State, local, or Tribal agency. If the U.S. EPA Administrator has delegated authority to a State, local, or Tribal agency, then that agency, in addition to the U.S. EPA, has the authority to implement and enforce this subpart. Contact the applicable U.S. EPA Regional Office to find out if implementation and enforcement of this subpart is delegated to a State, local, or Tribal agency.
- (b) In delegating implementation and enforcement authority of this subpart to a State, local, or Tribal agency under subpart E of this part, the authorities contained in paragraph (c) of this section are retained by the Administrator of U.S. EPA and cannot be transferred to the State, local, or Tribal agency.
- (c) The authorities that cannot be delegated to State, local, or Tribal agencies are as specified in paragraphs (c)(1) through (4) of this section.
 - (1) Approval of alternatives to requirements in §§ 63.100, 63.102, and 63.104. Where these standards reference another subpart, the cited provisions will be delegated according to the delegation provisions of the referenced subpart.

- (2) Approval of major alternatives to test methods under § 63.7(e)(2)(ii) and (f), as defined in § 63.90, and as required in this subpart.
- (3) Approval of major alternatives to monitoring under § 63.8(f), as defined in § 63.90, and as required in this subpart.
- (4) Approval of major alternatives to recordkeeping and reporting under § 63.10(f), as defined in § 63.90, and as required in this subpart.

[68 FR 37344, June 23, 2003]

§ 63.107 Identification of process vents subject to this subpart.

- (a) The owner or operator shall use the criteria specified in this § 63.107 to determine whether there are any process vents associated with an air oxidation reactor, distillation unit, or reactor that is in a source subject to this subpart. A process vent is the point of discharge to the atmosphere (or the point of entry into a control device, if any) of a gas stream if the gas stream has the characteristics specified in paragraphs (b) through (h) of this section, or meets the criteria specified in paragraph (i) of this section.
- (b) Some, or all, of the gas stream originates as a continuous flow from an air oxidation reactor, distillation unit, or reactor during operation of the chemical manufacturing process unit.
- (c) The discharge to the atmosphere (with or without passing through a control device) meets at least one of the conditions specified in paragraphs (c)(1) through (3) of this section.
 - (1) Is directly from an air oxidation reactor, distillation unit, or reactor; or
 - (2) Is from an air oxidation reactor, distillation unit, or reactor after passing solely (i.e., without passing through any other unit operation for a process purpose) through one or more recovery devices within the chemical manufacturing process unit; or
 - (3) Is from a device recovering only mechanical energy from a gas stream that comes either directly from an air oxidation reactor, distillation unit, or reactor, or from an air oxidation reactor, distillation unit, or reactor after passing solely (i.e., without passing through any other unit operation for a process purpose) through one or more recovery devices within the chemical manufacturing process unit.
- (d) The gas stream contains greater than 0.005 weight percent total organic HAP at the point of discharge to the atmosphere (or at the point of entry into a control device, if any).
- (e) The air oxidation reactor, distillation unit, or reactor is part of a chemical manufacturing process unit that meets the criteria of § 63.100(b).
- (f) The gas stream is in the gas phase from the point of origin at the air oxidation reactor, distillation unit, or reactor to the point of discharge to the atmosphere (or to the point of entry into a control device, if any).
- (g) The gas stream is discharged to the atmosphere either on-site, off-site, or both.
- (h) The gas stream is not any of the items identified in paragraphs (h)(1) through (9) of this section.
 - (1) A relief valve discharge.
 - (2) A leak from equipment subject to subpart H of this part.
 - (3) A gas stream going to a fuel gas system as defined in § 63.101.

- (4) A gas stream exiting a control device used to comply with § 63.113.
- (5) A gas stream transferred to other processes (on-site or off-site) for reaction or other use in another process (i.e., for chemical value as a product, isolated intermediate, byproduct, or coproduct, or for heat value).
- (6) A gas stream transferred for fuel value (i.e., net positive heating value), use, reuse, or for sale for fuel value, use, or reuse.
- (7) A storage vessel vent or transfer operation vent subject to § 63.119 or § 63.126.
- (8) A vent from a waste management unit subject to §§ 63.132 through 63.137.
- (9) A gas stream exiting an analyzer.
- (i) Except as specified in paragraph (j) of this section, the gas stream would meet the characteristics specified in paragraphs (b) through (g) of this section, but, for purposes of avoiding applicability, has been deliberately interrupted, temporarily liquefied, routed through any item of equipment for no process purpose, or disposed of in a flare that does not meet the criteria in § 63.11(b), or an incinerator that does not reduce emissions of organic HAP by 98 percent or to a concentration of 20 parts per million by volume, whichever is less stringent.
- (j) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), the phrase “disposed of in a flare that does not meet the criteria in § 63.11(b)” in paragraph (i) of this section is replaced with “disposed of in a flare that does not meet the criteria in § 63.108”.

[66 FR 6928, Jan. 22, 2001, as amended at 89 FR 43169, May 16, 2024]

§ 63.108 Flare requirements.

- (a) For any flare that is used to reduce organic HAP emissions from a chemical manufacturing process unit, the owner or operator may elect to comply with the requirements in this section in lieu of the requirements of § 63.11(b) and the requirements referenced therein. The owner or operator may also elect to comply with the requirements in this section pursuant to the overlap provisions provided in § 63.110(j). However, for each source as defined in § 63.101 and for each source as defined in § 63.191, beginning no later than the compliance dates specified in § 63.100(k)(10), the provisions specified in paragraphs (a)(1) through (22) of this section no longer apply. Instead, if an owner or operator reduces organic HAP emissions from a chemical manufacturing process unit by venting emissions through a closed-vent system to a steam-assisted, air-assisted, non-assisted, or pressure-assisted multi-point flare, then the owner or operator must meet the applicable requirements for flares as specified in §§ 63.670 and 63.671, including the provisions in tables 12 and 13 to subpart CC of this part, except as specified in paragraphs (b) through (o) of this section. This requirement also applies to any flare using fuel gas from a fuel gas system, of which 50 percent or more of the fuel gas is derived from a chemical manufacturing process unit, as determined on an annual average basis. For purposes of compliance with this paragraph, the following terms are defined in § 63.641: Assist air, assist steam, center steam, combustion zone, combustion zone gas, flare, flare purge gas, flare supplemental gas, flare sweep gas, flare vent gas, lower steam, net heating value, perimeter assist air, pilot gas, premix assist air, total steam, and upper steam.
- (1) Section 63.107(i) related to criteria in § 63.11(b);
- (2) Section 63.113(a)(1);
- (3) Section 63.114(a)(2);

- (4) Section 63.116(a)(1) through (3);
 - (5) Section 63.117(a)(5)(i) through (iii);
 - (6) Section 63.118(f)(5);
 - (7) The last sentence in § 63.119(e)(1) related to flares;
 - (8) Section 63.120(e)(1) through (6);
 - (9) Section 63.122(c)(2) and (g)(3);
 - (10) Section 63.126(b)(2)(i);
 - (11) Section 63.127(a)(2);
 - (12) Section 63.128(b)(1) through (3);
 - (13) Section 63.129(a)(5)(i) through (iii);
 - (14) Section 63.130(a)(2)(i), (c), and (d)(5);
 - (15) Section 63.139(c)(3) and (d)(3);
 - (16) Section 63.145(j)(1) through (3);
 - (17) Section 63.146(b)(7)(i)(A) through (C);
 - (18) V63.147(d)(1);
 - (19) Section 63.172(d);
 - (20) Section 63.180(e)(1) through (3);
 - (21) Section 63.181(g)(1)(iii); and
 - (22) The phrase “including periods when a flare pilot light system does not have a flame” in § 63.181(g)(2)(i) of subpart H of this part.
- (b) When determining compliance with the pilot flame requirements specified in § 63.670(b) and (g), substitute “pilot flame or flare flame” for each occurrence of “pilot flame.”
 - (c) When determining compliance with the flare tip velocity and combustion zone operating limits specified in § 63.670(d) and (e), the requirement effectively applies starting with the 15-minute block that includes a full 15 minutes of the flaring event. The owner or operator is required to demonstrate compliance with the velocity and NHVcz requirements starting with the block that contains the fifteenth minute of a flaring event. The owner or operator is not required to demonstrate compliance for the previous 15-minute block in which the event started and contained only a fraction of flow.
 - (d) Instead of complying with § 63.670(o)(2)(i), owners and operators must develop and implement the flare management plan no later than the compliance dates specified in § 63.100(k)(10).
 - (e) Instead of complying with § 63.670(o)(2)(iii), if required to develop a flare management plan and submit it to the Administrator, then owners and operators must also submit all versions of the plan in portable document format (PDF) to the EPA following the procedure specified in § 63.9(k), except any medium submitted through mail must be sent to the attention of the Hazardous Organic Chemical Manufacturing Sector Lead.

- (f) Section 63.670(o)(3)(ii) and all references to it do not apply. Instead, the owner or operator must comply with the maximum flare tip velocity operating limit at all times.
- (g) Substitute “chemical manufacturing process unit” for each occurrence of “petroleum refinery.”
- (h) Each occurrence of “refinery” does not apply.
- (i) If a pressure-assisted multi-point flare is used as a control device, then owners and operators must meet the following conditions:
 - (1) The owner or operator is not required to comply with the flare tip velocity requirements in § 63.670(d) and (k);
 - (2) The NHVcz for pressure-assisted multi-point flares is 800 Btu/scf;
 - (3) Owners and operators must determine the 15-minute block average NHVvg using only the direct calculation method specified in § 63.670(l)(5)(ii);
 - (4) Instead of complying with § 63.670(b) and (g), if a pressure-assisted multi-point flare uses cross-lighting on a stage of burners rather than having an individual pilot flame on each burner, then owners and operators must operate each stage of the pressure-assisted multi-point flare with a flame present at all times when regulated material is routed to that stage of burners. Each stage of burners that cross-lights in the pressure-assisted multi-point flare must have at least two pilots with at least one continuously lit and capable of igniting all regulated material that is routed to that stage of burners. Each 15-minute block during which there is at least one minute where no pilot flame is present on a stage of burners when regulated material is routed to the flare is a violation of the standard. Violations in different 15-minute blocks from the same event are considered separate violations. The pilot flame(s) on each stage of burners that use cross-lighting must be continuously monitored by a thermocouple or any other equivalent device used to detect the presence of a flame;
 - (5) Unless the owner or operator chooses to conduct a cross-light performance demonstration as specified in this paragraph, owners and operators must ensure that if a stage of burners on the flare uses cross-lighting, that the distance between any two burners in series on that stage is no more than 6 feet when measured from the center of one burner to the next burner. A distance greater than 6 feet between any two burners in series may be used provided the owner or operator conducts a performance demonstration that confirms the pressure-assisted multi-point flare will cross-light a minimum of three burners and the spacing between the burners and location of the pilot flame must be representative of the projected installation. The compliance demonstration must be approved by the permitting authority and a copy of this approval must be maintained onsite. The compliance demonstration report must include: a protocol describing the test methodology used, associated test method QA/QC parameters, the waste gas composition and NHVcz of the gas tested, the velocity of the waste gas tested, the pressure-assisted multi-point flare burner tip pressure, the time, length, and duration of the test, records of whether a successful cross-light was observed over all of the burners and the length of time it took for the burners to cross-light, records of maintaining a stable flame after a successful cross-light and the duration for which this was observed, records of any smoking events during the cross-light, waste gas temperature, meteorological conditions (e.g., ambient temperature, barometric pressure, wind speed and direction, and relative humidity), and whether there were any observed flare flameouts; and

- (6) Owners and operators must install and operate pressure monitor(s) on the main flare header, as well as a valve position indicator monitoring system for each staging valve to ensure that the flare operates within the proper range of conditions as specified by the manufacturer. The pressure monitor must meet the requirements in table 13 to subpart CC of this part.
- (7) If a pressure-assisted multi-point flare is operating under the requirements of an approved alternative means of emission limitations, owners and operators must either continue to comply with the terms of the alternative means of emission limitations or comply with the provisions in paragraphs (i)(1) through (6) of this section.
- (j) If an owner or operator chooses to determine compositional analysis for net heating value with a continuous process mass spectrometer, then the owner or operator must comply with the requirements specified in paragraphs (j)(1) through (7) of this section.
 - (1) Owners and operators must meet the requirements in § 63.671(e)(2). The owner or operator may augment the minimum list of calibration gas components found in § 63.671(e)(2) with compounds found during a pre-survey or known to be in the gas through process knowledge.
 - (2) Calibration gas cylinders must be certified to an accuracy of 2 percent and traceable to National Institute of Standards and Technology (NIST) standards.
 - (3) For unknown gas components that have similar analytical mass fragments to calibration compounds, the owner or operator may report the unknowns as an increase in the overlapped calibration gas compound. For unknown compounds that produce mass fragments that do not overlap calibration compounds, the owner or operator may use the response factor for the nearest molecular weight hydrocarbon in the calibration mix to quantify the unknown component's NHVvg.
 - (4) The owner or operator may use the response factor for n-pentane to quantify any unknown components detected with a higher molecular weight than n-pentane.
 - (5) Owners and operators must perform an initial calibration to identify mass fragment overlap and response factors for the target compounds.
 - (6) Owners and operators must meet applicable requirements in Performance Specification 9 in appendix B to part 60 of this chapter for continuous monitoring system acceptance including, but not limited to, performing an initial multi-point calibration check at three concentrations following the procedure in section 10.1 and performing the periodic calibration requirements listed for gas chromatographs in table 13 to subpart CC of this part, for the process mass spectrometer. The owner or operator may use the alternative sampling line temperature allowed under Net Heating Value by Gas Chromatograph in table 13 to subpart CC of this part.
 - (7) The average instrument calibration error (CE) for each calibration compound at any calibration concentration must not differ by more than 10 percent from the certified cylinder gas value. The CE for each component in the calibration blend must be calculated using equation 1 to this paragraph.

Equation 1 to Paragraph (j)(7)

$$CE = \frac{C_m - C_a}{C_a} \times 100 \text{ (Eq. 1)}$$

Where:

C_m = Average instrument response (ppm)

C_a = Certified cylinder gas value (ppm)

- (k) If an owner or operator use a gas chromatograph or mass spectrometer for compositional analysis for net heating value, then the owner or operator may choose to use the CE of $NHV_{measured}$ versus the cylinder tag value NHV_a as the measure of agreement for daily calibration and quarterly audits in lieu of determining the compound-specific CE. The CE for NHV at any calibration level must not differ by more than 10 percent from the certified cylinder gas value. The CE for must be calculated using equation 2 to this paragraph.

Equation 2 to Paragraph (k)

$$CE = \frac{NHV_{measured} - NHV_a}{NHV_a} \times 100 \text{ (Eq. 2)}$$

Where:

$NHV_{measured}$ = Average instrument response (Btu/scf)

NHV_a = Certified cylinder gas value (Btu/scf)

- (l) Instead of complying with § 63.670(q), owners and operators must comply with the reporting requirements specified in paragraphs (l)(1) and (2) of this section.
- (1) The initial notification requirements specified in § 63.152(b)(7).
- (2) The Periodic Report required by § 63.152(c) must include the items specified in paragraphs (l)(2)(i) through (vi) of this section.
- (i) Records as specified in paragraph (m)(1) of this section for each 15-minute block during which there was at least one minute when regulated material is routed to a flare and no pilot flame or flare flame is present. Include the start and stop time and date of each 15-minute block.
- (ii) Visible emission records as specified in paragraph (m)(2)(iv) of this section for each period of 2 consecutive hours during which visible emissions exceeded a total of 5 minutes. Indicate the date and start and end times for each period.
- (iii) The periods specified in paragraph (m)(6) of this section. Indicate the date and start and end times for each period, and the net heating value operating parameter(s) determined following the methods in § 63.670(k) through (n) as applicable.
- (iv) For flaring events meeting the criteria in § 63.670(o)(3) and paragraph (f) of this section:
- (A) The start and stop time and date of the flaring event.
- (B) The length of time in minutes for which emissions were visible from the flare during the event.

- (C) For steam-assisted, air-assisted, and non-assisted flares, the start date, start time, and duration in minutes for periods of time that the flare tip velocity exceeds the maximum flare tip velocity determined using the methods in § 63.670(d)(2) and the maximum 15-minute block average flare tip velocity in ft/sec recorded during the event.
- (D) Results of the root cause and corrective actions analysis completed during the reporting period, including the corrective actions implemented during the reporting period and, if applicable, the implementation schedule for planned corrective actions to be implemented subsequent to the reporting period.
- (v) For pressure-assisted multi-point flares, the periods of time when the pressure monitor(s) on the main flare header show the burners operating outside the range of the manufacturer's specifications. Indicate the date and start and end times for each period.
- (vi) For pressure-assisted multi-point flares, the periods of time when the staging valve position indicator monitoring system indicates a stage should not be in operation and is or when a stage should be in operation and is not. Indicate the date and start and end times for each period.
- (m) Instead of complying with § 63.670(p), owners and operators must keep the flare monitoring records specified in paragraphs (m)(1) through (14) of this section.
 - (1) Retain records of the output of the monitoring device used to detect the presence of a pilot flame or flare flame as required in § 63.670(b) and the presence of a pilot flame as required in paragraph (i)(4) of this section for a minimum of 2 years. Retain records of each 15-minute block during which there was at least one minute that no pilot flame or flare flame is present when regulated material is routed to a flare for a minimum of 5 years. For a pressure-assisted multi-point flare that uses cross-lighting, retain records of each 15-minute block during which there was at least one minute that no pilot flame is present on each stage when regulated material is routed to a flare for a minimum of 5 years. The owner or operator may reduce the collected minute-by-minute data to a 15-minute block basis with an indication of whether there was at least one minute where no pilot flame or flare flame was present.
 - (2) Retain records of daily visible emissions observations as specified in paragraphs (m)(2)(i) through (iv) of this section, as applicable, for a minimum of 3 years.
 - (i) To determine when visible emissions observations are required, the record must identify all periods when regulated material is vented to the flare.
 - (ii) If visible emissions observations are performed using Method 22 in appendix A-7 to part 60 of this chapter, then the record must identify whether the visible emissions observation was performed, the results of each observation, total duration in minutes of observed visible emissions, and whether it was a 5-minute or 2-hour observation. Record the date and start time of each visible emissions observation.
 - (iii) If a video surveillance camera is used pursuant to § 63.670(h)(2), then the record must include all video surveillance images recorded, with time and date stamps.
 - (iv) For each 2-hour period for which visible emissions are observed for more than 5 minutes in 2 consecutive hours, then the record must include the date and start and end time of the 2-hour period and an estimate of the cumulative number of minutes in the 2-hour period for which emissions were visible.

- (3) The 15-minute block average cumulative flows for flare vent gas and, if applicable, total steam, perimeter assist air, and premix assist air specified to be monitored under § 63.670(i), along with the date and time interval for the 15-minute block. If multiple monitoring locations are used to determine cumulative vent gas flow, total steam, perimeter assist air, and premix assist air, then retain records of the 15-minute block average flows for each monitoring location for a minimum of 2 years and retain the 15-minute block average cumulative flows that are used in subsequent calculations for a minimum of 5 years. If pressure and temperature monitoring is used, then retain records of the 15-minute block average temperature, pressure, and molecular weight of the flare vent gas or assist gas stream for each measurement location used to determine the 15-minute block average cumulative flows for a minimum of 2 years, and retain the 15-minute block average cumulative flows that are used in subsequent calculations for a minimum of 5 years.
- (4) The flare vent gas compositions specified to be monitored under § 63.670(j). Retain records of individual component concentrations from each compositional analysis for a minimum of 2 years. If an NHVvg analyzer is used, retain records of the 15-minute block average values for a minimum of 5 years.
- (5) Each 15-minute block average operating parameter calculated following the methods specified in § 63.670(k) through (n) as applicable.
- (6) All periods during which operating values are outside of the applicable operating limits specified in § 63.670(d) through (f) and paragraph (i) of this section when regulated material is being routed to the flare.
- (7) All periods during which the owner or operator does not perform flare monitoring according to the procedures in § 63.670(g) through (j).
- (8) For pressure-assisted multi-point flares, if a stage of burners on the flare uses cross-lighting, then a record of any changes made to the distance between burners.
- (9) For pressure-assisted multi-point flares, all periods when the pressure monitor(s) on the main flare header show burners are operating outside the range of the manufacturer's specifications. Indicate the date and time for each period, the pressure measurement, the stage(s) and number of burners affected, and the range of manufacturer's specifications.
- (10) For pressure-assisted multi-point flares, all periods when the staging valve position indicator monitoring system indicates a stage of the pressure-assisted multi-point flare should not be in operation and when a stage of the pressure-assisted multi-point flare should be in operation and is not. Indicate the date and time for each period, whether the stage was supposed to be open, but was closed or vice versa, and the stage(s) and number of burners affected.
- (11) Records of periods when there is flow of vent gas to the flare, but when there is no flow of regulated material to the flare, including the start and stop time and dates of periods of no regulated material flow.
- (12) Records when the flow of vent gas exceeds the smokeless capacity of the flare, including start and stop time and dates of the flaring event.

- (13) Records of the root cause analysis and corrective action analysis conducted as required in § 63.670(o)(3) and paragraph (f) of this section, including an identification of the affected flare, the date and duration of the event, a statement noting whether the event resulted from the same root cause(s) identified in a previous analysis and either a description of the recommended corrective action(s) or an explanation of why corrective action is not necessary under § 63.670(o)(5)(i).
- (14) For any corrective action analysis for which implementation of corrective actions are required in § 63.670(o)(5), a description of the corrective action(s) completed within the first 45 days following the discharge and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates.
- (n) The owner or operator may elect to comply with the alternative means of emissions limitation requirements specified in § 63.670(r) in lieu of the requirements in § 63.670(d) through (f), as applicable. However, instead of complying with § 63.670(r)(3)(iii), owners and operators must also submit the alternative means of emissions limitation request to the following address: U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Sector Policies and Programs Division, U.S. EPA Mailroom (C404-02), Attention: Hazardous Organic Chemical Manufacturing Sector Lead, 4930 Old Page Rd., Durham, NC 27703.
- (o) The referenced provisions specified in paragraphs (o)(1) through (4) of this section do not apply when demonstrating compliance with this section.
 - (1) Section 63.670(o)(4)(iv) of subpart CC of this part.
 - (2) The last sentence of § 63.670(o)(6).
 - (3) The phrase “that were not caused by a *force majeure* event” in § 63.670(o)(7)(ii).
 - (4) The phrase “that were not caused by a *force majeure* event” in § 63.670(o)(7)(iv).

[89 FR 43169, May 16, 2024]

§ 63.109 Procedures for determining whether process vents, storage vessels, equipment, wastewater, and heat exchange systems are in ethylene oxide service.

This section applies beginning no later than the compliance dates specified in § 63.100(k)(11). To determine if process vents, storage vessels, equipment leaks, wastewater, and heat exchange systems are in ethylene oxide service, as defined in § 63.101, owners and operators must comply with the requirements in paragraphs (a) through (e) of this section, as applicable.

- (a) Except as specified in paragraph (a)(7) of this section, for each Group 1 and Group 2 process vent stream, owners and operators must measure the flow rate and concentration of ethylene oxide of each process vent as specified in paragraphs (a)(1) through (6) of this section.
 - (1) Measurements must be made prior to any dilution of the vent streams.
 - (2) Measurements may be made on the combined vent streams at a chemical manufacturing process unit or for each separate vent stream.

- (3) The sampling site shall be after the last recovery device (if any recovery devices are present) but prior to the inlet of any control device that is present and prior to release to the atmosphere. Method 1 or 1A of appendix A-1 to part 60 of this chapter, as appropriate, must be used for the selection of the sampling sites. For vents smaller than 0.10 meter in diameter, sample at one point at the center of the duct.
- (4) The gas volumetric flow rate must be determined using Method 2, 2A, 2C, 2D, 2F, or 2G of appendices A-1 and A-2 to part 60 of this chapter (respectively), as appropriate.
- (5) Except as specified in paragraph (a)(6) of this section, the concentration of ethylene oxide must be determined using Method 18 of appendix A-6 to part 60 of this chapter, or Method 320 of appendix A to this part.
- (6) You may elect to use ASTM D6348-12 (Reapproved 2020) (incorporated by reference, § 63.14) in lieu of Method 320 of appendix A to this part as specified in paragraph (a)(5) of this section. To comply with this paragraph, annexes A1 through A8 to ASTM D6348-12 (Reapproved 2020) are mandatory; the percent (%) R must be determined for each target analyte using Equation A5.5 of ASTM D6348-12 (Reapproved 2020) Annex A5 (Analyte Spiking Technique); and in order for the test data to be acceptable for a compound, the %R must be $70\% \leq R \leq 130\%$. If the %R value does not meet this criterion for a target compound, then the test data is not acceptable for that compound and the test must be repeated for that analyte (i.e., the sampling and/or analytical procedure should be adjusted before a retest). The %R value for each compound must be reported in the test report, and all field measurements must be corrected with the calculated %R value for that compound by using the following equation:

Equation 1 to Paragraph (a)(6)

Reported Results = (Measured Concentration in the Stack × 100)/%R.

- (7) The requirements specified in paragraphs (a)(1) through (6) of this section for an initial measurement or initial performance test do not apply if the conditions specified in paragraphs (a)(7)(i) through (iv) of this section are met for a previously conducted measurement or performance test.
 - (i) No changes have been made to the process since the time of the measurement or performance test;
 - (ii) The operating conditions and test methods used during measurement or performance test conform to the ethylene oxide related requirements of this subpart;
 - (iii) The control device and process parameter values established during the previously conducted measurement or performance test are used to demonstrate continuous compliance with the ethylene oxide related requirements of this subpart; and
 - (iv) The previously conducted measurement or performance test was completed within the last 60 months.
- (b) For storage vessels, owners and operators must determine the concentration of ethylene oxide of the fluid stored in the storage vessels by complying with the requirements in paragraph (b)(1) or (2) of this section.

- (1) The owner or operator must measure concentration of ethylene oxide of the fluid stored in the storage vessel using Method 624.1 of appendix A to 40 CFR part 136, or preparation by Method SW-846-5031 or SW-846-5030B and analysis by Method SW-846-8260D (incorporated by reference, see § 63.14). The owner or operator may not use a preservative in the collected sample; the owner or operator must store the sample with minimal headspace as cold as possible and at least below 4 degrees C; and the owner or operator must analyze the sample as soon as possible, but in no case longer than 7 days from the time the sample was collected. If owners and operators collect a sample from a pressure vessel, then the owner or operator must maintain the sample under pressure both during and following sampling.
 - (2) Unless specified by the Administrator, the owner or operator may calculate the concentration of ethylene oxide of the fluid stored in the storage vessels if information specific to the fluid stored is available. Information specific to the fluid stored includes concentration data from safety data sheets.
- (c) For equipment leaks, owners and operators must comply with the requirements in paragraphs (c)(1) through (4) of this section.
- (1) Each piece of equipment within a chemical manufacturing process unit that can reasonably be expected to contain equipment in ethylene oxide service is presumed to be in ethylene oxide service unless the owner or operator demonstrates that the piece of equipment is not in ethylene oxide service. For a piece of equipment to be considered not in ethylene oxide service, it must be determined that the percent ethylene oxide content of the process fluid that is contained in or contacts equipment can be reasonably expected to not exceed 0.1 percent by weight on an annual average basis. For purposes of determining the percent ethylene oxide content of the process fluid, owners and operators must use Method 18 of appendix A-6 to part 60 of this chapter, for gaseous process fluid, and Method 624.1 of appendix A to part 136 of this chapter, or preparation by Method SW-846-5031 and analysis by Method SW-846-8260D (both incorporated by reference, see § 63.14) for liquid process fluid. In lieu of preparation by Method SW-846-5031, owners and operators may use Method SW-846-5030B (incorporated by reference, see § 63.14), as long as: the owner or operator does not use a preservative in the collected sample; the owner or operator stores the sample with minimal headspace as cold as possible and at least below 4 degrees C; and the owner or operator analyzes the sample as soon as possible, but in no case longer than 7 days from the time the sample was collected.
 - (2) Unless specified by the Administrator, owners and operators may use good engineering judgment rather than the procedures specified in paragraph (c)(1) of this section to determine that the percent ethylene oxide content of the process fluid that is contained in or contacts equipment does not exceed 0.1 percent by weight.
 - (3) Owners and operators may revise a determination for whether a piece of equipment is in ethylene oxide service by following the procedures in paragraph (c)(1) of this section, or by documenting that a change in the process or raw materials no longer causes the equipment to be in ethylene oxide service.
 - (4) Samples used in determining the ethylene oxide content must be representative of the process fluid that is contained in or contacts the equipment.
- (d) For wastewater, owners and operators must determine the concentration of ethylene oxide of each wastewater stream using Method 624.1 of appendix A to part 136 of this chapter, or preparation by either Method SW-846-5031 or SW-846-5030B and analysis by Method SW-846-8260D (incorporated by

reference, see § 63.14). The owner or operator may not use a preservative in the collected sample; the owner or operator must store the sample with minimal headspace as cold as possible and at least below 4 degrees C; and the owner or operator must analyze the sample as soon as possible, but in no case longer than 7 days from the time the sample was collected.

- (e) For heat exchange systems, owners and operators must comply with the requirements in paragraph (e)(1) or (2) of this section.
- (1) Determine the concentration of ethylene oxide of the process fluid cooled by the heat exchange system using Method 624.1 of appendix A to part 136 of this chapter, or preparation by either Method SW-846-5031 or SW-846-5030B and analysis by Method SW-846-8260D (incorporated by reference, see § 63.14). The owner or operator may not use a preservative in the collected sample; the owner or operator must store the sample with minimal headspace as cold as possible and at least below 4 degrees C; and the owner or operator must analyze the sample as soon as possible, but in no case longer than 7 days from the time the sample was collected. soon as possible, but in no case longer than 7 days from the time the sample was collected.

(2) Unless specified by the Administrator, owners and operators may use good engineering judgment rather than the procedures specified in paragraph (e)(1) of this section to determine that the percent ethylene oxide content of the process fluid cooled by the heat exchange system does not exceed 0.1 percent by weight.

[89 FR 43173, May 16, 2024]

Table 1 to Subpart F of Part 63—Synthetic Organic Chemical Manufacturing Industry Chemicals

Chemical name ^a	CAS No. ^b	Group
Acenaphthene	83329	V
Acetal	105577	V
Acetaldehyde	75070	II
Acetamide	60355	II
Acetanilide	103844	II
Acetic acid	64197	II
Acetic anhydride	108247	II
Acetoacetanilide	102012	III
Acetone	67641	I
Acetone cyanohydrin	75865	V
Acetonitrile	75058	I
Acetophenone	98862	I

^a Isomer means all structural arrangements for the same number of atoms of each element and does not mean salts, esters, or derivatives.

^b CAS Number = Chemical Abstract Service number.

^c NOS = not otherwise specified.

^d No CAS number assigned.

Chemical name ^a	CAS No. ^b	Group
Acrolein	107028	IV
Acrylamide	79061	I
Acrylic acid	79107	IV
Acrylonitrile	107131	I
Adiponitrile	111693	I
Alizarin	72480	V
Alkyl anthraquinones	008	V
Allyl alcohol	107186	I
Allyl chloride	107051	IV
Allyl cyanide	109751	IV
Aminophenol sulfonic acid	0010	V
Aminophenol (p-)	123308	I
Aniline	62533	I
Aniline hydrochloride	142041	III
Anisidine (o-)	90040	II
Anthracene	120127	V
Anthraquinone	84651	III
Azobenzene	103333	I
Benzaldehyde	100527	III
Benzene	71432	I
Benzenedisulfonic acid	98486	I
Benzenesulfonic acid	98113	I
Benzil	134816	III
Benzilic acid	76937	III
Benzoic acid	65850	III
Benzoin	119539	III
Benzonitrile	100470	III
Benzophenone	119619	I
Benzotrichloride	98077	III
Benzoyl chloride	98884	III
Benzyl acetate	140114	III
Benzyl alcohol	100516	III
Benzyl benzoate	120514	III
Benzyl chloride	100447	III

^a Isomer means all structural arrangements for the same number of atoms of each element and does not mean salts, esters, or derivatives.

^b CAS Number = Chemical Abstract Service number.

^c NOS = not otherwise specified.

^d No CAS number assigned.

Chemical name ^a	CAS No. ^b	Group
Benzyl dichloride	98873	III
Biphenyl	92524	I
Bisphenol A	80057	III
Bis(Chloromethyl) Ether	542881	I
Bromobenzene	108861	I
Bromoform	75252	V
Bromonaphthalene	27497514	IV
Butadiene (1,3-)	106990	II
Butanediol (1,4-)	110634	I
Butyl acrylate (n-)	141322	V
Butylene glycol (1,3-)	107880	II
Butyrolactone	96480	I
Caprolactam	105602	II
Carbaryl	63252	V
Carbazole	86748	V
Carbon disulfide	75150	IV
Carbon tetrabromide	558134	II
Carbon tetrachloride	56235	I
Carbon tetrafluoride	75730	II
Chloral	75876	II
Chloroacetic acid	79118	II
Chloroacetophenone (2-)	532274	I
Chloroaniline (p-)	106478	II
Chlorobenzene	108907	I
2-Chloro-1,3-butadiene (Chloroprene)	126998	II
Chlorodifluoroethane	25497294	V
Chlorodifluoromethane	75456	I
Chloroform	67663	I
Chloronaphthalene	25586430	IV
Chloronitrobenzene (m-).	121733	I
Chloronitrobenzene (o-).	88733	I
Chloronitrobenzene	100005	I

^a Isomer means all structural arrangements for the same number of atoms of each element and does not mean salts, esters, or derivatives.

^b CAS Number = Chemical Abstract Service number.

^c NOS = not otherwise specified.

^d No CAS number assigned.

Chemical name ^a	CAS No. ^b	Group
(p-).		
Chlorophenol (m-)	108430	II
Chlorophenol (o-)	95578	II
Chlorophenol (p-)	106489	II
Chlorotoluene (m-)	108418	III
Chlorotoluene (o-)	95498	III
Chlorotoluene (p-)	106434	III
Chlorotrifluoromethane	75729	II
Chrysene	218019	V
Cresol and cresylic acid (m-)	108394	III
Cresol and cresylic acid (o-)	95487	III
Cresol and cresylic acid (p-)	106445	III
Cresols and cresylic acids (mixed)	1319773	III
Cumene	98828	I
Cumene hydroperoxide	80159	I
Cyanoacetic acid	372098	II
Cyclohexane	110827	I
Cyclohexanol	108930	I
Cyclohexanone	108941	I
Cyclohexylamine	108918	III
Cyclooctadienes	29965977	II
Decahydronaphthalene	91178	IV
Diacetoxy-2-Butene (1,4-)	0012	V
Diaminophenol hydrochloride	137097	V
Dibromomethane	74953	V
Dichloroaniline (mixed isomers)	27134276	I
Dichlorobenzene (p-)	106467	I
Dichlorobenzene (m-)	541731	I
Dichlorobenzene (o-)	95501	I
Dichlorobenzidine	91941	I
(3,3'-).		
Dichlorodifluoromethane	75718	I
Dichloroethane (1,2-) (Ethylenedichloride) (EDC)	107062	I
Dichloroethyl ether (bis(2-chloroethyl)ether)	111444	I

^a Isomer means all structural arrangements for the same number of atoms of each element and does not mean salts, esters, or derivatives.

^b CAS Number = Chemical Abstract Service number.

^c NOS = not otherwise specified.

^d No CAS number assigned.

Chemical name ^a	CAS No. ^b	Group
Dichloroethylene (1,2-)	540590	II
Dichlorophenol (2,4-)	120832	III
Dichloropropene (1,3-)	542756	II
Dichlorotetrafluoroethane.	1320372	V
Dichloro-1-butene (3,4-)	760236	II
Dichloro-2-butene (1,4-)	764410	V
Diethanolamine (2,2'-Iminodiethanol)	111422	I
Diethyl sulfate	64675	II
Diethylamine	109897	IV
Diethylaniline (2,6-)	579668	V
Diethylene glycol	111466	I
Diethylene glycol dibutyl ether	112732	I
Diethylene glycol diethyl ether	112367	I
Diethylene glycol dimethyl ether	111966	I
Diethylene glycol monobutyl ether acetate	124174	I
Diethylene glycol monobutyl ether	112345	I
Diethylene glycol monoethyl ether acetate	112152	I
Diethylene glycol monoethyl ether	111900	I
Diethylene glycol monohexyl ether	112594	V
Diethylene glycol monomethyl ether acetate	629389	V
Diethylene glycol monomethyl ether	111773	I
Dihydroxybenzoic acid (Resorcylic acid)	27138574	V
Dimethylbenzidine (3,3'-).	119937	II
Dimethyl ether	115106	IV
Dimethylformamide (N,N-)	68122	II
Dimethylhydrazine (1,1-).	57147	II
Dimethyl sulfate	77781	I
Dimethyl terephthalate	120616	II
Dimethylamine	124403	IV
Dimethylaminoethanol (2-)	108010	I
Dimethylaniline (N,N')	121697	III

^a Isomer means all structural arrangements for the same number of atoms of each element and does not mean salts, esters, or derivatives.

^b CAS Number = Chemical Abstract Service number.

^c NOS = not otherwise specified.

^d No CAS number assigned.

Chemical name ^a	CAS No. ^b	Group
Dinitrobenzenes (NOS) ^c	25154545	I
Dinitrophenol (2,4-)	51285	III
Dinitrotoluene (2,4-)	121142	III
Dioxane (1,4-) (1,4-Diethyleneoxide)	1239	11I
Dioxolane (1,3-)	646060	I
Diphenyl methane	101815	I
Diphenyl oxide	101848	I
Diphenyl thiourea	102089	III
Diphenylamine	122394	III
Dipropylene glycol	110985	I
Di-o-tolyguanidine	97392	III
Dodecanedioic acid	693232	I
Dodecyl benzene (branched)	123013	V
Dodecyl phenol (branched)	121158585	V
Dodecylaniline	28675174	V
Dodecylbenzene (n-)	121013	I
Dodecylphenol	27193868	III
Epichlorohydrin (1-chloro-2,3-epoxypropane)	106898	I
Ethanolamine	141435	I
Ethyl acrylate	140885	II
Ethylbenzene	100414	I
Ethyl chloride (Chloroethane)	75003	IV
Ethyl chloroacetate	105395	II
Ethylamine	75047	V
Ethylaniline (N-)	103695	III
Ethylaniline (o-)	578541	III
Ethylcellulose	9004573	V
Ethylcyanoacetate	105566	V
Ethylene carbonate	96491	I
Ethylene dibromide (Dibromoethane)	106934	I
Ethylene glycol	107211	I
Ethylene glycol diacetate	111557	I
Ethylene glycol dibutyl ether	112481	V
Ethylene glycol diethyl ether	629141	I

^a Isomer means all structural arrangements for the same number of atoms of each element and does not mean salts, esters, or derivatives.

^b CAS Number = Chemical Abstract Service number.

^c NOS = not otherwise specified.

^d No CAS number assigned.

Chemical name ^a	CAS No. ^b	Group
(1,2-diethoxyethane).		
Ethylene glycol dimethyl ether	110714	I
Ethylene glycol monoacetate	542596	V
Ethylene glycol monobutyl ether acetate.	112072	I
Ethylene glycol monobutyl ether	111762	I
Ethylene glycol monoethyl ether acetate.	111159	I
Ethylene glycol monoethyl ether	110805	I
Ethylene glycol monohexyl ether	112254	V
Ethylene glycol monomethyl ether acetate	110496	I
Ethylene glycol monomethyl ether	109864	I
Ethylene glycol monooctyl ether	002	V
Ethylene glycol monophenyl ether	122996	I
Ethylene glycol monopropyl ether	2807309	I
Ethylene oxide	75218	I
Ethylenediamine	107153	II
Ethylenediamine tetraacetic acid	60004	V
Ethylenimine (Aziridine)	151564	II
Ethylhexyl acrylate (2-isomer)	103117	II
Fluoranthene	206440	V
Formaldehyde	50000	I
Formamide	75127	II
Formic acid	64186	II
Fumaric acid	110178	I
Glutaraldehyde	111308	IV
Glyceraldehyde	367475	V
Glycerol	56815	II
Glycine	56406	II
Glyoxal	107222	II
Hexachlorobenzene	118741	II
Hexachlorobutadiene	87683	II
Hexachloroethane	67721	II

^a Isomer means all structural arrangements for the same number of atoms of each element and does not mean salts, esters, or derivatives.

^b CAS Number = Chemical Abstract Service number.

^c NOS = not otherwise specified.

^d No CAS number assigned.

Chemical name ^a	CAS No. ^b	Group
Hexadiene (1,4-)	592450	II
Hexamethylene- tetramine.	100970	I
Hexane	110543	V
Hexanetriol (1,2,6-)	106694	IV
Hydroquinone	123319	I
Hydroxyadipaldehyde	141311	V
Isobutyl acrylate	106638	V
Isobutylene	115117	V
Isophorone	78591	IV
Isophorone nitrile	0017	V
Isophthalic acid	121915	III
Isopropylphenol	25168063	III
Linear alkylbenzene	— ^d	I
Maleic anhydride	108316	I
Maleic hydrazide	123331	I
Malic acid	6915157	I
Metanilic acid	121471	I
Methacrylic acid	79414	V
Methanol	67561	IV
Methionine	63683	I
Methyl acetate	79209	IV
Methyl acrylate	96333	V
Methyl bromide (Bromomethane)	74839	IV
Methyl chloride (Chloromethane)	74873	IV
Methyl ethyl ketone (2-butanone)	78933	V
Methyl formate	107313	II
Methyl hydrazine	60344	IV
Methyl isobutyl carbinol	108112	IV
Methyl isobutyl ketone (Hexone)	108101	IV
Methyl isocyanate	624839	IV
Methyl mercaptan	74931	IV
Methyl methacrylate	80626	IV
Methyl phenyl carbinol	98851	II

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^b CAS Number = Chemical Abstract Service number.

^c NOS = not otherwise specified.

^d No CAS number assigned.

Chemical name ^a	CAS No. ^b	Group
Methyl tert-butyl ether	1634044	V
Methylamine	74895	IV
Methylaniline (N-)	100618	III
Methylcyclohexane	108872	III
Methylcyclohexanol	25639423	V
Methylcyclohexanone	1331222	III
Methylene chloride (Dichloromethane)	75092	I
Methylene dianiline (4,4'-isomer)	101779	I
Methylene diphenyl diisocyanate (4,4'-) (MDI)	101688	III
Methylionones (a-)	79696	V
Methylpentynol	77758	V
Methylstyrene (a-)	98839	I
Naphthalene	91203	IV
Naphthalene sulfonic acid (a-)	85472	IV
Naphthalene sulfonic acid (b-)	120183	IV
Naphthol (a-)	90153	IV
Naphthol (b-)	135193	IV
Naphtholsulfonic acid (1-)	567180	V
Naphthylamine sulfonic acid (1,4-)	84866	V
Naphthylamine sulfonic acid (2,1-)	81163	V
Naphthylamine (1-)	134327	V
Naphthylamine (2-)	91598	V
Nitroaniline (m-)	99092	II
Nitroaniline (o-)	88744	I
Nitroanisole (o-)	91236	III
Nitroanisole (p-)	100174	III
Nitrobenzene	98953	I
Nitronaphthalene (1-)	86577	IV
Nitrophenol (p-)	100027	III
Nitrophenol (o-)	88755	III
Nitropropane (2-)	79469	II
Nitrotoluene (all isomers)	1321126	III
Nitrotoluene (o-)	88722	III
Nitrotoluene (m-)	99081	III

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^b CAS Number = Chemical Abstract Service number.

^c NOS = not otherwise specified.

^d No CAS number assigned.

Chemical name ^a	CAS No. ^b	Group
Nitrotoluene (p-)	99990	III
Nitroxylenes	25168041	V
Nonylbenzene (branched)	1081772	V
Nonylphenol	25154523	V
Octene-1	111660	I
Octylphenol	27193288	III
Paraformaldehyde	30525894	I
Paraldehyde	123637	II
Pentachlorophenol	87865	III
Pentaerythritol	115775	I
Peracetic acid	79210	II
Perchloromethyl mercaptan	594423	IV
Phenanthrene	85018	V
Phenetidine (p-)	156434	III
Phenol	108952	III
Phenolphthalein	77098	III
Phenolsulfonic acids (all isomers)	1333397	III
Phenyl anthranilic acid (all isomers)	91407	III
Phenylenediamine (p-)	106503	I
Phloroglucinol	108736	III
Phosgene	75445	IV
Phthalic acid	88993	III
Phthalic anhydride	85449	III
Phthalimide	85416	III
Phthalonitrile	91156	III
Picoline (b-)	108996	II
Piperazine	110850	I
Propiolactone (beta-)	57578	I
Propionaldehyde	123386	IV
Propionic acid	79094	I
Propylene carbonate	108327	V
Propylene dichloride (1,2-dichloropropane)	78875	IV
Propylene glycol	57556	I
Propylene glycol monomethyl ether	107982	I

^a Isomer means all structural arrangements for the same number of atoms of each element and does not mean salts, esters, or derivatives.

^b CAS Number = Chemical Abstract Service number.

^c NOS = not otherwise specified.

^d No CAS number assigned.

Chemical name ^a	CAS No. ^b	Group
Propylene oxide	75569	I
Pyrene	129000	V
Pyridine	110861	II
p-tert-Butyl toluene	98511	III
Quinone	106514	III
Resorcinol	108463	I
Salicylic acid	69727	III
Sodium methoxide	124414	IV
Sodium phenate	139026	III
Stilbene	588590	III
Styrene	100425	I
Succinic acid	110156	I
Succinonitrile	110612	I
Sulfanilic acid	121573	III
Sulfolane	126330	II
Tartaric acid	526830	I
Terephthalic acid	100210	II
Tetrabromophthalic anhydride	632791	III
Tetrachlorobenzene (1,2,4,5-)	95943	I
Tetrachloroethane (1,1,2,2-)	79345	II
Tetrachloroethylene (Perchloroethylene)	127184	I
Tetrachlorophthalic- anhydride.	117088	III
Tetraethyl lead	78002	IV
Tetraethylene glycol	112607	I
Tetraethylene- pentamine.	112572	V
Tetrahydrofuran	109999	I
Tetrahydronaphthalene	119642	IV
Tetrahydrophthalic anhydride	85438	II
Tetramethylene- diamine.	110601	II
Tetramethylethylenediamine	110189	V
Tetramethyllead	75741	V

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^b CAS Number = Chemical Abstract Service number.

^c NOS = not otherwise specified.

^d No CAS number assigned.

Chemical name ^a	CAS No. ^b	Group
Toluene	108883	I
Toluene 2,4 diamine	95807	II
Toluene 2,4 diisocyanate	584849	II
Toluene diisocyanates (mixture)	26471625	II
Toluene sulfonic acids	104154	III
Toluenesulfonyl chloride	98599	III
Toluidine (o-)	95534	II
Trichloroaniline- (2,4,6-).	634935	III
Trichlorobenzene (1,2,3-)	87616	V
Trichlorobenzene (1,2,4-)	120821	I
Trichloroethane (1,1,1-)	71556	II
Trichloroethane (1,1,2-) (Vinyl trichloride)	79005	II
Trichloroethylene	79016	I
Trichlorofluoromethane	75694	I
Trichlorophenol (2,4,5-).	95954	I
(1,1,2-) Trichloro (1,2,2-) trifluoroethane.	76131	I
Triethanolamine	102716	I
Triethylamine	121448	IV
Triethylene glycol	112276	I
Triethylene glycol dimethyl ether.	112492	I
Triethylene glycol monoethyl ether	112505	V
Triethylene glycol monomethyl ether	112356	I
Trimethylamine	75503	IV
Trimethylcyclohexanol	933482	IV
Trimethylcyclo- hexanone.	2408379	IV
Trimethylcyclo- hexylamine.	34216347	V
Trimethylolpropane	77996	I

^a Isomer means all structural arrangements for the same number of atoms of each element and does not mean salts, esters, or derivatives.

^b CAS Number = Chemical Abstract Service number.

^c NOS = not otherwise specified.

^d No CAS number assigned.

Chemical name ^a	CAS No. ^b	Group
Trimethylpentane (2,2,4-)	540841	V
Tripropylene glycol	24800440	V
Vinyl acetate	108054	II
Vinyl chloride (Chloroethylene)	75014	I
Vinyl toluene	25013154	III
Vinylcyclohexene (4-)	100403	II
Vinylidene chloride (1,1-dichloroethylene).	75354	II
Vinyl(N-)-pyrrolidone(2-)	88120	V
Xanthates	140896	V
Xylene sulfonic acid	25321419	III
Xylenes (NOS) ^c	1330207	I
Xylene (m-)	108383	I
Xylene (o-)	95476	I
Xylene (p-)	106423	I
Xylenols (Mixed)	1300716	V
Xylidene	1300738	III

^a Isomer means all structural arrangements for the same number of atoms of each element and does not mean salts, esters, or derivatives.

^b CAS Number = Chemical Abstract Service number.

^c NOS = not otherwise specified.

^d No CAS number assigned.

[59 FR 19454, Apr. 22, 1994, as amended at 59 FR 48176, Sept. 20, 1994; 61 FR 31439, June 20, 1996; 63 FR 26082, May 12, 1998]

Table 2 to Subpart F of Part 63—Organic Hazardous Air Pollutants

Chemical name ^{a b}	CAS No. ^c
Acenaphthene	83329
Acetaldehyde	75070
Acetamide	60355
Acetonitrile	75058
Acetophenone	98862
Acrolein	107028
Acrylamide	79061
Acrylic acid	79107
Acrylonitrile	107131
Alizarin	72480
Allyl chloride	107051
Aniline	62533
Anisidine (o-)	90040
Anthracene	120127
Anthraquinone	84651
Benzene	71432
Benzotrichloride	98077
Benzyl chloride	100447
Biphenyl	92524
Bis(chloromethyl)ether	542881
Bromoform	75252
Bromonaphthalene	27497514
Butadiene (1,3-)	106990
Carbon disulfide	75150
Carbon tetrachloride	56235

^a For all Listings above containing the word "Compounds," the following applies: Unless otherwise specified, these listings are defined as including any unique chemical substance that contains the named chemical (i.e., antimony, arsenic) as part of that chemical's infrastructure.

^b Isomer means all structural arrangements for the same number of atoms of each element and does not mean salts, esters, or derivatives.

^c CAS No. = Chemical Abstract Service number.

^d Includes mono- and di- ethers of ethylene glycol, diethylene glycol, and triethylene glycol R-(OCH₂ CH_{2n}-OR where:

n = 1, 2, or 3;

R = alkyl or aryl groups; and

R" = *R*, H or groups which, when removed, yield glycol ethers with the structure:

R-(OCH₂ CH_{2n}-OH

Polymers are excluded from the glycol category.

Chemical name ^{a b}	CAS No. ^c
Chloroacetic acid	79118
Chloroacetophenone (2-)	532274
Chlorobenzene	108907
2-Chloro-,1,3-butadiene (Chloroprene)	126998
Chloroform	67663
Chloronaphthalene	25586430
Chrysene	218019
Cresols and cresylic acids (mixed)	1319773
Cresol and cresylic acid (o-)	95487
Cresol and cresylic acid (m-)	108394
Cresol and cresylic acid (p-)	106445
Cumene	98828
Dichlorobenzene (p-)	106467
Dichlorobenzidine (3,3'-)	91941
Dichloroethane (1,2-) (Ethylene dichloride) (EDC)	107062
Dichloroethylether (Bis(2-chloroethyl)ether)	111444
Dichloropropene (1,3-)	542756
Diethanolamine (2,2'-Iminodiethanol)	111422
Dimethylaniline (N,N-)	121697
Diethyl sulfate	64675
Dimethylbenzidine (3,3'-)	119937
Dimethylformamide (N,N-)	68122
Dimethylhydrazine (1,1-)	58147
Dimethylphthalate	131113
Dimethylsulfate	77781
Dinitrophenol (2,4-)	51285
Dinitrotoluene (2,4-)	121142

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^b Isomer means all structural arrangements for the same number of atoms of each element and does not mean salts, esters, or derivatives.

^c CAS No. = Chemical Abstract Service number.

^d Includes mono- and di- ethers of ethylene glycol, diethylene glycol, and triethylene glycol R-(OCH₂ CH_{2n}-OR where:

$n = 1, 2, \text{ or } 3;$

$R = \text{alkyl or aryl groups; and}$

$R'' = R, H \text{ or groups which, when removed, yield glycol ethers with the structure:}$

$R-(OCH_2 CH_{2n}-OH$

Polymers are excluded from the glycol category.

Chemical name ^{a b}	CAS No. ^c
Dioxane (1,4-) (1,4-Diethyleneoxide)	123911
1,2-Diphenylhydrazine	122667
Epichlorohydrin (1-Chloro-2,3-epoxypropane)	106898
Ethyl acrylate	140885
Ethylbenzene	100414
Ethyl chloride (Chloroethane)	75003
Ethylene dibromide (Dibromoethane)	106934
Ethylene glycol	107211
Ethylene oxide	75218
Ethylidene dichloride (1,1-Dichloroethane)	75343
Fluoranthene	206440
Formaldehyde	50000
Glycol ethers ^d	
Hexachlorobenzene	118741
Hexachlorobutadiene	87683
Hexachloroethane	67721
Hexane	110543
Hydroquinone	123319
Isophorone	78591
Maleic anhydride	108316
Methanol	67561
Methylbromide (Bromomethane)	74839
Methylchloride (Chloromethane)	74873
Methyl hydrazine	60344
Methyl isobutyl ketone (Hexone)	108101
Methyl isocyanate	624839
Methyl methacrylate	80626

^a For all Listings above containing the word "Compounds," the following applies: Unless otherwise specified, these listings are defined as including any unique chemical substance that contains the named chemical (i.e., antimony, arsenic) as part of that chemical's infrastructure.

^b Isomer means all structural arrangements for the same number of atoms of each element and does not mean salts, esters, or derivatives.

^c CAS No. = Chemical Abstract Service number.

^d Includes mono- and di- ethers of ethylene glycol, diethylene glycol, and triethylene glycol R-(OCH₂ CH_{2n}-OR where:

$n = 1, 2, \text{ or } 3;$

$R = \text{alkyl or aryl groups; and}$

$R'' = R, H \text{ or groups which, when removed, yield glycol ethers with the structure:}$

$R-(OCH_2 CH_{2n}-OH$

Polymers are excluded from the glycol category.

Chemical name ^{a b}	CAS No. ^c
Methyl tert-butyl ether	1634044
Methylene chloride (Dichloromethane)	75092
Methylene diphenyl diisocyanate (4,4'-) (MDI)	101688
Methylenedianiline (4,4'-)	101779
Naphthalene	91203
Naphthalene sulfonic acid (α)	85472
Naphthalene sulfonic acid (β)	120183
Naphthol (α)	90153
Naphthol (β)	135193
Naphtholsulfonic acid (1-)	567180
Naphthylamine sulfonic acid (1,4-)	84866
Naphthylamine sulfonic acid (2,1-)	81163
Naphthylamine (1-)	134327
Naphthylamine (2-)	91598
Nitronaphthalene (1-)	86577
Nitrobenzene	98953
Nitrophenol (p-)	100027
Nitropropane (2-)	79469
Phenanthrene	85018
Phenol	108952
Phenylenediamine (p-)	106503
Phosgene	75445
Phthalic anhydride	85449
Propiolactone (beta-)	57578
Propionaldehyde	123386
Propylene dichloride (1,2-Dichloropropane)	78875
Propylene oxide	75569

^a For all Listings above containing the word "Compounds," the following applies: Unless otherwise specified, these listings are defined as including any unique chemical substance that contains the named chemical (i.e., antimony, arsenic) as part of that chemical's infrastructure.

^b Isomer means all structural arrangements for the same number of atoms of each element and does not mean salts, esters, or derivatives.

^c CAS No. = Chemical Abstract Service number.

^d Includes mono- and di- ethers of ethylene glycol, diethylene glycol, and triethylene glycol R-(OCH₂ CH_{2n}-OR where:

$n = 1, 2, \text{ or } 3;$

$R = \text{alkyl or aryl groups; and}$

$R'' = R, H \text{ or groups which, when removed, yield glycol ethers with the structure:}$

$R-(OCH_2 CH_{2n}-OH$

Polymers are excluded from the glycol category.

Chemical name ^{a b}	CAS No. ^c
Pyrene	129000
Quinone	106514
Styrene	100425
Tetrachloroethane (1,1,2,2-)	79345
Tetrachloroethylene (Perchloroethylene)	127184
Tetrahydronaphthalene	119642
Toluene	108883
Toluene diamine (2,4-)	95807
Toluene diisocyanate (2,4-)	584849
Toluidine (o-)	95534
Trichlorobenzene (1,2,4-)	120821
Trichloroethane (1,1,1-) (Methyl chloroform)	71556
Trichloroethane (1,1,2-) (Vinyl trichloride)	79005
Trichloroethylene	79016
Trichlorophenol (2,4,5-)	95954
Triethylamine	121448
Trimethylpentane (2,2,4-)	540841
Vinyl acetate	108054
Vinyl chloride (Chloroethylene)	75014
Vinylidene chloride (1,1-Dichloroethylene)	75354
Xylenes (NOS)	1330207
Xylene (m-)	108383
Xylene (o-)	95476
Xylene (p-)	106423

^a For all Listings above containing the word "Compounds," the following applies: Unless otherwise specified, these listings are defined as including any unique chemical substance that contains the named chemical (i.e., antimony, arsenic) as part of that chemical's infrastructure.

^b Isomer means all structural arrangements for the same number of atoms of each element and does not mean salts, esters, or derivatives.

^c CAS No. = Chemical Abstract Service number.

^d Includes mono- and di- ethers of ethylene glycol, diethylene glycol, and triethylene glycol R-(OCH₂ CH_{2n}-OR where:

n = 1, 2, or 3;

R = alkyl or aryl groups; and

R" = R, H or groups which, when removed, yield glycol ethers with the structure:

R-(OCH₂ CH_{2n}-OH

Polymers are excluded from the glycol category.

[62 FR 2735, Jan. 17, 1997, as amended at 71 FR 76614, Dec. 21, 2006]

Table 3 to Subpart F of Part 63—General Provisions Applicability to Subparts F, G, and H^a to Subpart F

Reference	Applies to subparts F, G, and H	Comment
63.1(a)(1)	Yes	Overlap clarified in § 63.101, § 63.111, § 63.161.
63.1(a)(2)	Yes	
63.1(a)(3)	Yes	
63.1(a)(4)	No	§ 63.110 and § 63.160(b) of subparts G and H identify which standards are overridden.
63.1 (a)(5)-(a)(9)	No	Subpart F specifies applicability of each paragraph in subpart A to subparts F, G, and H.
63.1(a)(10)	No	Subparts F, G, and H specify calendar or operating day.
63.1(a)(11)	No	
63.1 (a)(12)-(a)(14)	Yes	Subpart F § 63.103(d) specifies acceptable methods for submitting reports. ^a
63.1(b)(1)	No	Subpart F specifies applicability.
63.1(b)(2)	Yes	
63.1(b)(3)	No	
63.1(c)(1)	No	Subpart F specifies applicability.
63.1(c)(2)	No	
63.1(c)(3)	No	Area sources are not subject to subparts F, G, and H.
63.1(c)(4)	Yes	
63.1(c)(5)	No	Subparts G and H specify applicable notification requirements.
63.1(c)(6)	Yes	
63.1(d)	No	Subparts F, G, and H established before permit program.
63.1(e)	No	
63.2	Yes	Subpart F § 63.101(a) specifies those subpart A definitions that apply to the HON. Subpart F definition of “source” is equivalent to subpart A definition of “affected source.”
63.3	No	Units of measure are spelled out in subparts F, G, and H.

^a Wherever subpart A specifies “postmark” dates, submittals may be sent by methods other than the U.S. Mail (e.g., by fax or courier). Submittals shall be sent by the specified dates, but a postmark is not necessarily required.

^b Except as specified in footnote c of this table, the plan, and any records or reports of start-up, shutdown, and malfunction do not apply to Group 2 emission points unless they are included in an emissions average.

^c On and after July 15, 2027, footnote b of this table does not apply and the row for the “63.6(e)” entry of this table is no longer applicable.

Reference	Applies to subparts F, G, and H	Comment
63.4 (a)(1)-(a)(3)	Yes	
63.4(a)(4)	No	This is a reserved paragraph in subpart A of part 63.
63.4(a)(5)	Yes	
63.4(b)	Yes	
63.4(c)	Yes	
63.5(a)(1)	Yes	Except the terms “source” and “stationary source” in § 63.5(a)(1) should be interpreted as having the same meaning as “affected source.”
63.5(a)(2)	Yes	
63.5(b)(1)	Yes	Except § 63.100(l) defines when construction or reconstruction is subject to standards for new sources.
63.5(b)(2)	No	This is a reserved paragraph in subpart A of part 63.
63.5(b)(3)	Yes	
63.5(b)(4)	Yes	Except the cross reference to § 63.9(b) is limited to § 63.9(b)(4) and (5). Subpart F overrides § 63.9 (b)(1) through (b)(3).
63.5(b)(5)	Yes	
63.5(b)(6)	Yes	Except § 63.100(l) defines when construction or reconstruction is subject to standards for new sources.
63.5(c)	No	This is a reserved paragraph in subpart A of part 63.
63.5(d)(1)(i)	No	For subpart G, see § 63.151(b) (2)(ii) and (2)(iii) for the applicability and timing of this submittal; for subpart H, see § 63.182(b) (2)(ii) and (b)(2)(iii) for applicability and timing of this submittal.
63.5(d)(1)(ii)	Yes	Except § 63.5(d)(1)(ii)(H) does not apply.
63.5(d)(1)(iii)	No	Subpart G requires submittal of the Notification of Compliance Status in § 63.152(b); subpart H specifies requirements in § 63.182(c).
63.5(d)(2)	No	
63.5(d)(3)	Yes—subpart G No—subpart H	Except § 63.5(d)(3)(ii) does not apply to subpart G.
63.5(d)(4)	Yes	

^a Wherever subpart A specifies “postmark” dates, submittals may be sent by methods other than the U.S. Mail (e.g., by fax or courier). Submittals shall be sent by the specified dates, but a postmark is not necessarily required.

^b Except as specified in footnote c of this table, the plan, and any records or reports of start-up, shutdown, and malfunction do not apply to Group 2 emission points unless they are included in an emissions average.

^c On and after July 15, 2027, footnote b of this table does not apply and the row for the “63.6(e)” entry of this table is no longer applicable.

Reference	Applies to subparts F, G, and H	Comment
63.5(e)	Yes	Except the cross-reference to § 63.5(d)(1) is changed to § 63.151(b)(2)(ii) of subpart G and to § 63.182(b)(2)(ii) of subpart H. The cross-reference to § 63.5(b)(2) does not apply.
63.5(f)(1)	Yes	
63.5(f)(2)	Yes	
63.6(a)	Yes	Subparts F and H specify compliance dates for sources subject to subparts F, G, and H.
63.6(b)(1)	No	
63.6(b)(2)	No	
63.6(b)(3)	Yes	May apply when standards are proposed under Section 112(f) of the Clean Air Act.
63.6(b)(4)	No	
63.6(b)(5)	No	
63.6(b)(6)	No	Subparts G and H include notification requirements.
63.6(b)(7)	No	
63.6(c)(1)	No	
63.6(c)(2)	No	Subpart F specifies the compliance dates for subparts G and H.
63.6(c)(3)	No	
63.6(c)(4)	No	
63.6(c)(5)	Yes	Except as otherwise specified for individual paragraphs. Does not apply to Group 2 emission points unless they are included in an emissions average. ^{b c}
63.6(d)	[Reserved]	
63.6(e)	Yes ^c	
63.6(e)(1)(i)	No	This is addressed by § 63.102(a)(4) and (f) of subpart F.
63.6(e)(1)(ii)	Yes, before July 15, 2027. No, beginning on and after July 15, 2027	

^a Wherever subpart A specifies “postmark” dates, submittals may be sent by methods other than the U.S. Mail (e.g., by fax or courier). Submittals shall be sent by the specified dates, but a postmark is not necessarily required.

^b Except as specified in footnote c of this table, the plan, and any records or reports of start-up, shutdown, and malfunction do not apply to Group 2 emission points unless they are included in an emissions average.

^c On and after July 15, 2027, footnote b of this table does not apply and the row for the “63.6(e)” entry of this table is no longer applicable.

Reference	Applies to subparts F, G, and H	Comment
63.6(e)(1)(iii)	Yes	This is addressed by § 63.102(a)(4).
63.6(e)(2)	[Reserved]	
63.6(e)(3)(i)	Yes, before July 15, 2027. No, beginning on and after July 15, 2027	
63.6(e)(3)(i)(A)	No	
63.6(e)(3)(i)(B)	Yes, before July 15, 2027. No, beginning on and after July 15, 2027	
63.6(e)(3)(i)(C)	Yes, before July 15, 2027. No, beginning on and after July 15, 2027	Recordkeeping and reporting are specified in § 63.103(c)(2) of subpart F and § 63.152(d)(1) of subpart G.
63.6(e)(3)(ii)	[Reserved]	
63.6(e)(3)(iii)	No	Recordkeeping and reporting are specified in § 63.103(c)(2) of subpart F and § 63.152(d)(1) of subpart G.
63.6(e)(3)(iv)	No	Recordkeeping and reporting are specified in § 63.103(c)(2) of subpart F and § 63.152(d)(1) of subpart G.
63.6(e)(3)(v)	No	Records retention requirements are specified in § 63.103(c).
63.6(e)(3)(vi)	Yes, before July 15, 2027. No, beginning on and after July 15, 2027	
63.6(e)(3)(vii)	Yes, before July 15, 2027. No, beginning on and after July	

^a Wherever subpart A specifies “postmark” dates, submittals may be sent by methods other than the U.S. Mail (e.g., by fax or courier). Submittals shall be sent by the specified dates, but a postmark is not necessarily required.

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^c On and after July 15, 2027, footnote b of this table does not apply and the row for the “63.6(e)” entry of this table is no longer applicable.

Reference	Applies to subparts F, G, and H	Comment
63.6(e)(3)(viii)	15, 2027 Yes, before July 15, 2027. No, beginning on and after July 15, 2027	
63.6(e)(3)(ix)	Yes, before July 15, 2027. No, beginning on and after July 15, 2027	
63.6(f)(1)	No	§ 63.102(a) and (e) of subpart F specifies when the standards apply.
63.6(f)(2)(i)	Yes	
63.6(f)(2)(ii)	Yes—subpart G No—subpart H	§ 63.152(c)(2) of subpart G specifies the use of monitoring data in determining compliance with subpart G.
63.6(f)(2)(iii)	Yes	
(A), (B), and (C)		
63.6(f)(2)(iii)(D)	No	
63.6(f)(2)(iv)	Yes	
63.6(f)(2)(v)	Yes	
63.6(f)(3)	Yes	
63.6(g)	No	Procedures specified in § 63.102(b) of subpart F.
63.6(h)	No	
63.6(i)(1)	Yes	
63.6(i)(2)	Yes	
63.6(i)(3)	No	For subpart G, § 63.151(a)(6) specifies procedures; for subpart H, § 63.182(a)(6) specifies procedures.
63.6(i)(4)(i)(A)	Yes	
63.6(i)(4)(i)(B)	No	Dates are specified in § 63.151(a)(6)(i) of subpart G and § 63.182(a)(6)(i) of subpart H.
63.6(i)(4)(ii)	No	

^a Wherever subpart A specifies “postmark” dates, submittals may be sent by methods other than the U.S. Mail (e.g., by fax or courier). Submittals shall be sent by the specified dates, but a postmark is not necessarily required.

^b Except as specified in footnote c of this table, the plan, and any records or reports of start-up, shutdown, and malfunction do not apply to Group 2 emission points unless they are included in an emissions average.

^c On and after July 15, 2027, footnote b of this table does not apply and the row for the “63.6(e)” entry of this table is no longer applicable.

Reference	Applies to subparts F, G, and H	Comment
63.6(i) (5)-(14)	Yes	Subparts F, G, and H specify required testing and compliance demonstration procedures.
63.6(i)(15)	No	
63.6(i)(16)	Yes	
63.6(j)	Yes	
63.7(a)(1)	No	
63.7(a)(2)	No	For subpart G, test results must be submitted in the Notification of Compliance Status due 150 days after compliance date, as specified in § 63.152(b); for subpart H, all test results subject to reporting are reported in periodic reports.
63.7(a)(3)	Yes	See § 63.103(b)(3).
63.7(a)(4)	Yes	
63.7(b)	No	
63.7(c)	No	
63.7(d)	Yes	
63.7(e)(1)	Yes, before July 15, 2027. No, beginning on and after July 15, 2027	Subparts F, G, and H specify test methods and procedures.
63.7(e)(2)	Yes	
63.7(e)(3)	No	
63.7(e)(4)	Yes	
63.7(f)	Yes	
63.7(g)	No	Performance test reporting specified in § 63.152(b) of subpart G: Not applicable to subpart H because no performance test required by subpart H.
63.7(h)(1)	Yes	§ 63.103(b)(5) of subpart F specifies provisions for requests to waive performance tests.
63.7(h)(2)	Yes	
63.7(h)(3)	No	

^a Wherever subpart A specifies “postmark” dates, submittals may be sent by methods other than the U.S. Mail (e.g., by fax or courier). Submittals shall be sent by the specified dates, but a postmark is not necessarily required.

^b Except as specified in footnote c of this table, the plan, and any records or reports of start-up, shutdown, and malfunction do not apply to Group 2 emission points unless they are included in an emissions average.

^c On and after July 15, 2027, footnote b of this table does not apply and the row for the “63.6(e)” entry of this table is no longer applicable.

Reference	Applies to subparts F, G, and H	Comment
63.7(h)(4)	No	
63.7(h)(5)	Yes	
63.8(a)(1)	Yes	
63.8(a)(2)	No	
63.8(a)(3)	[Reserved]	
63.8(a)(4)	Yes, except for flares subject to § 63.108	
63.8(b)(1)	Yes	
63.8(b)(2)	No	Subparts G and H specify locations to conduct monitoring.
63.8(b)(3)	Yes	
63.8(c)(1)(i)	Yes, before July 15, 2027. No, beginning on and after July 15, 2027	
63.8(c)(1)(ii)	No	For subpart G, submit as part of periodic report required by § 63.152(c); for subpart H, retain as required by § 63.181(g)(2)(ii).
63.8(c)(1)(iii)	Yes, before July 15, 2027. No, beginning on and after July 15, 2027	
63.8(c)(2)	Yes	
63.8(c)(3)	Yes	
63.8(c)(4)	No	Subpart G specifies monitoring frequency by kind of emission point and control technology used (e.g., § 63.111, § 63.120(d)(2), § 63.143, and § 63.152(f)); subpart H does not require use of continuous monitoring systems.
63.8 (c)(5)-(c)(8)	No	

^a Wherever subpart A specifies “postmark” dates, submittals may be sent by methods other than the U.S. Mail (e.g., by fax or courier). Submittals shall be sent by the specified dates, but a postmark is not necessarily required.

^b Except as specified in footnote c of this table, the plan, and any records or reports of start-up, shutdown, and malfunction do not apply to Group 2 emission points unless they are included in an emissions average.

^c On and after July 15, 2027, footnote b of this table does not apply and the row for the “63.6(e)” entry of this table is no longer applicable.

Reference	Applies to subparts F, G, and H	Comment
63.8(d)	No	Timeframe for submitting request specified in § 63.151(f) or (g) of subpart G; not applicable to subpart H because subpart H specifies acceptable alternative methods.
63.8(e)	No	
63.8 (f)(1)-(f)(3)	Yes	
63.8(f)(4)(i)	No	
63.8(f)(4)(ii)	Yes	
63.8(f)(4)(iii)	No	
63.8(f)(5)(i)	Yes	
63.8(f)(5)(ii)	No	
63.8(f)(5)(iii)	Yes	
63.8(f)(6)	No	
63.8(g)	No	Data reduction procedures specified in § 63.152(f) and (g) of subpart G; not applicable to subpart H.
63.9(a)	Yes	Specified in § 63.151(b)(2) of subpart G; specified in § 63.182(b) of subpart H.
63.9(b)(1)	No	
63.9(b)(2)	No	Initial Notification provisions are specified in § 63.151(b) of subpart G; in § 63.182(b) of subpart H.
63.9(b)(3)	No	Except that the notification in § 63.9(b)(4)(i) shall be submitted at the time specified in § 63.151(b)(2)(ii) of subpart G; in § 63.182(b)(2) of subpart H.
63.9(b)(4)	Yes	
63.9(b)(5)	Yes	Except that the notification in § 63.9(b)(5) shall be submitted at the time specified in § 63.151(b)(2)(ii) of subpart G; in § 63.182 (b)(2) of subpart H.
63.9(c)	Yes	
63.9(d)	Yes	
63.9(e)	No	

^a Wherever subpart A specifies “postmark” dates, submittals may be sent by methods other than the U.S. Mail (e.g., by fax or courier). Submittals shall be sent by the specified dates, but a postmark is not necessarily required.

^b Except as specified in footnote c of this table, the plan, and any records or reports of start-up, shutdown, and malfunction do not apply to Group 2 emission points unless they are included in an emissions average.

^c On and after July 15, 2027, footnote b of this table does not apply and the row for the “63.6(e)” entry of this table is no longer applicable.

Reference	Applies to subparts F, G, and H	Comment
63.9(f)	No	§ 63.152(b) of subpart G and § 63.182 (c) of subpart H specify Notification of Compliance Status requirements.
63.9(g)	No	
63.9(h)	No	
63.9(i)	Yes	Only as related to change to major source status.
63.9(j)	Yes	
63.9(k)	Yes	
63.10(a)	Yes	§ 63.103(c) of subpart F specifies record retention requirements.
63.10(b)(1)	No	
63.10(b)(2)	No	
63.10(b)(3)	No	§ 63.103(c) of subpart F specifies required records.
63.10(c)	No	
63.10(d)(1)	No	
63.10(d)(2)	No	§ 63.152(b) of subpart G specifies performance test reporting; not applicable to subpart H.
63.10(d)(3)	No	
63.10(d)(4)	Yes	
63.10(d)(5)	Yes, before July 15, 2027. No, beginning on and after July 15, 2027	Except that, before July 15, 2027, reports required by § 63.10(d)(5) shall be submitted at the time specified in § 63.152(d) of subpart G and in § 63.182(d) of subpart H.
63.10(e)	No	
63.10(f)	Yes	
63.11-63.15	Yes, except 63.11(b) does not apply to flares subject to § 63.108	

^a Wherever subpart A specifies "postmark" dates, submittals may be sent by methods other than the U.S. Mail (e.g., by fax or courier). Submittals shall be sent by the specified dates, but a postmark is not necessarily required.

^b Except as specified in footnote c of this table, the plan, and any records or reports of start-up, shutdown, and malfunction do not apply to Group 2 emission points unless they are included in an emissions average.

^c On and after July 15, 2027, footnote b of this table does not apply and the row for the "63.6(e)" entry of this table is no longer applicable.

Table 4 to Subpart F of Part 63—Organic Hazardous Air Pollutants Subject to Cooling Tower Monitoring Requirements in § 63.104

Chemical name	CAS Number ^a
Acetaldehyde	75070
Acetonitrile	75058
Acetophenone	98862
Acrolein	107028
Acrylonitrile	107131
Allyl chloride	107051
Aniline	62533
Anisidine (o-)	90040
Benzene	71432
Benzyl chloride	100447
Biphenyl	92524
Bromoform	75252
Butadiene (1,3-)	106990
Carbon disulfide	75150
Carbon tetrachloride	56235
Chloroacetophenone (2-)	532274
Chlorobenzene	108907
2-Chloro-1,3-butadiene (Chloroprene)	126998
Chloroform	67663
Cresol and cresylic acid (o-)	95487
Cresol and cresylic acid (m-)	108394
Cresol and cresylic acid (p-)	106445
Cumene	98828
Dichlorobenzene (p-)	106467
Dichlorobenzidine (3,3'-)	91941
Dichloroethane (1,2-) (Ethylene dichloride) (EDC)	107062
Dichloroethyl ether (Bis(2-chloroethyl)ether)	111444
Dichloropropene (1,3-)	542756
Diethylene glycol diethyl ether	112367
Diethylene glycol dimethyl ether	111966
Diethyl sulfate	64675
Dimethylaniline (N,N-)	121697
Dimethylhydrazine (1,1-)	57147
Dimethyl phthalate	131113

^a CAS Number = Chemical Abstract Service number.

Chemical name	CAS Number ^a
Dimethyl sulfate	77781
Dinitrophenol (2,4-)	51285
Dinitrotoluene (2,4-)	121142
Dioxane (1,4-) (1,4-Diethyleneoxide)	123911
Epichlorohydrin (1-Chloro-2,3-epoxypropane)	106898
Ethyl acrylate	140885
Ethylbenzene	100414
Ethyl chloride (Chloroethane)	75003
Ethylene dibromide (Dibromoethane)	106934
Ethylene glycol dimethyl ether	110714
Ethylene glycol monobutyl ether acetate	112072
Ethylene glycol monoethyl ether acetate	111159
Ethylene glycol monoethyl ether	110805
Ethylene glycol monomethyl ether	109864
Ethylene glycol monomethyl ether acetate	110496
Ethylene glycol monopropyl ether	2807309
Ethylene oxide	75218
Ethylidene dichloride (1,1-Dichloroethane)	75343
Formaldehyde	50000
Hexachlorobenzene	118741
Hexachlorobutadiene	87683
Hexachloroethane	67721
Hexane	110543
Isophorone	78591
Methanol	67561
Methyl bromide (Bromomethane)	74839
Methyl chloride (Chloromethane)	74873
Methyl hydrazine	60344
Methyl isobutyl ketone (Hexone)	108101
Methyl methacrylate	80626
Methyl tert-butyl ether	1634044
Methylene chloride (Dichloromethane)	75092
Methylenedianiline (4,4"-)	101779
Naphthalene	91203
Nitrobenzene	98953
Nitropropane (2-)	79469
Phenol	108952

^a CAS Number = Chemical Abstract Service number.

Chemical name	CAS Number ^a
Phenylenediamine (p-)	106503
Phosgene	75445
Propionaldehyde	123386
Propylene dichloride (1,2-Dichloropropane)	78875
Propylene oxide	75569
Quinone	106514
Styrene	100425
Tetrachloroethane (1,1,2,2-)	79345
Tetrachloroethylene (Perchloroethylene)	127184
Toluene	108883
Toluidine (o-)	95534
Trichlorobenzene (1,2,4-)	120821
Trichloroethane (1,1,1-) (Methyl chloroform)	71556
Trichloroethane (1,1,2-) (Vinyl trichloride)	79005
Trichloroethylene	79016
Trichlorophenol (2,4,5-)	95954
Triethylamine	121448
Trimethylpentane (2,2,4-)	540841
Vinyl acetate	108054
Vinyl chloride (chloroethylene)	75014
Vinylidene chloride (1,1-Dichloroethylene)	75354
Xylene (m-)	108383
Xylene (o-)	95476
Xylene (p-)	106423

^a CAS Number = Chemical Abstract Service number.

[62 FR 2740, Jan. 17, 1997, as amended at 71 FR 76614, Dec. 21, 2006; 89 FR 43175, May 16, 2024]

This content is from the eCFR and is authoritative but unofficial.

Title 40 —Protection of Environment

Chapter I —Environmental Protection Agency

Subchapter C —Air Programs

Part 63 —National Emission Standards for Hazardous Air Pollutants for Source Categories

Authority: 42 U.S.C. 7401 *et seq.*

Source: 57 FR 61992, Dec. 29, 1992, unless otherwise noted.

Subpart G National Emission Standards for Hazardous Air Pollutants From the Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater

- § 63.110 Applicability.
- § 63.111 Definitions.
- § 63.112 Emission standard.
- § 63.113 Process vent provisions—reference control technology.
- § 63.114 Process vent provisions—monitoring requirements.
- § 63.115 Process vent provisions—methods and procedures for process vent group determination.
- § 63.116 Process vent provisions—performance test methods and procedures to determine compliance.
- § 63.117 Process vent provisions—reporting and recordkeeping requirements for group and TRE determinations and performance tests.
- § 63.118 Process vent provisions—periodic reporting and recordkeeping requirements.
- § 63.119 Storage vessel provisions—reference control technology.
- § 63.120 Storage vessel provisions—procedures to determine compliance.
- § 63.121 Storage vessel provisions—alternative means of emission limitation.
- § 63.122 Storage vessel provisions—reporting.
- § 63.123 Storage vessel provisions—recordkeeping.
- § 63.124 Process vents and storage vessels that are in ethylene oxide service—procedures to determine compliance.
- § 63.125 [Reserved]
- § 63.126 Transfer operations provisions—reference control technology.
- § 63.127 Transfer operations provisions—monitoring requirements.
- § 63.128 Transfer operations provisions—test methods and procedures.
- § 63.129 Transfer operations provisions—reporting and recordkeeping for performance tests and notification of compliance status.
- § 63.130 Transfer operations provisions—periodic recordkeeping and reporting.
- § 63.131 [Reserved]
- § 63.132 Process wastewater provisions—general.

- § 63.133 Process wastewater provisions—wastewater tanks.
- § 63.134 Process wastewater provisions—surface impoundments.
- § 63.135 Process wastewater provisions—containers.
- § 63.136 Process wastewater provisions—individual drain systems.
- § 63.137 Process wastewater provisions—oil-water separators.
- § 63.138 Process wastewater provisions—performance standards for treatment processes managing Group 1 wastewater streams and/or residuals removed from Group 1 wastewater streams.
- § 63.139 Process wastewater provisions—control devices.
- § 63.140 Process wastewater provisions—delay of repair.
- §§ 63.141-63.142 [Reserved]
- § 63.143 Process wastewater provisions—inspections and monitoring of operations.
- § 63.144 Process wastewater provisions—test methods and procedures for determining applicability and Group 1/Group 2 determinations (determining which wastewater streams require control).
- § 63.145 Process wastewater provisions—test methods and procedures to determine compliance.
- § 63.146 Process wastewater provisions—reporting.
- § 63.147 Process wastewater provisions—recordkeeping.
- § 63.148 Leak inspection provisions.
- § 63.149 Control requirements for certain liquid streams in open systems within a chemical manufacturing process unit.
- § 63.150 Emissions averaging provisions.
- § 63.151 Initial notification.
- § 63.152 General reporting and continuous records.
- § 63.153 Implementation and enforcement.

Table 1 to Subpart G of Part 63

Process Vents—Coefficients for Total Resource Effectiveness for Existing Source Nonhalogenated and Halogenated Vent Streams

Table 1A to Subpart G of Part 63

Applicable 40 CFR Part 63 General Provisions

Table 2 to Subpart G of Part 63

Process Vents—Coefficients for Total Resource Effectiveness for New Source Nonhalogenated and Halogenated Vent Streams

Table 3 to Subpart G of Part 63

Process Vents—Process Vents—Monitoring, Recordkeeping, and Reporting Requirements for Control Devices and Recapture Devices

Table 4 to Subpart G of Part 63

Process Vents—Monitoring, Recordkeeping, and Reporting
Requirements for Maintaining a TRE Index Value >1.0 and. ≤4.0
[No Longer Applicable in Accordance With § 63.113(a)(4)]

Table 5 to Subpart G of Part 63

Group 1 Storage Vessels at Existing Sources

Table 6 to Subpart G of Part 63

Group 1 Storage Vessels at New Sources

Table 7 to Subpart G of Part 63

Transfer Operations—Monitoring, Recordkeeping, and Reporting
Requirements for Complying With 98 Weight-Percent Reduction
of Total Organic Hazardous Air Pollutants Emissions or a Limit of
20 Parts per Million by Volume

Table 8 to Subpart G of Part 63

Organic HAP's Subject to the Wastewater Provisions for Process
Units at New Sources

Table 9 to Subpart G of Part 63

Organic HAP's Subject to the Wastewater Provisions for Process
Units at New and Existing Sources and Corresponding Fraction
Removed (Fr) Values

Table 10 to Subpart G of Part 63

Wastewater—Compliance Options for Wastewater Tanks

Table 11 to Subpart G of Part 63

Wastewater—Inspection and Monitoring Requirements for Waste
Management Units

Table 12 to Subpart G of Part 63

Monitoring Requirements for Treatment Processes

Table 13 to Subpart G of Part 63

Wastewater—Monitoring Requirements for Control Devices

Tables 14-14b to Subpart G of Part 63 [Reserved]

Table 15 to Subpart G of Part 63

Wastewater—Information on Table 8 and/or Table 9 Compounds
To Be Submitted With Notification of Compliance Status for
Process Units at New and/or Existing Sources ^{a b}

Table 16 to Subpart G of Part 63 [Reserved]

Table 17 to Subpart G of Part 63

Information for Treatment Processes To Be Submitted With

Notification of Compliance Status ^{a b}

Table 18 to Subpart G of Part 63

Information for Waste Management Units To Be Submitted With
Notification of Compliance Status ^{a b}

Table 19 to Subpart G of Part 63

Wastewater—Information on Residuals To Be Submitted With
Notification of Compliance Status ^{a b}

Table 20 to Subpart G of Part 63

Wastewater—Periodic Reporting Requirements for Control
Devices Subject to § 63.139 Used To Comply With §§ 63.13
Through 63.139

Table 21 to Subpart G of Part 63

Average Storage Temperature (T_s) as a Function of Tank Paint
Color

Table 22 to Subpart G of Part 63

Paint Factors for Fixed Roof Tanks

Table 23 to Subpart G of Part 63

Average Clingage Factors (c) ^a

Table 24 to Subpart G of Part 63

Typical Number of Columns as a Function of Tank Diameter for
Internal Floating Roof Tanks With Column Supported Fixed Roofs
^a

Table 25 to Subpart G of Part 63

Effective Column Diameter (F_c)

Table 26 to Subpart G of Part 63

Seal Related Factors for Internal Floating Roof Vessels

Table 27 to Subpart G of Part 63

Summary of Internal Floating Deck Fitting Loss Factors (K_F) and
Typical Number of Fittings (N_F)

Table 28 to Subpart G of Part 63

Deck Seam Length Factors ^a (S_D) for Internal Floating Roof
Tanks

Table 29 to Subpart G of Part 63

Seal Related Factors for External Floating Roof Vessels

Table 30 to Subpart G of Part 63

Roof Fitting Loss Factors, K_{Fa} , K_{Fb} , and m , ^a and Typical Number

of Fittings, N_T

Table 31 to Subpart G of Part 63

Typical Number of Vacuum Breakers, N_{F6} and Roof Drains, ^a N_{F7}

Table 32 to Subpart G of Part 63

Typical Number of Roof Legs, ^a N_{F8}

Table 33 to Subpart G of Part 63

Saturation Factors

Table 34 to Subpart G of Part 63

Fraction Measured (F_m) and Fraction Emitted (F_e) For HAP
Compounds in Wastewater Streams

Table 35 to Subpart G of Part 63

Control Requirements for Items of Equipment That Meet the
Criteria of § 63.149 of Subpart G

Table 36 to Subpart G of Part 63

Compound Lists Used for Compliance Demonstrations for
Enhanced Biological Treatment Processes (See § 63.145(h))

Table 37 to Subpart G of Part 63

Default Biorates for List 1 Compounds

Table 38 to Subpart G of Part 63

Toxic Equivalency Factors

Figure 1 to Subpart G of Part 63

Definitions of Terms Used in Wastewater Equations

Subpart G—National Emission Standards for Hazardous Air Pollutants From the Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater

Source: 59 FR 19468, Apr. 22, 1994, unless otherwise noted.

§ 63.110 Applicability.

- (a) This subpart applies to all process vents, storage vessels, transfer racks, wastewater streams, and in-process equipment subject to § 63.149 within a source subject to subpart F of this part.
- (b) *Overlap with other regulations for storage vessels.*
 - (1) After the compliance dates specified in § 63.100 of subpart F of this part, a Group 1 or Group 2 storage vessel that is also subject to the provisions of 40 CFR part 60, subpart Kb is required to comply only with the provisions of this subpart.

- (2) After the compliance dates specified in § 63.100 of subpart F of this part, a Group 1 storage vessel that is also subject to the provisions of 40 CFR part 61, subpart Y is required to comply only with the provisions of this subpart.
- (3) Except as specified in paragraph (j) of this section, after the compliance dates specified in § 63.100, a Group 2 storage vessel that is also subject to the provisions of 40 CFR part 61, subpart Y is required to comply only with the provisions of part 61, subpart Y, of this chapter. The recordkeeping and reporting requirements of part 61, subpart Y, will be accepted as compliance with the recordkeeping and reporting requirements of this subpart.

(c) *Overlap with other regulations for transfer racks.*

- (1) After the compliance dates specified in § 63.100 of subpart F of this part, a Group 1 transfer rack that is also subject to the provisions of 40 CFR part 61, subpart BB is required to comply only with the provisions of this subpart.
- (2) After the compliance dates specified in § 63.100 of subpart F of this part, a Group 2 transfer rack that is also subject to the provisions of 40 CFR part 61, subpart BB is required to comply with the provisions of either paragraph (c)(2)(i) or (c)(2)(ii) of this subpart.
 - (i) Except as provided in paragraph (j) of this section, if the transfer rack is subject to the control requirements specified in § 61.302 of this chapter, then the transfer rack is required to comply with the control requirements of § 61.302. The owner or operator may elect to comply with either the associated testing, monitoring, reporting, and recordkeeping requirements of part 61, subpart BB, of this chapter or with the testing, monitoring, recordkeeping, and reporting requirements specified in this subpart for Group 1 transfer racks. The owner or operator shall indicate this decision in either the Notification of Compliance Status specified in § 63.152(b) or in an operating permit application or amendment.
 - (ii) If the transfer rack is subject only to reporting and recordkeeping requirements under 40 CFR part 61, subpart BB, then the transfer rack is required to comply only with the reporting and recordkeeping requirements specified in this subpart for Group 2 transfer racks and is exempt from the reporting and recordkeeping requirements in 40 CFR part 61, subpart BB.

(d) *Overlap with other regulations for process vents.*

- (1) After the compliance dates specified in § 63.100 of subpart F of this part, a Group 1 process vent that is also subject to the provisions of 40 CFR part 60, subpart III is required to comply only with the provisions of this subpart.
- (2) After the compliance dates specified in § 63.100, the owner or operator of a Group 2 process vent that is also subject to the provisions of part 60, subpart III, of this chapter shall determine requirements according to paragraphs (d)(2)(i) and (ii) of this section. For each source as defined in § 63.101, on and after July 15, 2027, this paragraph no longer applies.
 - (i) If the Group 2 process vent has a TRE value less than 1 as determined by the procedures in 40 CFR part 60, subpart III, the process vent is required to comply with the provisions in paragraphs (d)(2)(i)(A) through (d)(2)(i)(C) of this section.
 - (A) The provisions in both this subpart and in 40 CFR part 60, subpart III for applicability determination and the associated recordkeeping and reporting;

- (B) The provisions in both this subpart and in 40 CFR part 60, subpart III for process changes and recalculation of the TRE index value and the associated recordkeeping and reporting; and
 - (C) The control requirements in § 60.612 of 40 CFR part 60, subpart III. The owner or operator may elect to comply with either the associated testing, monitoring, reporting, and recordkeeping requirements of 40 CFR part 60, subpart III or with the testing, monitoring, reporting, and recordkeeping requirements specified in this subpart for Group 1 process vents. The owner or operator shall indicate this decision in either the Notification of Compliance Status specified in § 63.152(b) of this subpart or in an operating permit application or amendment.
- (ii) If the Group 2 process vent has a TRE value greater than or equal to 1 as determined by the procedures in 40 CFR part 60, subpart III, the process vent is required to comply only with the provisions specified in paragraphs (d)(2)(ii)(A) through (d)(2)(ii)(D) of this section.
- (A) The provisions in both this subpart and in 40 CFR part 60, subpart III for applicability determination and the associated recordkeeping and reporting;
 - (B) The provisions in both this subpart and in 40 CFR part 60, subpart III for process changes and recalculation of the TRE index value and the associated recordkeeping and reporting;
 - (C) If the provisions of both this subpart and 40 CFR part 60, subpart III require continuous monitoring of recovery device operating parameters, the process vent is required to comply only with the provisions that are specified in this subpart for continuous monitoring of recovery device operating parameters and the associated testing, reporting, and recordkeeping.
 - (D) If only the provisions of 40 CFR part 60, subpart III require continuous monitoring of recovery device operating parameters, the process vent is required to comply only with the provisions that are specified in 40 CFR part 60, subpart III for continuous monitoring of recovery device operating parameters and the associated testing, reporting, and recordkeeping.
- (3) After the compliance dates specified in 63.100, if an owner or operator of a process vent subject to this subpart that is also subject to the provisions of part 60, subpart III, of this chapter elects to control the process vent to the levels required in § 63.113(a)(1) or (2) without calculating the TRE index value for the vent according to the procedures specified in § 63.115(d), then the owner or operator shall comply with the testing, monitoring, reporting, and recordkeeping provisions of this subpart and shall be exempt from the testing, monitoring, reporting, and recordkeeping provisions of part 60, subpart III. For each source as defined in § 63.101, on and after July 15, 2027, this paragraph no longer applies.
- (4) After the compliance dates specified in § 63.100 of subpart F of this part, a Group 1 process vent that is also subject to the provisions of 40 CFR part 60, subpart NNN is required to comply only with the provisions of this subpart.
- (5) After the compliance dates specified in § 63.100, the owner or operator of a Group 2 process vent that is also subject to the provisions of 40 CFR part 60, subpart NNN shall determine requirements according to paragraphs (d)(5)(i) and (ii) of this section. For each source as defined in § 63.101, on and after July 15, 2027, this paragraph no longer applies.

- (i) If the Group 2 process vent has a TRE value less than 1 as determined by the procedures in 40 CFR part 60, subpart NNN, the process vent is required to comply with the provisions in paragraphs (d)(5)(i)(A) through (d)(5)(i)(C) of this section.
 - (A) The provisions in both this subpart and in 40 CFR part 60, subpart NNN for applicability determination and the associated recordkeeping and reporting;
 - (B) The provisions in both this subpart and in 40 CFR part 60, subpart NNN for process changes and recalculation of the TRE index value and the associated recordkeeping and reporting; and
 - (C) The control requirements in § 60.662 of 40 CFR part 60, subpart NNN. The owner or operator may elect to comply with either the associated testing, monitoring, reporting, and recordkeeping requirements of 40 CFR part 60, subpart NNN or with the testing, monitoring, reporting, and recordkeeping requirements specified in this subpart for Group 1 process vents. The owner or operator shall indicate this decision in either the Notification of Compliance Status specified in § 63.152(b) of this subpart or in an operating permit application or amendment.
- (ii) If the Group 2 process vent has a TRE value greater than or equal to 1 as determined by the procedures in 40 CFR part 60, subpart NNN, the process vent is required to comply only with the provisions specified in paragraphs (d)(5)(ii)(A) through (d)(5)(ii)(D) of this section.
 - (A) The provisions in both this subpart and in 40 CFR part 60, subpart NNN for applicability determination and the associated recordkeeping and reporting;
 - (B) The provisions in both this subpart and in 40 CFR part 60, subpart NNN for process changes and recalculation of the TRE index value and the associated recordkeeping and reporting;
 - (C) If the provisions of both this subpart and 40 CFR part 60, subpart NNN require continuous monitoring of recovery device operating parameters, the process vent is required to comply only with the provisions that are specified in this subpart for continuous monitoring of recovery device operating parameters and the associated testing, reporting, and recordkeeping.
 - (D) If only the provisions of 40 CFR part 60, subpart NNN require continuous monitoring of recovery device operating parameters, the process vent is required to comply only with the provisions that are specified in 40 CFR part 60, subpart NNN for continuous monitoring of recovery device operating parameters and the associated testing, reporting, and recordkeeping.
- (6) After the compliance dates specified in § 63.100, if an owner or operator of a process vent subject to this subpart that is also subject to the provisions of part 60, subpart NNN, of this chapter elects to control the process vent to the levels required in § 63.113(a)(1) or (2) without calculating the TRE index value for the vent according to the procedures specified in § 63.115(d), then the owner or operator shall comply with the testing, monitoring, reporting, and recordkeeping provisions of this subpart and shall be exempt from the testing, monitoring, reporting, and recordkeeping provisions of part 60, subpart NNN. For each source as defined in § 63.101, on and after July 15, 2027, this paragraph no longer applies.

- (7) After the compliance dates specified in § 63.100 of subpart F of this part, a Group 1 process vent that is also subject to the provisions of 40 CFR part 60, subpart RRR is required to comply only with the provisions of this subpart.
- (8) After the compliance dates specified in § 63.100, the owner or operator of a Group 2 process vent that is also subject to the provisions of part 60, subpart RRR, of this chapter shall determine requirements according to paragraphs (d)(8)(i) and (ii) of this section. For each source as defined in § 63.101, on and after July 15, 2027, this paragraph no longer applies.
 - (i) If the Group 2 process vent has a TRE value less than 1 as determined by the procedures in 40 CFR part 60, subpart RRR, the process vent is required to comply with the provisions in paragraphs (d)(8)(i)(A) through (d)(8)(i)(C) of this section.
 - (A) The provisions in both this subpart and in 40 CFR part 60, subpart RRR for applicability determination and the associated recordkeeping and reporting;
 - (B) The provisions in both this subpart and in 40 CFR part 60, subpart RRR for process changes and recalculation of the TRE index value and the associated recordkeeping and reporting; and
 - (C) The control requirements in § 60.702 of 40 CFR part 60, subpart RRR. The owner or operator may elect to comply with either the associated testing, monitoring, reporting, and recordkeeping requirements of 40 CFR part 60, subpart RRR or with the testing, monitoring, reporting, and recordkeeping requirements specified in this subpart for Group 1 process vents. The owner or operator shall indicate this decision in either the Notification of Compliance Status specified in § 63.152(b) of this subpart or in an operating permit application or amendment.
 - (ii) If the Group 2 process vent has a TRE value greater than or equal to 1 as determined by the procedures in 40 CFR part 60, subpart RRR, the process vent is required to comply only with the provisions specified in paragraphs (d)(8)(ii)(A) through (d)(8)(ii)(D) of this section.
 - (A) The provisions in both this subpart and in 40 CFR part 60, subpart RRR for applicability determination and the associated recordkeeping and reporting;
 - (B) The provisions in both this subpart and in 40 CFR part 60, subpart RRR for process changes and recalculation of the TRE index value and the associated recordkeeping and reporting;
 - (C) If the provisions of both this subpart and 40 CFR part 60, subpart RRR require continuous monitoring of recovery device operating parameters, the process vent is required to comply only with the provisions that are specified in this subpart for continuous monitoring of recovery device operating parameters and the associated testing, reporting, and recordkeeping.
 - (D) If only the provisions of 40 CFR part 60, subpart RRR require continuous monitoring of recovery device operating parameters, the process vent is required to comply only with the provisions that are specified in 40 CFR part 60, subpart RRR for continuous monitoring of recovery device operating parameters and the associated testing, reporting, and recordkeeping.

(9) After the compliance dates specified in § 63.100, if an owner or operator of a process vent subject to this subpart that is also subject to the provisions of part 60, subpart RRR, of this chapter elects to control the process vent to the levels required in § 63.113(a)(1) or (2) without calculating the TRE index value for the vent according to the procedures specified in § 63.115(d), then the owner or operator shall comply with the testing, monitoring, reporting, and recordkeeping provisions of this subpart and shall be exempt from the testing, monitoring, reporting, and recordkeeping provisions of part 60, subpart RRR. For each source as defined in § 63.101, on and after July 15, 2027, this paragraph no longer applies.

(10) As an alternative to the requirements of paragraphs (d)(2), (d)(3), (d)(5), (d)(6), (d)(8), and/or (d)(9) of this section as applicable, if a chemical manufacturing process unit has equipment subject to the provisions of this subpart and equipment subject to the provisions of 40 CFR part 60, subpart III, NNN, or RRR, the owner or operator may elect to apply this subpart to all such equipment in the chemical manufacturing process unit. If the owner or operator elects this method of compliance, all total organic compounds minus methane and ethane, in such equipment shall be considered for purposes of applicability and compliance with this subpart, as if they were organic hazardous air pollutants. Compliance with the provisions of this subpart, in the manner described in this paragraph, shall be deemed to constitute compliance with 40 CFR part 60, subpart III, NNN, or RRR, as applicable.

(e) *Overlap with other regulations for wastewater.*

(1) Except as specified in paragraph (j) of this section, after the compliance dates specified in § 63.100, the owner or operator of a Group 1 or Group 2 wastewater stream that is also subject to the provisions of part 61, subpart FF, of this chapter is required to comply with the provisions of both this subpart and part 61, subpart FF. Alternatively, the owner or operator may elect to comply with the provisions of paragraphs (e)(1)(i) and (ii) of this section, which shall constitute compliance with the provisions of part 61, subpart FF.

(i) Comply with the provisions of this subpart; and

(ii) For any Group 2 wastewater stream or organic stream whose benzene emissions are subject to control through the use of one or more treatment processes or waste management units under the provisions of 40 CFR part 61, subpart FF on or after December 31, 1992, comply with the requirements of this subpart for Group 1 wastewater streams.

(2) After the compliance dates specified in § 63.100 of subpart F of this part, the owner or operator of any Group 1 or Group 2 wastewater stream that is also subject to provisions in 40 CFR parts 260 through 272 shall comply with the requirements of either paragraph (e)(2)(i) or (e)(2)(ii) of this section.

(i) For each Group 1 or Group 2 wastewater stream, the owner or operator shall comply with the more stringent control requirements (e.g., waste management units, numerical treatment standards, etc.) and the more stringent testing, monitoring, recordkeeping, and reporting requirements that overlap between the provisions of this subpart and the provisions of 40 CFR parts 260 through 272. The owner or operator shall keep a record of the information used to determine which requirements were the most stringent and shall submit this information if requested by the Administrator; or

(ii) The owner or operator shall submit, no later than four months before the applicable compliance date specified in § 63.100 of subpart F of this part, a request for a case-by-case determination of requirements. The request shall include the information specified in paragraphs (e)(2)(ii)(A) and (e)(2)(ii)(B) of this section.

(A) Identification of the wastewater streams that are subject to this subpart and to provisions in 40 CFR parts 260 through 272, determination of the Group 1/Group 2 status of those streams, determination of whether or not those streams are listed or exhibit a characteristic as specified in 40 CFR part 261, and determination of whether the waste management unit is subject to permitting under 40 CFR part 270.

(B) Identification of the specific control requirements (e.g., waste management units, numerical treatment standards, etc.) and testing, monitoring, recordkeeping, and reporting requirements that overlap between the provisions of this subpart and the provisions of 40 CFR parts 260 through 272.

(f) ***Overlap with the Vinyl Chloride NESHAP.***

(1) After the compliance dates specified in § 63.100 of subpart F of this part, the owner or operator of any Group 1 process vent that is also subject to the provisions of 40 CFR part 61, subpart F shall comply only with the provisions of this subpart.

(2) Except as specified in paragraph (j) of this section, after the compliance dates specified in § 63.100, the owner or operator of any Group 2 process vent that is also subject to the provisions of part 61, subpart F, of this chapter shall comply with the provisions specified in either paragraph (f)(2)(i) or (ii) of this section.

(i) If the process vent is already controlled by a combustion device meeting the requirements of 40 CFR part 61, subpart F, then the owner or operator shall comply with either the associated testing, monitoring, reporting, and recordkeeping provisions for Group 1 process vents in this subpart or the testing, monitoring, reporting, and recordkeeping provisions of 40 CFR part 61, subpart F. The owner or operator shall indicate this decision in either the Notification of Compliance Status specified in § 63.152(b) of this subpart or in an operating permit application or amendment.

(ii) If the process vent is not already controlled by a combustion device, then the owner or operator shall comply with the provisions of both this subpart and 40 CFR part 61, subpart F.

(3) After the compliance dates specified in § 63.100, if an owner or operator of a process vent subject to this subpart that is also subject to the provisions of part 61, subpart F, of this chapter elects to control the process vent to the levels required in § 63.113(a)(1) or (2) without calculating the TRE index value for the vent according to the procedures specified in § 63.115(d), then the owner or operator shall comply with the testing, monitoring, reporting, and recordkeeping provisions of this subpart and shall be exempt from the testing, monitoring, reporting, and recordkeeping provisions of part 61, subpart F. For each source as defined in § 63.101, on and after July 15, 2027, this paragraph no longer applies.

(4) Except as specified in paragraph (j) of this section, after the compliance dates specified in § 63.100, the owner or operator of a Group 1 or Group 2 wastewater stream that is also subject to the provisions of 40 CFR part 61, subpart F shall comply with the provisions of either paragraph (f)(4)(i) or (ii) of this section.

- (i) The owner or operator shall comply with the provisions of both this subpart and 40 CFR part 61, subpart F or
 - (ii) The owner or operator may submit, no later than four months before the applicable compliance date specified in § 63.100 of subpart F of this part, information demonstrating how compliance with 40 CFR Part 61, subpart F, will also ensure compliance with this subpart. The information shall include a description of the testing, monitoring, reporting, and recordkeeping that will be performed.
- (g) **Rules stayed for reconsideration.** Notwithstanding any other provision of this subpart, the effectiveness of subpart G is stayed from October 24, 1994, to April 24, 1995, only as applied to those sources for which the owner or operator makes a representation in writing to the Administrator that the resolution of the area source definition issues could have an effect on the compliance status of the source with respect to subpart G.
- (h) **Overlap with other regulations for monitoring, recordkeeping, or reporting with respect to combustion devices, recovery devices, or recapture devices.**
- (1) Except as specified in paragraph (h)(2) of this section, after the compliance dates specified in § 63.100, if any combustion device, recovery device, or recapture device subject to this subpart is also subject to monitoring, recordkeeping, and reporting requirements in part 264, subpart AA or CC, of this chapter or is subject to monitoring and recordkeeping requirements in part 265, subpart AA or CC, of this chapter and the owner or operator complies with the periodic reporting requirements under 40 CFR part 264, subpart AA or CC that would apply to the device if the facility had final-permitted status, the owner or operator may elect to comply either with the monitoring, recordkeeping, and reporting requirements of this subpart, or with the monitoring, recordkeeping, and reporting requirements in parts 264 and/or 265, as described in this paragraph, which shall constitute compliance with the monitoring, recordkeeping, and reporting requirements of this subpart. The owner or operator shall identify which option has been selected in the Notification of Compliance Status required by § 63.152(b).
 - (2) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10) of subpart F of this part, paragraph (h)(1) of this section no longer applies.
 - (i) **Alternative means of compliance** – For each source as defined in § 63.101, on and after July 15, 2027, this paragraph (i) no longer applies.
 - (i) For Group 1 and Group 2 process vents, 40 CFR part 65, subpart D, satisfies the requirements of §§ 63.102, 63.103, 63.112 through 63.118, 63.148, 63.151, and 63.152.
 - (ii) For Group 1 storage vessels, 40 CFR part 65, subpart C, satisfies the requirements of §§ 63.102, 63.103, 63.112, 63.119 through 63.123, 63.148, 63.151, and 63.152.
 - (iii) For Group 1 transfer racks, 40 CFR part 65, subpart E, satisfies the requirements of §§ 63.102, 63.103, 63.112, 63.126 through 63.130, 63.148, 63.151, and 63.152.
 - (iv) For equipment, comply with § 63.160(g).
 - (2) **Part 63, subpart A.** Owners or operators who choose to comply with 40 CFR part 65 must also comply with the applicable general provisions of this part 63 listed in table 1A of this subpart. All sections and paragraphs of subpart A of this part that are not mentioned in table 1A of this subpart

do not apply to owners or operators who choose to comply with 40 CFR part 65, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with a subpart of 40 CFR part 65 must comply with 40 CFR part 65, subpart A.

(j) **Overlap with other regulations for flares.**

- (1) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), flares used as a control device to comply with the overlap provisions in either paragraph (b)(3), (c)(2)(i), (e)(1), (f)(2)(i), (f)(2)(ii), or (f)(4)(i) or (ii) of this section must comply with the provisions specified in § 63.108 and are no longer subject to any flare related provisions of part 61, subparts F, Y, BB, and FF, of this chapter or § 60.18 of this chapter.
- (2) Owners and operators of flares that are subject to the flare related requirements of this subpart and flare related requirements of any other regulation in part 60, 61, or 63 of this chapter, may elect to comply with the requirements in § 63.108 in lieu of all flare related requirements in any other regulation in part 60, 61, or 63.

[59 FR 19468, Apr. 22, 1994, as amended at 59 FR 53360, Oct. 24, 1994; 60 FR 5321, Jan. 27, 1995; 61 FR 64575, Dec. 5, 1996; 62 FR 2742, Jan. 17, 1997; 65 FR 78284, Dec. 14, 2000; 66 FR 6929, Jan. 22, 2001; 89 FR 43175, May 16, 2024]

§ 63.111 Definitions.

All terms used in this subpart shall have the meaning given them in the Act and in subpart F of this part.

[89 FR 43177, May 16, 2024]

§ 63.112 Emission standard.

- (a) The owner or operator of an existing source subject to the requirements of this subpart shall control emissions of organic HAP's to the level represented by the following equation:

$$E_A = 0.02\sum EPV_1 + \sum EPV_2 + 0.05\sum ES_1 + \sum ES_2 + 0.02\sum ETR_1 + \sum ETR_2 + \sum EWW_{1C} + \sum EWW_2$$

where:

E_A = Emission rate, megagrams per year, allowed for the source.

$0.02\sum EPV_1$ = Sum of the residual emissions, megagrams per year, from all Group 1 process vents, as defined in § 63.111 of this subpart.

$\sum EPV_2$ = Sum of the emissions, megagrams per year, from all Group 2 process vents as defined in § 63.111 of this subpart.

$0.05\sum ES_1$ = Sum of the residual emissions, megagrams per year, from all Group 1 storage vessels, as defined in § 63.111 of this subpart.

$\sum ES_2$ = Sum of the emissions, megagrams per year, from all Group 2 storage vessels, as defined in § 63.111 of this subpart.

$0.02\sum ETR_1$ = Sum of the residual emissions, megagrams per year, from all Group 1 transfer racks, as defined in § 63.111 of this subpart.

$\sum ETR_2$ = Sum of the emissions, megagrams per year, from all Group 2 transfer racks, as defined in § 63.111 of this subpart.

$\sum EWW_{1C}$ = Sum of the residual emissions from all Group 1 wastewater streams, as defined in § 63.111 of this subpart. This term is calculated for each Group 1 stream according to the equation for EW_{1C} in § 63.150(g)(5)(i) of this subpart.

$\sum EWW_2$ = Sum of emissions from all Group 2 wastewater streams, as defined in § 63.111 of this subpart.

The emissions level represented by this equation is dependent on the collection of emission points in the source. The level is not fixed and can change as the emissions from each emission point change or as the number of emission points in the source changes.

- (b) The owner or operator of a new source subject to the requirements of this subpart shall control emissions of organic HAP's to the level represented by the equation in paragraph (a) of this section.
- (c) The owner or operator of an existing source shall demonstrate compliance with the emission standard in paragraph (a) of this section by following the procedures specified in paragraph (e) of this section for all emission points, or by following the emissions averaging compliance approach specified in paragraph (f) of this section for some emission points and the procedures specified in paragraph (e) of this section for all other emission points within the source.
- (d) The owner or operator of a new source shall demonstrate compliance with the emission standard in paragraph (b) of this section only by following the procedures in paragraph (e) of this section. The owner or operator of a new source may not use the emissions averaging compliance approach.
- (e) The owner or operator of an existing or new source may comply with the process vent provisions in §§ 63.113 through 63.118 of this subpart, the storage vessel provisions in §§ 63.119 through 63.123 of this subpart, the transfer operation provisions in §§ 63.126 through 63.130 of this subpart, the wastewater provisions in §§ 63.131 through 63.147 of this subpart, the leak inspection provisions in § 63.148, and the provisions in § 63.149 of this subpart.
 - (1) The owner or operator using this compliance approach shall also comply with the requirements of § 63.151 and § 63.152 of this subpart, as applicable.
 - (2) The owner or operator using this compliance approach is not required to calculate the annual emission rate specified in paragraph (a) of this section.
 - (3) When emissions of different kinds (e.g., emissions from process vents, transfer operations, storage vessels, process wastewater, and/or in-process equipment subject to § 63.149 of this subpart) are combined, and at least one of the emission streams would be classified as Group 1 in the absence of combination with other emission streams, the owner or operator shall comply with the requirements of either paragraph (e)(3)(i) or paragraph (e)(3)(ii) of this section.
 - (i) Comply with the applicable requirements of this subpart for each kind of emissions in the stream (e.g., the requirements in §§ 63.113 through 63.118 of this subpart G for process vents, and the requirements of §§ 63.126 through 63.130 for transfer operations); or

- (ii) Comply with the first set of requirements identified in paragraphs (e)(3)(ii)(A) through (e)(3)(ii)(E) of this section which applies to any individual emission stream that is included in the combined stream, where either that emission stream would be classified as Group 1 in the absence of combination with other emission streams, or the owner chooses to consider that emission stream to be Group 1 for purposes of this paragraph. Compliance with the first applicable set of requirements identified in paragraphs (e)(3)(ii)(A) through (e)(3)(ii)(E) of this section constitutes compliance with all other requirements in paragraphs (e)(3)(ii)(A) through (e)(3)(ii)(E) of this section applicable to other types of emissions in the combined stream.
 - (A) The requirements of this subpart for Group 1 process vents, including applicable monitoring, recordkeeping, and reporting;
 - (B) The requirements of this subpart for Group 1 transfer racks, including applicable monitoring, recordkeeping, and reporting;
 - (C) The requirements of § 63.119(e) for control of emissions from Group 1 storage vessels, including monitoring, recordkeeping, and reporting;
 - (D) The requirements of § 63.139 for control devices used to control emissions from waste management units, including applicable monitoring, recordkeeping, and reporting; or
 - (E) The requirements of § 63.139 for closed vent systems for control of emissions from in-process equipment subject to § 63.149, including applicable monitoring, recordkeeping, and reporting.
- (f) The owner or operator of an existing source may elect to control some of the emission points within the source to different levels than specified under §§ 63.113 through 63.148 of this subpart by using an emissions averaging compliance approach as long as the overall emissions for the source do not exceed the emission level specified in paragraph (a) of this section. The owner or operator using emissions averaging must meet the requirements in paragraphs (f)(1) and (f)(2) of this section.
 - (1) Calculate emission debits and credits for those emission points involved in the emissions average as specified in § 63.150 of this subpart; and
 - (2) Comply with the requirements of § 63.151 and § 63.152 of this subpart, as applicable.
- (g) A State may restrict the owner or operator of an existing source to using only the procedures in paragraph (e) of this section to comply with the emission standard in paragraph (a) of this section.
- (h) Where the provisions of this subpart require a performance test, waiver of that requirement shall be addressed only as provided in § 63.103(b)(5) of subpart F of this part.

[59 FR 19468, Apr. 22, 1994, as amended at 62 FR 2744, Jan. 17, 1997]

§ 63.113 Process vent provisions—reference control technology.

- (a) The owner or operator of a Group 1 process vent as defined in this subpart shall comply with the requirements of paragraph (a)(1), (2), (3), or (4) of this section, and paragraph (a)(5) of this section. The owner or operator who transfers a gas stream that has the characteristics specified in § 63.107(b) through (h) or meets the criteria specified in § 63.107(i) to an off-site location or an on-site location not owned or operated by the owner or operator of the source for disposal shall comply with the requirements of paragraph (i) of this section.

- (1) Reduce emissions of organic HAP using a flare.
 - (i) Except as specified in § 63.108(a), the flare shall comply with the requirements of § 63.11(b).
 - (ii) Halogenated vent streams, as defined in § 63.111, shall not be vented to a flare.
- (2) Reduce emissions of total organic hazardous air pollutants by 98 weight-percent or to a concentration of 20 parts per million by volume. For combustion devices, the emission reduction or concentration shall be calculated on a dry basis, corrected to 3-percent oxygen, and compliance can be determined by measuring either organic hazardous air pollutants or total organic carbon using the procedures in § 63.116.
 - (i) Compliance with paragraph (a)(2) of this section may be achieved by using any combination of combustion, recovery, and/or recapture devices, except that a recovery device may not be used to comply with paragraph (a)(2) of this section by reducing emissions of total organic hazardous air pollutants by 98 weight-percent, except as provided in paragraph (a)(2)(ii) of this section.
 - (ii) An owner or operator may use a recovery device, alone or in combination with one or more combustion or recapture devices, to reduce emissions of total organic hazardous air pollutants by 98 weight-percent if all the conditions of paragraphs (a)(2)(ii)(A) through (a)(2)(ii)(D) of this section are met.
 - (A) The recovery device (and any combustion device or recapture device which operates in combination with the recovery device to reduce emissions of total organic hazardous air pollutants by 98 weight-percent) was installed before the date of proposal of the subpart of this part 63 that makes this subpart G applicable to process vents in the chemical manufacturing process unit.
 - (B) The recovery device that will be used to reduce emissions of total organic hazardous air pollutants by 98 weight-percent is the last recovery device before emission to the atmosphere.
 - (C) The recovery device, alone or in combination with one or more combustion or recapture devices, is capable of reducing emissions of total organic hazardous air pollutants by 98 weight-percent, but is not capable of reliably reducing emissions of total organic hazardous air pollutants to a concentration of 20 parts per million by volume.
 - (D) If the owner or operator disposed of the recovered material, the recovery device would comply with the requirements of this subpart for recapture devices.
- (3) Except as specified in paragraph (a)(4) of this section, achieve and maintain a TRE index value greater than 1.0 at the outlet of the final recovery device, or prior to release of the vent stream to the atmosphere if no recovery device is present. If the TRE index value is greater than 1.0, the process vent shall comply with the provisions for a Group 2 process vent specified in either paragraph (d) or (e) of this section, whichever is applicable.
- (4) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), the provisions specified in paragraphs (a)(4)(i) through (xv) of this section no longer apply. Instead, an owner or operator of a Group 1 process vent as defined in § 63.101 must comply with the requirements of paragraph (a)(1) or (2) of this section; and an owner or operator of a Group 2 process vent as defined in § 63.101 must comply with the requirements of paragraph (f) or (g) of this section.

- (i) Paragraphs (a)(3), (d), and (e) of this section;
- (ii) Section 63.114(b) and (c)(2);
- (iii) Section 63.115(d), except (d)(2)(v);
- (iv) The following phrases in § 63.115(e): “TRE index value”, “changes that are within the range on which the original TRE calculation was based”, and “the recalculated TRE index value is less than or equal to 1.0, or less than or equal to 4.0 but greater than 1.0”;
- (v) The following phrases in § 63.115(f): “TRE index value”, and “regardless of the TRE index value determined at the location specified in § 63.115(a)”;
- (vi) The last two sentences in § 63.115(f)(2): “If the combined vent stream is a Group 2 process vent as determined by the previous sentence, but one or more of the HON streams, or combinations of HON streams, has a TRE index value greater than 1 but less than or equal to 4, the combined vent stream is a process vent with a TRE index value greater than 1 but less than or equal to 4. In this case, the owner or operator shall monitor the combined vent stream as required by § 63.114(b).”;
- (vii) The phrase in § 63.117(a): “or the provisions for Group 2 process vents with a TRE index value greater than 1.0 but less than or equal to 4.0 in § 63.113(d)”;
- (viii) The phrase in § 63.117(a)(3): “TRE determinations or”;
- (ix) Section 63.117(a)(7) and (b);
- (x) Section 63.118(b), (c), (d)(3), (e)(3), (h), (i), (j), and (k)(4);
- (xi) The following phrase in § 63.118(g)(2): “and TRE index value”;
- (xii) The last sentence in § 63.150(g)(2)(iii)(B)(2);
- (xiii) The phrase in § 63.150(m)(2)(i): “and TRE index value”;
- (xiv) The last sentence in § 63.151(d)(6)(i); and
- (xv) Table 4 to subpart G of this part.

(5) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), an owner or operator of a Group 1 process vent as defined in § 63.101 that contains chlorine, hydrogen chloride, or any other chlorinated compound must reduce emissions of dioxins and furans (toxic equivalency basis) to a concentration of 0.054 nanograms per standard cubic meter on a dry basis corrected to 3 percent oxygen.

(b) If a boiler or process heater is used to comply with the percent reduction requirement or concentration limit specified in paragraph (a)(2) of this section, then the vent stream shall be introduced into the flame zone of such a device.

(c) Halogenated vent streams from Group 1 process vents that are combusted shall be controlled according to paragraph (c)(1) or (2) of this section.

(1) If a combustion device is used to comply with paragraph (a)(2) of this section for a halogenated vent stream, then the gas stream exiting the combustion device shall be conveyed to a halogen reduction device, such as a scrubber, before it is discharged to the atmosphere.

- (i) Except as provided in paragraph (c)(1)(ii) of this section, the halogen reduction device shall reduce overall emissions of hydrogen halides and halogens, as defined in § 63.111 of this subpart, by 99 percent or shall reduce the outlet mass of total hydrogen halides and halogens to less than 0.45 kilogram per hour.
 - (ii) If a scrubber or other halogen reduction device was installed prior to December 31, 1992, the device shall reduce overall emissions of hydrogen halides and halogens, as defined in § 63.111, by 95 percent or shall reduce the outlet mass of total hydrogen halides and halogens to less than 0.45 kilograms per hour.
- (2) A halogen reduction device, such as a scrubber or other technique, may be used to reduce the vent stream halogen atom mass emission rate to less than 0.45 kilogram per hour prior to any combustion control device, and thus make the vent stream nonhalogenated; the vent stream must comply with the requirements of paragraph (a)(1) or (2) of this section.
- (d) Except as specified in paragraph (a)(4) of this section, the owner or operator of a Group 2 process vent having a flow rate greater than or equal to 0.005 standard cubic meter per minute, a HAP concentration greater than or equal to 50 parts per million by volume, and a TRE index value greater than 1.0 but less than or equal to 4.0 shall maintain a TRE index value greater than 1.0 and shall comply with the monitoring of recovery device parameters in § 63.114(b) or (c), the TRE index calculations of § 63.115 of this subpart, and the applicable reporting and recordkeeping provisions of §§ 63.117 and 63.118. Such owner or operator is not subject to any other provisions of §§ 63.114 through 63.118.
 - (e) Except as specified in paragraph (a)(4) of this section, the owner or operator of a Group 2 process vent with a TRE index value greater than 4.0 shall maintain a TRE index value greater than 4.0, comply with the provisions for calculation of a TRE index value in § 63.115 and the reporting and recordkeeping provisions in §§ 63.117(b) and 63.118(c) and (h), and is not subject to monitoring or any other provisions of §§ 63.114 through 63.118.
 - (f) Except as specified in paragraph (l) of this section, the owner or operator of a Group 2 process vent with a flow rate less than 0.005 standard cubic meter per minute shall maintain a flow rate less than 0.005 standard cubic meter per minute; comply with the Group determination procedures in § 63.115 (a), (b), and (e); and the reporting and recordkeeping requirements in §§ 63.117(c), 63.118(d), and 63.118(i); and is not subject to monitoring or any other provisions of §§ 63.114 through 63.118.
 - (g) Except as specified in paragraph (l) of this section, the owner or operator of a Group 2 process vent with a total organic HAP concentration less than 50 parts per million by volume shall maintain a total organic HAP concentration less than 50 parts per million by volume; comply with the Group determination procedures in § 63.115(a), (c), and (e); the reporting and recordkeeping requirements in §§ 63.117(d) and 63.118(e) and (j); and is not subject to monitoring or any other provisions of §§ 63.114 through 63.118.
 - (h) The owner or operator of a process vent complying with paragraph (a)(1) or (2) of this section is not required to perform the group determination described in § 63.115.
 - (i) **Off-site control or on-site control not owned or operated by the source.** This paragraph (i) applies to gas streams that have the characteristics specified in § 63.107(b) through (h) or meet the criteria specified in § 63.107(i); that are transferred for disposal to an on-site control device (or other compliance equipment) not owned or operated by the owner or operator of the source generating the gas stream, or to an off-site control device or other compliance equipment; and that have the characteristics (e.g., flow rate, total organic HAP concentration, or TRE index value as applicable) of a Group 1 process vent, determined at the point of transfer.

- (i) Comply with the provisions specified in § 63.114(d) for each gas stream prior to transfer.
 - (ii) Notify the transferee that the gas stream contains organic hazardous air pollutants that are to be treated in accordance with the provisions of this subpart. The notice shall be submitted to the transferee initially and whenever there is a change in the required control.
- (2) The owner or operator may not transfer the gas stream unless the transferee has submitted to the EPA a written certification that the transferee will manage and treat any gas stream transferred under this paragraph (i) and received from a source subject to the requirements of this subpart in accordance with the requirements of either §§ 63.113 through 63.118, or § 63.102(b), or subpart D of this part if alternative emission limitations have been granted the transferor in accordance with those provisions. The certifying entity may revoke the written certification by sending a written statement to EPA and the owner or operator giving at least 90 days notice that the certifying entity is rescinding acceptance of responsibility for compliance with the regulatory provisions listed in this paragraph (i). Upon expiration of the notice period, the owner or operator may not transfer the gas stream to the transferee. Records retained by the transferee shall be retained in accordance with § 63.103(c).
- (3) By providing this written certification to EPA, the certifying entity accepts responsibility for compliance with the regulatory provisions listed in paragraph (i)(2) of this section with respect to any transfer covered by the written certification. Failure to abide by any of those provisions with respect to such transfers may result in enforcement action by EPA against the certifying entity in accordance with the enforcement provisions applicable to violations of these provisions by owners or operators of sources.
- (4) Written certifications and revocation statements to EPA from the transferees of such gas streams shall be signed by a responsible official of the certifying entity, provide the name and address of the certifying entity, and be sent to the appropriate EPA Regional Office at the addresses listed in § 63.13. Such written certifications are not transferable by the transferee.
- (j) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(11), if the Group 1 or Group 2 process vent contains ethylene oxide such that it is considered to be in ethylene oxide service, as defined in § 63.101, then the owner or operator must comply with the requirements of paragraphs (j)(1) or (2) of this section in addition to all other applicable requirements specified elsewhere in this section.
 - (1) Reduce emissions of ethylene oxide by venting emissions through a closed vent system to a flare; or
 - (2) Reduce emissions of ethylene oxide by venting emissions through a closed vent system to a control device that reduces ethylene oxide by greater than or equal to 99.9 percent by weight, or to a concentration less than 1 ppmv for each process vent or to less than 5 pounds per year for all combined process vents within the process. If a combustion device is used, the ethylene oxide concentration of 1 ppmv must be corrected to 3 percent oxygen.
- (k) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), an owner or operator may designate a process vent as a maintenance vent if the vent is only used as a result of startup, shutdown, maintenance, or inspection of equipment where equipment is emptied, depressurized, degassed, or placed into service. The owner or operator must comply with the applicable requirements in paragraphs (k)(1) through (4) of this section for each maintenance vent. Any vent designated as a maintenance vent is only subject to the maintenance vent provisions in this

paragraph (k) and the associated reporting and recordkeeping requirements in § 63.118(f)(9) and (m), respectively. The owner or operator does not need to designate a maintenance vent as a Group 1 or Group 2 process vent nor identify maintenance vents in a Notification of Compliance Status report.

- (1) Prior to venting to the atmosphere, remove process liquids from the equipment as much as practical and depressurize the equipment to either: A flare meeting the requirements of § 63.108, as applicable, or using any combination of a non-flare combustion, recovery, and/or recapture device meeting the requirements in paragraph (a)(2) of this section until one of the following conditions, as applicable, is met.
 - (i) The concentration of the vapor in the equipment served by the maintenance vent is less than 10 percent of its lower explosive limit (LEL) and has an outlet concentration less than or equal to 20 ppmv hydrogen halide and halogen HAP.
 - (ii) If there is no ability to measure the concentration of the vapor in the equipment based on the design of the equipment, the pressure in the equipment served by the maintenance vent is reduced to 5 pounds per square inch gauge (psig) or less. Upon opening the maintenance vent, active purging of the equipment cannot be used until the concentration of the vapors in the maintenance vent (or inside the equipment if the maintenance is a hatch or similar type of opening) is less than 10 percent of its LEL.
 - (iii) The equipment served by the maintenance vent contains less than 50 pounds of total volatile organic compounds (VOC).
 - (iv) If, after applying best practices to isolate and purge equipment served by a maintenance vent, none of the applicable criterion in paragraphs (k)(1)(i) through (iii) of this section can be met prior to installing or removing a blind flange or similar equipment blind, then the pressure in the equipment served by the maintenance vent must be reduced to 2 psig or less before installing or removing the equipment blind. During installation or removal of the equipment blind, active purging of the equipment may be used provided the equipment pressure at the location where purge gas is introduced remains at 2 psig or less.
- (2) Except for maintenance vents complying with the alternative in paragraph (k)(1)(iii) of this section, the owner or operator must determine the concentration or, if applicable, equipment pressure using process instrumentation or portable measurement devices and follow procedures for calibration and maintenance according to manufacturer's specifications.
- (3) For maintenance vents complying with the alternative in paragraph (k)(1)(iii) of this section, the owner or operator must determine mass of VOC in the equipment served by the maintenance vent based on the equipment size and contents after considering any contents drained or purged from the equipment. Equipment size may be determined from equipment design specifications. Equipment contents may be determined using process knowledge.
- (4) In addition to complying with the requirements in paragraphs (k)(1) through (3) of this section, for process vents in ethylene oxide service, subject to the requirements of § 63.124 that are designated as maintenance vents, owners and operators may not release more than 1.0 tons of ethylene oxide from all maintenance vents combined per any consecutive 12-month period. The owner or operator must keep monthly records of the quantity in tons of ethylene oxide released from each maintenance vent and include a description of the method used to estimate this quantity.

- (l) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), paragraphs (f) and (g) of this section no longer apply. Instead, the owner or operator of a Group 2 process vent with a total organic HAP mass flow rate less than 1.0 pound per hour shall maintain a total organic HAP mass flow rate less than 1.0 pound per hour; comply with the Group determination procedures in § 63.115(g); and the reporting and recordkeeping requirements in §§ 63.117(g) and 63.118(n); and is not subject to monitoring or any other provisions of §§ 63.114 through 63.118.

[89 FR 43177, May 16, 2024]

§ 63.114 Process vent provisions—monitoring requirements.

- (a) Each owner or operator of a process vent that uses a combustion device to comply with the requirements in § 63.113(a)(1), (2), or (5), or that uses a recovery device or recapture device to comply with the requirements in § 63.113(a)(2), shall install monitoring equipment specified in paragraph (a)(1), (2), (3), (4), (5), or (6) of this section, depending on the type of device used. All monitoring equipment shall be installed, calibrated, maintained, and operated according to manufacturer's specifications or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately.
 - (1) Where an incinerator is used, a temperature monitoring device equipped with a continuous recorder is required.
 - (i) Where an incinerator other than a catalytic incinerator is used, a temperature monitoring device shall be installed in the firebox or in the ductwork immediately downstream of the firebox in a position before any substantial heat exchange occurs.
 - (ii) Where a catalytic incinerator is used, temperature monitoring devices shall be installed in the gas stream immediately before and after the catalyst bed.
 - (2) Where a flare is used, except as specified in § 63.108(a), the following monitoring equipment is required: A device (including but not limited to a thermocouple, ultra-violet beam sensor, or infrared sensor) capable of continuously detecting the presence of a pilot flame.
 - (3) Where a boiler or process heater of less than 44 megawatts design heat input capacity is used, the following monitoring equipment is required: a temperature monitoring device in the firebox equipped with a continuous recorder. This requirement does not apply to gas streams that are introduced with primary fuel or are used as the primary fuel.
 - (4) Where a scrubber is used with an incinerator, boiler, or process heater in the case of halogenated vent streams, the following monitoring equipment is required for the scrubber.
 - (i) A pH monitoring device equipped with a continuous recorder shall be installed to monitor the pH of the scrubber effluent.
 - (ii) A flow meter equipped with a continuous recorder shall be located at the scrubber influent for liquid flow. Gas flow rate shall be determined using one of the procedures specified in paragraphs (a)(4)(ii)(A) through (C) of this section.
 - (A) The owner or operator may determine gas flow rate using the design blower capacity, with appropriate adjustments for pressure drop.

- (B) If the scrubber is subject to rules in 40 CFR parts 264 through 266 that have required a determination of the liquid to gas (L/G) ratio prior to the applicable compliance date for this subpart specified in § 63.100(k), the owner or operator may determine gas flow rate by the method that had been utilized to comply with those rules. A determination that was conducted prior to the compliance date for this subpart may be utilized to comply with this subpart if it is still representative.
 - (C) The owner or operator may prepare and implement a gas flow rate determination plan that documents an appropriate method which will be used to determine the gas flow rate. The plan shall require determination of gas flow rate by a method which will at least provide a value for either a representative or the highest gas flow rate anticipated in the scrubber during representative operating conditions other than startups, shutdowns, or malfunctions. The plan shall include a description of the methodology to be followed and an explanation of how the selected methodology will reliably determine the gas flow rate, and a description of the records that will be maintained to document the determination of gas flow rate. The owner or operator shall maintain the plan as specified in § 63.103(c). For each source as defined in § 63.101, on and after July 15, 2027, the phrase "other than startups, shutdowns, or malfunctions" in this paragraph no longer applies.
- (5) Where a recovery device or recapture device is used to comply with the requirements of § 63.113(a)(2) or (5), the owner or operator shall utilize the appropriate monitoring device identified in paragraph (a)(5)(i), (ii), (iii), (iv), or (v) of this section. All monitoring equipment shall be installed, calibrated, and maintained according to the manufacturer's specifications or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately.
- (i) Install either an organic monitoring device equipped with a continuous recorder;
 - (ii) Where an absorber is the final recovery device in the recovery system, a scrubbing liquid temperature monitoring device and a specific gravity monitoring device, each equipped with a continuous recorder shall be used;
 - (iii) Where a condenser is the final recovery device in the recovery system, a condenser exit (product side) temperature monitoring device equipped with a continuous recorder shall be used;
 - (iv) Except as specified in paragraph (a)(5)(v) of this section, where a carbon adsorber is the final recovery device in the recovery system, an integrating regeneration stream flow monitoring device having an accuracy of ± 10 percent or better, capable of recording the total regeneration stream mass or volumetric flow for each regeneration cycle; and a carbon bed temperature monitoring device, capable of recording the carbon bed temperature after each regeneration and within 15 minutes of completing any cooling cycle shall be used.
 - (v) Beginning no later than the compliance dates specified in § 63.100(k)(10), if the owner or operator vents emissions through a closed vent system to an adsorber(s) that cannot be regenerated or a regenerative adsorber(s) that is regenerated offsite, then the owner or operator must install a system of two or more adsorber units in series and comply with the requirements specified in paragraphs (a)(5)(v)(A) through (C) of this section.
 - (A) Conduct an initial performance test or design evaluation of the adsorber and establish the breakthrough limit and adsorber bed life.

- (B) Monitor the HAP or total organic compound (TOC) concentration through a sample port at the outlet of the first adsorber bed in series according to the schedule in paragraph (a)(5)(v)(C)(2) of this section. The owner or operator must measure the concentration of HAP or TOC using either a portable analyzer, in accordance with Method 21 of appendix A-7 to part 60 of this chapter using methane, propane, isobutylene, or the primary HAP being controlled as the calibration gas or Method 25A of part 60, appendix A-7, using methane, propane, or the primary HAP being controlled as the calibration gas.
- (C) Comply with paragraph (a)(5)(v)(C)(1) of this section and comply with the monitoring frequency according to paragraph (a)(5)(v)(C)(2) of this section.
 - (1) The first adsorber in series must be replaced immediately when breakthrough, as defined in § 63.101, is detected between the first and second adsorber. The original second adsorber (or a fresh canister) will become the new first adsorber and a fresh adsorber will become the second adsorber. For purposes of this paragraph, “immediately” means within 8 hours of the detection of a breakthrough for adsorbers of 55 gallons or less, and within 24 hours of the detection of a breakthrough for adsorbers greater than 55 gallons. The owner or operator must monitor at the outlet of the first adsorber within 3 days of replacement to confirm it is performing properly.
 - (2) Based on the adsorber bed life established according to paragraph (a)(5)(v)(A) of this section and the date the adsorbent was last replaced, conduct monitoring to detect breakthrough at least monthly if the adsorbent has more than 2 months of life remaining, at least weekly if the adsorbent has between 2 months and 2 weeks of life remaining, and at least daily if the adsorbent has 2 weeks or less of life remaining.
- (6) Where sorbent injection is used, the following monitoring equipment is required for the sorbent injection system:
 - (i) A sorbent injection rate monitoring device (e.g., weigh belt, weigh hopper, hopper flow measurement device) installed in a position that provides a representative measurement equipped with a continuous recorder to monitor the sorbent injection rate; and
 - (ii) A flow measurement device equipped with a continuous recorder to monitor the carrier gas flow rate.
- (b) Except as specified in § 63.113(a)(4), each owner or operator of a process vent with a TRE index value greater than 1.0 as specified under § 63.113(a)(3) or (d) that uses one or more recovery devices shall install either an organic monitoring device equipped with a continuous recorder or the monitoring equipment specified in paragraph (b)(1), (2), or (3) of this section, depending on the type of recovery device used. All monitoring equipment shall be installed, calibrated, and maintained according to the manufacturer's specifications or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately. Monitoring is not required for process vents with TRE index values greater than 4.0 as specified in § 63.113(e).
 - (1) Where an absorber is the final recovery device in the recovery system, a scrubbing liquid temperature monitoring device and a specific gravity monitoring device, each equipped with a continuous recorder shall be used;
 - (2) Where a condenser is the final recovery device in the recovery system, a condenser exit (product side) temperature monitoring device equipped with a continuous recorder shall be used;

- (3) Where a carbon adsorber is the final recovery device in the recovery system, an integrating regeneration stream flow monitoring device having an accuracy of ± 10 percent or better, capable of recording the total regeneration stream mass or volumetric flow for each regeneration cycle; and a carbon bed temperature monitoring device, capable of recording the carbon bed temperature after each regeneration and within 15 minutes of completing any cooling cycle shall be used.
- (c) An owner or operator of a process vent may request approval to monitor parameters other than those listed in paragraph (a) or (b) of this section. The request shall be submitted according to the procedures specified in § 63.151(f) or § 63.152(e) of this subpart. Approval shall be requested if the owner or operator:
 - (1) Uses a combustion device other than an incinerator, boiler, process heater, or flare; or
 - (2) Except as specified in § 63.113(a)(4), maintains a TRE greater than 1.0 but less than or equal to 4.0 without a recovery device or with a recovery device other than the recovery devices listed in paragraphs (a) and (b) of this section; or
 - (3) Uses one of the combustion or recovery or recapture devices listed in paragraphs (a) and (b) of this section, but seeks to monitor a parameter other than those specified in paragraphs (a) and (b) of this section.
- (d) The owner or operator of a process vent shall comply with paragraphs (d)(1) or (2) and (d)(3) of this section for any bypass line between the origin of the gas stream (i.e., at an air oxidation reactor, distillation unit, or reactor as identified in § 63.107(b)) and the point where the gas stream reaches the process vent, as described in § 63.107, that could divert the gas stream directly to the atmosphere. Except as specified in paragraph (d)(3)(ii) of this section, equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and pressure relief valves needed for safety purposes are not subject to this paragraph (d).
 - (1) Properly install, maintain, and operate a flow indicator that takes a reading at least once every 15 minutes. Records shall be generated as specified in § 63.118(a)(3). The flow indicator shall be installed at the entrance to any bypass line that could divert the gas stream to the atmosphere; or
 - (2) Secure the bypass line valve in the non-diverting position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the non-diverting position and the gas stream is not diverted through the bypass line
 - (3) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10):
 - (i) The use of a bypass line at any time on a closed vent system to divert emissions (subject to the emission standards in § 63.112) to the atmosphere or to a control device not meeting the requirements specified in this subpart is an emissions standards violation.
 - (ii) The last sentence in paragraph (d) of this section no longer applies. Instead, the exemptions specified in paragraphs (d)(3)(ii)(A) and (B) of this section apply.
 - (A) Except for pressure relief devices subject to § 63.165(e)(4) of subpart H of this part, equipment such as low leg drains and equipment subject to the requirements of subpart H of this part are not subject to this paragraph (d) of this section.

- (B) Open-ended valves or lines that use a cap, blind flange, plug, or second valve and follow the requirements specified in § 60.482-6(a)(2), (b), and (c) of this chapter or follow requirements codified in another regulation that are the same as § 60.482-6(a)(2), (b), and (c) are not subject to this paragraph (d).
- (e) The owner or operator shall establish a range that indicates proper operation of the control or recovery device for each parameter monitored under paragraphs (a), (b), and (c) of this section based on the results of the most recent performance test. In order to establish the range, the information required in § 63.152(b) shall be submitted in the Notification of Compliance Status or the operating permit application or amendment. The range may be based upon a prior performance test conducted for determining compliance with a regulation promulgated by the EPA, and the owner or operator is not required to conduct an initial performance test under § 63.116, if the prior performance test was conducted using the same methods specified in § 63.116 and either no process changes have been made since the test, or the owner or operator can demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process changes. Subsequent performance tests must be conducted according to § 63.103(b)(1).

[89 FR 43179, May 16, 2024]

§ 63.115 Process vent provisions—methods and procedures for process vent group determination.

- (a) For purposes of determining vent stream flow rate, total organic HAP or total organic carbon concentration or TRE index value as applicable, as specified under paragraph (b), (c), or (d) of this section, the sampling site shall be after the last recovery device (if any recovery devices are present) but prior to the inlet of any control device that is present and prior to release to the atmosphere.
 - (1) Method 1 or 1A of 40 CFR part 60, appendix A, as appropriate, shall be used for selection of the sampling site.
 - (2) No traverse site selection method is needed for vents smaller than 0.10 meter in diameter.
- (b) Except as specified in paragraph (g) of this section, to demonstrate that a vent stream flow rate is less than 0.005 standard cubic meter per minute in accordance with the Group 2 process vent definition of this subpart, the owner or operator shall measure flow rate by the following procedures:
 - (1) The sampling site shall be selected as specified in paragraph (a) of this section.
 - (2) The gas volumetric flow rate shall be determined using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A, as appropriate.
- (c) Except as specified in paragraph (g) of this section, each owner or operator seeking to demonstrate that a vent stream has an organic HAP concentration below 50 parts per million by volume in accordance with the Group 2 process vent definition of this subpart shall measure either total organic HAP or TOC concentration using the following procedures:
 - (1) The sampling site shall be selected as specified in paragraph (a) of this section.
 - (2) Method 18 or Method 25A of 40 CFR part 60, appendix A shall be used to measure concentration; alternatively, any other method or data that has been validated according to the protocol in Method 301 of appendix A of this part may be used.

- (3) Where Method 18 of 40 CFR part 60, appendix A is used, the following procedures shall be used to calculate parts per million by volume concentration:
- (i) The minimum sampling time for each run shall be 1 hour in which either an integrated sample or four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time, such as 15 minute intervals during the run.
 - (ii) The concentration of either TOC (minus methane and ethane) or organic HAP shall be calculated according to paragraph (c)(3)(ii)(A) or (c)(3)(ii)(B) of this section as applicable.
 - (A) The TOC concentration (C_{TOC}) is the sum of the concentrations of the individual components and shall be computed for each run using the following equation:

$$C_{\text{TOC}} = \frac{\sum_{i=1}^x \left(\sum_{j=1}^n C_{ji} \right)}{X}$$

where:

C_{TOC} = Concentration of TOC (minus methane and ethane), dry basis, parts per million by volume.

C_{ji} = Concentration of sample component j of the sample i, dry basis, parts per million by volume.

n = Number of components in the sample.

x = Number of samples in the sample run.

- (B) The total organic HAP concentration (C_{HAP}) shall be computed according to the equation in paragraph (c)(3)(ii)(A) of this section except that only the organic HAP species shall be summed. The list of organic HAP's is provided in table 2 of subpart F of this part.
- (4) Where Method 25A of 40 CFR part 60, appendix A is used, the following procedures shall be used to calculate parts per million by volume TOC concentration:
- (i) Method 25A of 40 CFR part 60, appendix A, shall be used only if a single organic HAP compound is greater than 50 percent of total organic HAP, by volume, in the vent stream.
 - (ii) The vent stream composition may be determined by either process knowledge, test data collected using an appropriate EPA method, or a method or data validated according to the protocol in Method 301 of appendix A of this part. Examples of information that could constitute process knowledge include calculations based on material balances, process stoichiometry, or previous test results provided the results are still relevant to the current vent stream conditions.
 - (iii) The organic HAP used as the calibration gas for Method 25A of 40 CFR part 60, appendix A shall be the single organic HAP compound present at greater than 50 percent of the total organic HAP by volume.

- (iv) The span value for Method 25A of 40 CFR part 60, appendix A shall be 50 parts per million by volume.
 - (v) Use of Method 25A of 40 CFR part 60, appendix A is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.
 - (vi) The owner or operator shall demonstrate that the concentration of TOC including methane and ethane measured by Method 25A of 40 CFR part 60, appendix A is below 25 parts per million by volume to be considered a Group 2 vent with an organic HAP concentration below 50 parts per million by volume and to qualify for the low concentration exclusion in § 63.113(g) of this subpart.
- (d) Except as specified in § 63.113(a)(4), to determine the TRE index value, the owner or operator shall conduct a TRE determination and calculate the TRE index value according to the procedures in paragraph (d)(1) or (2) of this section and the TRE equation in paragraph (d)(3) of this section.
- (1) Engineering assessment may be used to determine vent stream flow rate, net heating value, TOC emission rate, and total organic HAP emission rate for the representative operating condition expected to yield the lowest TRE index value.
 - (i) If the TRE value calculated using such engineering assessment and the TRE equation in paragraph (d)(3) of this section is greater than 4.0, then the owner or operator is not required to perform the measurements specified in paragraph (d)(2) of this section.
 - (ii) If the TRE value calculated using such engineering assessment and the TRE equation in paragraph (d)(3) of this section is less than or equal to 4.0, then the owner or operator is required to perform the measurements specified in paragraph (d)(2) of this section for group determination or consider the process vent a Group 1 vent and comply with the emission reduction specified in § 63.113(a) of this subpart.
 - (iii) Engineering assessment includes, but is not limited to, the following:
 - (A) Previous test results provided the tests are representative of current operating practices at the process unit.
 - (B) Bench-scale or pilot-scale test data representative of the process under representative operating conditions.
 - (C) Maximum flow rate, TOC emission rate, organic HAP emission rate, or net heating value limit specified or implied within a permit limit applicable to the process vent.
 - (D) Design analysis based on accepted chemical engineering principles, measurable process parameters, or physical or chemical laws or properties. Examples of analytical methods include, but are not limited to:
 - (1) Use of material balances based on process stoichiometry to estimate maximum organic HAP concentrations,
 - (2) Estimation of maximum flow rate based on physical equipment design such as pump or blower capacities,
 - (3) Estimation of TOC or organic HAP concentrations based on saturation conditions,

- (4) Estimation of maximum expected net heating value based on the vent stream concentration of each organic compound or, alternatively, as if all TOC in the vent stream were the compound with the highest heating value.
- (E) All data, assumptions, and procedures used in the engineering assessment shall be documented.
- (2) Except as provided in paragraph (d)(1) of this section, vent stream flow rate, net heating value, TOC emission rate, and total organic HAP emission rate shall be measured and calculated according to the procedures in paragraphs (d)(2)(i) through (v) of this section and used as input to the TRE index value calculation in paragraph (d)(3) of this section.
 - (i) The vent stream volumetric flow rate (Q_s), in standard cubic meters per minute at 20 degrees Celcius, shall be determined using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A, as appropriate. If the vent stream tested passes through a final steam jet ejector and is not condensed, the vent stream volumetric flow shall be corrected to 2.3 percent moisture.
 - (ii) The molar composition of the vent stream, which is used to calculate net heating value, shall be determined using the following methods:
 - (A) Method 18 of 40 CFR part 60, appendix A to measure the concentration of each organic compound.
 - (B) American Society for Testing and Materials D1946-77 to measure the concentration of carbon monoxide and hydrogen.
 - (C) Method 4 of 40 CFR part 60, appendix A, to measure the moisture content of the vent stream.
 - (iii) The net heating value of the vent stream shall be calculated using the following equation:

$$H_T = K_i \left(\sum_{j=1}^n C_j H_j \right) (1 - B_{ws})$$

where:

H_T = Net heating value of the sample, megaJoule per standard cubic meter, where the net enthalpy per mole of vent stream is based on combustion at 25 °C and 760 millimeters of mercury, but the standard temperature for determining the volume corresponding to one mole is 20 °C, as in the definition of Q_s (vent stream flow rate).

K_i = Constant, 1.740×10^{-7} (parts per million)⁻¹ (gram-mole per standard cubic meter) (megaJoule per kilocalorie), where standard temperature for (gram-mole per standard cubic meter) is 20 °C.

B_{ws} = Water vapor content of the vent stream, proportion by volume; except that if the vent stream passes through a final steam jet and is not condensed, it shall be assumed that $B_{ws} = 0.023$ in order to correct to 2.3 percent moisture.

C_j = Concentration on a dry basis of compound j in parts per million, as measured for all organic compounds by Method 18 of 40 CFR part 60, appendix A and measured for hydrogen and carbon monoxide by American Society for Testing and Materials D1946-77 as indicated in paragraph (d)(2)(ii) of this section.

H_j = Net heat of combustion of compound j , kilocalorie per gram-mole, based on combustion at 25 °C and 760 millimeters mercury. The heats of combustion of vent stream components shall be determined using American Society for Testing and Materials D2382-76 if published values are not available or cannot be calculated.

- (iv) The emission rate of TOC (minus methane and ethane) (E_{TOC}) and the emission rate of total organic HAP (E_{HAP}) in the vent stream shall both be calculated using the following equation:

$$E = K_2 \left[\sum_{j=1}^n C_j M_j \right] Q_s$$

where:

E = Emission rate of TOC (minus methane and ethane) or emission rate of total organic HAP in the sample, kilograms per hour.

K_2 = Constant, 2.494×10^{-6} (parts per million)⁻¹ (gram-mole per standard cubic meter) (kilogram/gram) (minutes/hour), where standard temperature for (gram-mole per standard cubic meter) is 20 °C.

C_j = Concentration on a dry basis of organic compound j in parts per million as measured by Method 18 of 40 CFR part 60, appendix A as indicated in paragraph (d)(2)(ii) of this section. If the TOC emission rate is being calculated, C_j includes all organic compounds measured minus methane and ethane; if the total organic HAP emission rate is being calculated, only organic HAP compounds listed in table 2 in subpart F of this part are included.

M_j = Molecular weight of organic compound j , gram/gram-mole.

Q_s = Vent stream flow rate, dry standard cubic meter per minute, at a temperature of 20 °C.

- (v) In order to determine whether a vent stream is halogenated, the mass emission rate of halogen atoms contained in organic compounds shall be calculated.

- (A) The vent stream concentration of each organic compound containing halogen atoms (parts per million by volume, by compound) shall be determined based on the following procedures:

- (1) Process knowledge that no halogen or hydrogen halides are present in the process, or
- (2) Applicable engineering assessment as discussed in paragraph (d)(1)(iii) of this section, or
- (3) Concentration of organic compounds containing halogens measured by Method 18 of 40 CFR part 60, appendix A, or
- (4) Any other method or data that has been validated according to the applicable procedures in Method 301 of appendix A of this part.

- (B) The following equation shall be used to calculate the mass emission rate of halogen atoms:

$$E = K_2 Q \left(\sum_{j=1}^n \sum_{i=1}^m C_j * L_{j,i} * M_{j,i} \right)$$

where:

E = mass of halogen atoms, dry basis, kilogram per hour.

K₂ = Constant, 2.494 × 10⁻⁶ (parts per million)⁻¹ (kilogram-mole per standard cubic meter) (minute/hour), where standard temperature is 20 °C.

C_j = Concentration of halogenated compound j in the gas stream, dry basis, parts per million by volume.

M_{ji} = Molecular weight of halogen atom i in compound j of the gas stream, kilogram per kilogram-mole.

L_{ji} = Number of atoms of halogen i in compound j of the gas stream.

Q = Flow rate of gas stream, dry standard cubic meters per minute, determined according to paragraph (d)(1) or (d)(2)(i) of this section.

j = Halogenated compound j in the gas stream.

i = Halogen atom i in compound j of the gas stream.

n = Number of halogenated compounds j in the gas stream.

m = Number of different halogens i in each compound j of the gas stream.

(3) The owner or operator shall calculate the TRE index value of the vent stream using the equations and procedures in this paragraph.

(i) The equation for calculating the TRE index for a vent stream controlled by a flare or incinerator is as follows:

$$TRE = \frac{1}{E_{HAP}} [a + b(Q_s) + c(H_T) + d(E_{TOC})]$$

where:

TRE = TRE index value.

E_{HAP} = Hourly emission rate of total organic HAP, kilograms per hour, as calculated in paragraph (d)(1) or (d)(2)(iv) of this section.

Q_s = Vent stream flow rate, standard cubic meters per minute, at a standard temperature of 20 °C, as calculated in paragraph (d)(1) or (d)(2)(i) of this section.

H_T = Vent stream net heating value, megaJoules per standard cubic meter, as calculated in paragraph (d)(1) or (d)(2)(iii) of this section.

E_{TOC} = Emission rate of TOC (minus methane and ethane), kilograms per hour, as calculated in paragraph (d)(1) or (d)(2)(iv) of this section.

a,b,c,d = Coefficients presented in table 1 of this subpart, selected in accordance with paragraphs (d)(3)(ii) and (iii) of this section.

- (ii) The owner or operator of a nonhalogenated vent stream shall calculate the TRE index value based on the use of a flare, a thermal incinerator with 0 percent heat recovery, and a thermal incinerator with 70 percent heat recovery and shall select the lowest TRE index value. The owner or operator shall use the applicable coefficients in table 1 of this subpart for nonhalogenated vent streams located within existing sources and the applicable coefficients in table 2 of this subpart for nonhalogenated vent streams located within new sources.
- (iii) The owner or operator of a halogenated vent stream shall calculate the TRE index value based on the use of a thermal incinerator with 0 percent heat recovery, and a scrubber. The owner or operator shall use the applicable coefficients in table 1 of this subpart for halogenated vent streams located within existing sources and the applicable coefficients in table 2 of this subpart for halogenated vent streams located within new sources.
- (e) Except as specified in § 63.113(a)(4), the owner or operator of a Group 2 process vent shall recalculate the TRE index value, flow, or organic hazardous air pollutants concentration for each process vent, as necessary to determine whether the vent is Group 1 or Group 2, whenever process changes are made that could reasonably be expected to change the vent to a Group 1 vent. Examples of process changes include, but are not limited to, changes in production capacity, production rate, feedstock type, or catalyst type, or whenever there is replacement, removal, or addition of recovery equipment. For purposes of this paragraph, process changes do not include: Process upsets; unintentional, temporary process changes; and changes that are within the range on which the original TRE calculation was based.
 - (1) The TRE index value, flow rate, or organic HAP concentration shall be recalculated based on measurements of vent stream flow rate, TOC, and organic HAP concentrations, and heating values as specified in § 63.115 (a), (b), (c), and (d) of this subpart, as applicable, or on best engineering assessment of the effects of the change. Engineering assessments shall meet the specifications in paragraph (d)(1) of this section.
 - (2) Where the recalculated TRE index value is less than or equal to 1.0, or less than or equal to 4.0 but greater than 1.0, the recalculated flow rate is greater than or equal to 0.005 standard cubic meter per minute, or the recalculated concentration is greater than or equal to 50 parts per million by volume, the owner or operator shall submit a report as specified in § 63.118 (g), (h), (i), or (j) of this subpart and shall comply with the appropriate provisions in § 63.113 of this subpart by the dates specified in § 63.100 of subpart F of this part.
- (f) Except as specified in § 63.113(a)(4), notwithstanding any other provisions of this subpart, in any case where a process vent includes one or more gas streams that are not from a source subject to this subpart (hereafter called "non-HON streams" for purposes of this paragraph), and one or more gas streams that meet the criteria in § 63.107(b) through (h) or the criteria in § 63.107(i) (hereafter called "HON streams" for purposes of this paragraph), the owner or operator may elect to comply with paragraphs (f)(1) through (3) of this section.

- (1) The owner or operator may determine the characteristics (flow rate, total organic HAP concentration, and TRE index value) for each HON stream, or combination of HON streams, at a representative point as near as practical to, but before, the point at which it is combined with one or more non-HON streams.
 - (2) If one or more of the HON streams, or combinations of HON streams, has the characteristics (determined at the location specified in paragraph (f)(1) of this section) associated with a Group 1 process vent, the combined vent stream is a Group 1 process vent. Except as specified in paragraph (f)(3) of this section, if none of the HON streams, or combinations of HON streams, when determined at the location specified in paragraph (f)(1) of this section, has the characteristics associated with a Group 1 process vent, the combined vent stream is a Group 2 process vent regardless of the TRE index value determined at the location specified in § 63.115(a). If the combined vent stream is a Group 2 process vent as determined by the previous sentence, but one or more of the HON streams, or combinations of HON streams, has a TRE index value greater than 1 but less than or equal to 4, the combined vent stream is a process vent with a TRE index value greater than 1 but less than or equal to 4. In this case, the owner or operator shall monitor the combined vent stream as required by § 63.114(b).
 - (3) Paragraphs (f)(1) and (2) of this section are not intended to apply instead of any other subpart of this part. If another subpart of this part applies to one or more of the non-HON streams contributing to the combined vent stream, that subpart may impose emission control requirements such as, but not limited to, requiring the combined vent stream to be classified and controlled as a Group 1 process vent.
- (g) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), paragraphs (b) and (c) of this section no longer apply. Instead, to demonstrate that a vent stream total organic HAP mass flow rate is less than 1.0 pound per hour in accordance with the Group 2 process vent definition of this subpart, the owner or operator must use the following procedures:
- (1) The sampling site must be selected as specified in paragraph (a) of this section.
 - (2) Method 18 or Method 25A of appendices A-6 and A-7 to 40 CFR part 60 of this chapter, respectively, or Method 320 of appendix A to this part must be used to measure concentration. ASTM D6420-18 (incorporated by reference, see § 63.14) may also be used in lieu of Method 18 or Method 320, if the target compounds are all known and are all listed in section 1.1 of ASTM D6420-18 as measurable; ASTM D6420-18 must not be used for methane and ethane; and ASTM D6420-18 may not be used as a total VOC method.
 - (3) Where Method 18 of appendix A-6 to part 60 of this chapter, Method 320 of appendix A to this part, or ASTM D6420-18 is used, the following procedures must be used to calculate the total organic HAP mass flow rate:
 - (i) The minimum sampling time for each run must be 1 hour in which either an integrated sample or four grab samples must be taken. If grab sampling is used, then the samples must be taken at approximately equal intervals in time, such as 15 minute intervals during the run.
 - (ii) The mass rate of total organic HAP for each run must be computed using the following equation:

Equation 6 to Paragraph (g)(3)(ii)

$$E_{HAP} = KQ \sum_{j=1}^n C_j M_j$$

Where:

E_{HAP} = Emission rate of total organic HAP, lb/hr.

$K = 1.675 \times 10^{-7}$ (parts per million)⁻¹ (lb-mole per standard cubic feet) (minutes per hour), where standard temperature is 68 °F (20 °C).

Q = Flowrate of gas stream, dry standard cubic feet per minute), where standard temperature is 68 °F (20 °C), determined using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A, as appropriate. The flowrate may be based solely on an engineering assessment if measurements cannot be made with EPA reference methods.

C_j = Concentration of organic compound j in the gas stream as measured by Method 18 of appendix A-6 to 40 CFR part 60, Method 320 of appendix A to this part, or ASTM D6420-18 (incorporated by reference, see § 63.14), ppmv dry basis. The concentration may be based solely on an engineering assessment if measurements cannot be made with EPA reference methods.

M_i = Molecular weight of organic compound j , lb/lb-mole.

j = Individual organic HAP compound in the gas stream. The list of organic HAPs is provided in table 2 of subpart F of this part.

n = Number of organic HAP compounds j in the gas stream.

(iii) The owner or operator must demonstrate that the emission rate of total organic HAP is less than 1.0 pound per hour for the vent stream to be considered a Group 2 process vent.

(4) Where Method 25A of appendix A-7 to part 60 of this chapter is used, the following procedures must be used to calculate parts per million by volume TOC concentration:

(i) Method 25A of appendix A-7 to part 60 of this chapter must be used only if a single organic HAP compound is greater than 50 percent of total organic HAP, by volume, in the vent stream.

(A) This organic HAP must be used as the calibration gas for Method 25A of appendix A-7 to part 60 of this chapter.

(B) Use of Method 25A of appendix A-7 to part 60 of this chapter is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

(ii) The span value for Method 25A of appendix A-7 to part 60 of this chapter must be equal to approximately twice the expected concentration of TOC in the gas stream.

- (iii) The minimum sampling time for each run must be 1 hour. The results must be corrected to a dry basis. You must use Method 4 of appendix A-3 to part 60 of this chapter to convert the Method 25A results to a dry basis.
- (iv) The mass rate of TOC for each run must be computed using the following equation:

Equation 7 to Paragraph (g)(4)(iv)

$$E_{TOC} = KCMQ$$

Where:

E_{TOC} = Emission rate of TOC, lb/hr.

$K = 1.675 \times 10^{-7}$ (parts per million)⁻¹ (lb-mole per standard cubic feet) (minutes per hour), where standard temperature is 68 °F (20 °C).

C = Concentration of TOC in the gas stream as measured by Method 25A of appendix A to part 60 of this chapter ppmv dry basis. The concentration may be based solely on an engineering assessment if measurements cannot be made with EPA reference methods.

M = Molecular weight of the organic HAP used as the calibration gas, lb/lb-mole.

Q = Flowrate of gas stream, dry standard cubic feet per minute, where standard temperature is 68 °F (20 °C), determined using Method 2, 2A, 2C, or 2D of appendix A-1 to part 60 of this chapter, as appropriate. The flowrate may be based solely on an engineering assessment if measurements cannot be made with EPA reference methods.

- (v) The owner or operator must demonstrate that the emission rate of TOC is less than 1.0 pound per hour for the vent stream to be considered a Group 2 process vent.
- (5) The requirements specified in paragraphs (g)(1) through (4) of this section for an initial measurement or initial performance test do not apply if the conditions specified in paragraphs (g)(5)(i) through (iv) of this section are met for a previously conducted measurement or performance test.
 - (i) No changes have been made to the process since the time of the measurement or performance test;
 - (ii) The operating conditions and test methods used during measurement or performance test conform to the requirements in paragraphs (g)(1) through (4) of this section;
 - (iii) The control device and process parameter values established during the previously conducted measurement or performance test are used to demonstrate continuous compliance with the related requirements of this subpart, if applicable; and
 - (iv) The previously conducted measurement or performance test was completed within the last 60 months.

[59 FR 19468, Apr. 22, 1994, as amended at 62 FR 2746, Jan. 17, 1997; 66 FR 6931, Jan. 22, 2001; 89 FR 43181, May 16, 2024]

§ 63.116 Process vent provisions—performance test methods and procedures to determine compliance.

- (a) When a flare is used to comply with § 63.113(a)(1), the owner or operator shall comply with paragraphs (a)(1) through (3) of this section except as specified in § 63.108(a). The owner or operator is not required to conduct a performance test to determine percent emission reduction or outlet organic HAP or TOC concentration.
 - (1) Conduct a visible emission test using the techniques specified in § 63.11(b)(4).
 - (2) Determine the net heating value of the gas being combusted using the techniques specified in § 63.11(b)(6).
 - (3) Determine the exit velocity using the techniques specified in either § 63.11(b)(7)(i) (and § 63.11(b)(7)(iii), where applicable) or § 63.11(b)(8), as appropriate.
- (b) An owner or operator is not required to conduct a performance test when any control device specified in paragraphs (b)(1) through (b)(5) of this section is used.
 - (1) A boiler or process heater with a design heat input capacity of 44 megawatts or greater.
 - (2) A boiler or process heater into which the gas stream is introduced with the primary fuel or is used as the primary fuel.
 - (3) A control device for which a performance test was conducted for determining compliance with a regulation promulgated by the EPA and the test was conducted using the same methods specified in this section and either no process changes have been made since the test, or the owner or operator can demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process changes is not required to conduct an initial performance test. Subsequent performance tests must be conducted according to § 63.103(b)(1).
 - (4) A boiler or process heater burning hazardous waste for which the owner or operator:
 - (i) Has been issued a final permit under part 270 of this chapter and complies with the requirements of part 266, subpart H, of this chapter;
 - (ii) Has certified compliance with the interim status requirements of part 266, subpart H, of this chapter;
 - (iii) Meets the requirement specified in paragraph (b)(4)(v) of this section, and has submitted a Notification of Compliance under § 63.1207(j) and complies with the requirements of subpart EEE of this part; or
 - (iv) Meets the requirement specified in paragraph (b)(4)(v) of this section, complies with subpart EEE of this part, and will submit a Notification of Compliance under § 63.1207(j) by the date the owner or operator would have been required to submit the initial performance test report for this subpart.
 - (v) The owner and operator may not waive performance testing pursuant to § 63.1207(d)(4) and each performance test required by § 63.1207(d) must show compliance with the dioxins and furans emission limit specified in § 63.113(a)(5).
 - (5) A hazardous waste incinerator for which the owner or operator:

- (i) Has been issued a final permit under 40 CFR part 270 and complies with the requirements of part 264, subpart O, of this chapter;
 - (ii) Has certified compliance with the interim status requirements of part 265, subpart O, of this chapter.
 - (iii) Meets the requirement specified in paragraph (b)(5)(v) of this section, and has submitted a Notification of Compliance under § 63.1207(j) and complies with the requirements subpart EEE of this part; or
 - (iv) Meets the requirement specified in paragraph (b)(5)(v) of this section, complies with the requirements subpart EEE of this part, and will submit a Notification of Compliance under § 63.1207(j) by the date the owner or operator would have been required to submit the initial performance test report for this subpart.
 - (v) The owner and operator may not waive performance testing pursuant to § 63.1207(d)(4) and each performance test required by § 63.1207(d) must show compliance with the dioxins and furans emission limit specified in § 63.113(a)(5).
- (c) Except as provided in paragraphs (a) and (b) of this section, an owner or operator using a control device to comply with the organic HAP concentration limit or percent reduction efficiency requirements in § 63.113(a)(2) of this subpart shall conduct performance tests using the procedures in paragraphs (c)(1) through (4) of this section according to the schedule in § 63.103(b)(1) of subpart F of this part. The organic HAP concentration and percent reduction may be measured as either total organic HAP or as TOC minus methane and ethane according to the procedures specified.
- (1) Method 1 or 1A of 40 CFR part 60, appendix A, as appropriate, shall be used for selection of the sampling sites.
- (i) For determination of compliance with the 98 percent reduction of total organic HAP requirement of § 63.113(a)(2) of this subpart, sampling sites shall be located at the inlet of the control device as specified in paragraphs (c)(1)(i)(A) and (c)(1)(i)(B) of this section, and at the outlet of the control device.
 - (A) The control device inlet sampling site shall be located after the final product recovery device.
 - (B) If a vent stream is introduced with the combustion air or as a secondary fuel into a boiler or process heater with a design capacity less than 44 megawatts, selection of the location of the inlet sampling sites shall ensure the measurement of total organic HAP or TOC (minus methane and ethane) concentrations in all vent streams and primary and secondary fuels introduced into the boiler or process heater.
 - (ii) For determination of compliance with the 20 parts per million by volume total organic HAP limit in § 63.113(a)(2) of this subpart, the sampling site shall be located at the outlet of the control device.
- (2) The gas volumetric flow rate shall be determined using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A, as appropriate.
- (3) To determine compliance with the 20 parts per million by volume total organic HAP limit in § 63.113(a)(2) of this subpart, the owner or operator shall use Method 18 of appendix A-6 to part 60 of this chapter to measure either TOC minus methane and ethane or total organic HAP. ASTM

D6420-18 (incorporated by reference, see § 63.14) may also be used in lieu of Method 18, if the target compounds are all known and are all listed in Section 1.1 of ASTM D6420-18 as measurable; ASTM D6420-18 must not be used for methane and ethane; and ASTM D6420-18 may not be used as a total VOC method. Alternatively, any other method or data that has been validated according to the applicable procedures in Method 301 of appendix A of this part, may be used. The following procedures shall be used to calculate parts per million by volume concentration, corrected to 3 percent oxygen:

- (i) The minimum sampling time for each run shall be 1 hour in which either an integrated sample or a minimum of four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time, such as 15 minute intervals during the run.
- (ii) The concentration of either TOC (minus methane or ethane) or total organic HAP shall be calculated according to paragraph (c)(3)(ii)(A) or (c)(3)(ii)(B) of this section.
 - (A) The TOC concentration (C_{TOC}) is the sum of the concentrations of the individual components and shall be computed for each run using the following equation:

$$C_{\text{TOC}} = \sum_{i=1}^x \frac{\left(\sum_{j=1}^n C_{ji} \right)}{X}$$

where:

C_{TOC} = Concentration of TOC (minus methane and ethane), dry basis, parts per million by volume.

C_{ji} = Concentration of sample components j of sample i , dry basis, parts per million by volume.

n = Number of components in the sample.

x = Number of samples in the sample run.

- (B) The total organic HAP concentration (C_{HAP}) shall be computed according to the equation in paragraph (c)(3)(ii)(A) of this section except that only the organic HAP species shall be summed. The list of organic HAP's is provided in table 2 of subpart F of this part.
- (iii) The concentration of TOC or total organic HAP shall be corrected to 3 percent oxygen if a combustion device is the control device.
 - (A) Method 3A of appendix A-2 to part 60 of this chapter or the manual method in ANSI/ASME PTC 19.10-1981 (incorporated by reference, see § 63.14) shall be used to determine the oxygen concentration (%O_{2d}). The samples shall be taken during the same time that the TOC (minus methane or ethane) or total organic HAP samples are taken.
 - (B) The concentration corrected to 3 percent oxygen (C_c) shall be computed using the following equation:

$$C_c = C_m \left(\frac{17.9}{20.9 - \%O_{2d}} \right)$$

Where:

C_c = Concentration of TOC or organic HAP corrected to 3 percent oxygen, dry basis, parts per million by volume.

C_m = Concentration of TOC (minus methane and ethane) or organic HAP, dry basis, parts per million by volume.

$\%O_{2d}$ = Concentration of oxygen, dry basis, percent by volume.

- (4) To determine compliance with the 98 percent reduction requirement of § 63.113(a)(2), the owner or operator shall use Method 18 of appendix A-6 to part 60 of this chapter; alternatively, any other method or data that has been validated according to the applicable procedures in Method 301 of appendix A to this part may be used. ASTM D6420-18 (incorporated by reference, see § 63.14) may also be used in lieu of Method 18, if the target compounds are all known and are all listed in section 1.1 of ASTM D6420-18 as measurable; ASTM D6420-18 must not be used for methane and ethane; and ASTM D6420-18 may not be used as a total VOC method. The following procedures shall be used to calculate percent reduction efficiency:

- (i) The minimum sampling time for each run shall be 1 hour in which either an integrated sample or a minimum of four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time such as 15 minute intervals during the run.
- (ii) The mass rate of either TOC (minus methane and ethane) or total organic HAP (E_i , E_o) shall be computed.

(A) The following equations shall be used:

$$E_i = K_2 \left(\sum_{j=1}^n C_{ij} M_{ij} \right) Q_i$$

$$E_o = K_2 \left(\sum_{j=1}^n C_{oj} M_{oj} \right) Q_o$$

where:

C_{ij} , C_{oj} = Concentration of sample component j of the gas stream at the inlet and outlet of the control device, respectively, dry basis, parts per million by volume.

E_i , E_o = Mass rate of TOC (minus methane and ethane) or total organic HAP at the inlet and outlet of the control device, respectively, dry basis, kilogram per hour.

M_{ij} , M_{oj} = Molecular weight of sample component j of the gas stream at the inlet and outlet of the control device, respectively, gram/gram-mole.

Q_i , Q_o = Flow rate of gas stream at the inlet and outlet of the control device, respectively, dry standard cubic meter per minute.

K_2 = Constant, 2.494×10^{-6} (parts per million) $^{-1}$ (gram-mole per standard cubic meter) (kilogram/gram) (minute/hour), where standard temperature (gram-mole per standard cubic meter) is 20 °C.

(B) Where the mass rate of TOC is being calculated, all organic compounds (minus methane and ethane) measured by Method 18 of appendix A-6 to part 60 of this chapter or ASTM D6420-18 (incorporated by reference, see § 63.14) are summed using the equation in paragraph (c)(4)(ii)(A) of this section.

(C) Where the mass rate of total organic HAP is being calculated, only the organic HAP species shall be summed using the equation in paragraph (c)(4)(ii)(A) of this section. The list of organic HAP's is provided in table 2 of subpart F of this part.

(iii) The percent reduction in TOC (minus methane and ethane) or total organic HAP shall be calculated as follows:

$$R = \frac{E_i - E_o}{E_i} (100)$$

where:

R = Control efficiency of control device, percent.

E_i = Mass rate of TOC (minus methane and ethane) or total organic HAP at the inlet to the control device as calculated under paragraph (c)(4)(ii) of this section, kilograms TOC per hour or kilograms organic HAP per hour.

E_o = Mass rate of TOC (minus methane and ethane) or total organic HAP at the outlet of the control device, as calculated under paragraph (c)(4)(ii) of this section, kilograms TOC per hour or kilograms organic HAP per hour.

(iv) If the vent stream entering a boiler or process heater with a design capacity less than 44 megawatts is introduced with the combustion air or as a secondary fuel, the weight-percent reduction of total organic HAP or TOC (minus methane and ethane) across the device shall be determined by comparing the TOC (minus methane and ethane) or total organic HAP in all combusted vent streams and primary and secondary fuels with the TOC (minus methane and ethane) or total organic HAP exiting the combustion device, respectively.

(d) An owner or operator using a combustion device followed by a scrubber or other halogen reduction device to control halogenated vent streams in compliance with § 63.113(c)(1) shall conduct performance tests to determine compliance with the control efficiency or emission limits for hydrogen halides and halogens according to the schedule in § 63.103(b)(1).

- (1) For an owner or operator determining compliance with the percent reduction of total hydrogen halides and halogens, sampling sites shall be located at the inlet and outlet of the scrubber or other halogen reduction device used to reduce halogen emissions. For an owner or operator determining compliance with the less than 0.45 kilogram per hour outlet emission limit for total hydrogen halides and halogens, the sampling site shall be located at the outlet of the scrubber or other halogen reduction device and prior to any releases to the atmosphere.
- (2) Except as provided in paragraph (d)(5) of this section, Method 26 or Method 26A of 40 CFR part 60, appendix A, shall be used to determine the concentration, in milligrams per dry standard cubic meter, of total hydrogen halides and halogens that may be present in the vent stream. The mass emissions of each hydrogen halide and halogen compound shall be calculated from the measured concentrations and the gas stream flow rate.
- (3) To determine compliance with the percent removal efficiency, the mass emissions for any hydrogen halides and halogens present at the inlet of the scrubber or other halogen reduction device shall be summed together. The mass emissions of the compounds present at the outlet of the scrubber or other halogen reduction device shall be summed together. Percent reduction shall be determined by comparison of the summed inlet and outlet measurements.
- (4) To demonstrate compliance with the less than 0.45 kilogram per hour outlet emission limit, the test results must show that the mass emission rate of total hydrogen halides and halogens measured at the outlet of the scrubber or other halogen reduction device is below 0.45 kilogram per hour.
- (5) The owner or operator may use any other method to demonstrate compliance if the method or data has been validated according to the applicable procedures of Method 301 of appendix A of this part.
- (e) An owner or operator using a scrubber or other halogen reduction device to reduce the vent stream halogen atom mass emission rate to less than 0.45 kilogram per hour prior to a combustion control device in compliance with § 63.113(c)(2) of this subpart shall determine the halogen atom mass emission rate prior to the combustor according to the procedures in § 63.115(d)(2)(v) of this subpart.
- (f) To demonstrate compliance with the emission limits and work practice standards specified in § 63.113(j) for process vents in ethylene oxide service, owners and operators must meet the requirements specified in § 63.124.
- (g) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), an owner or operator using a recapture device to comply with the organic HAP concentration limit or percent reduction efficiency requirements in § 63.113(a)(2) shall conduct a performance test using the same procedures specified in paragraph (c) of this section, except the term "recapture device" is substituted for "control device."
- (h) To demonstrate compliance with the dioxins and furans emission limit specified in § 63.113(a)(5), owners and operators must conduct performance tests using the procedures in paragraphs (h)(1) through (6) of this section according to the schedule in § 63.103(b)(1).
 - (1) The performance test must consist of three test runs. Collect at least 3 dry standard cubic meters of gas per test run.
 - (2) Use Method 1 or 1A of appendix A-1 to 40 CFR part 60 to select the sampling sites at the sampling location. The sampling location must be at the outlet of the final control device.
 - (3) Determine the gas volumetric flowrate using Method 2, 2A, 2C, or 2D of appendix A-1 to part 60 of this chapter.

- (4) Use Method 4 of appendix A-3 to part 60 of this chapter to convert the volumetric flowrate to a dry basis.
- (5) Measure the concentration of each tetra- through octa-chlorinated dioxin and furan congener emitted using Method 23 of appendix A-7 to part 60 of this chapter.
 - (i) For each dioxin and furan congener, multiply the congener concentration by its corresponding toxic equivalency factor specified in table 38 to this subpart. For determination of toxic equivalency, zero may be used for congeners with a concentration less than the estimated detection limit (EDL). For congeners with estimated maximum pollutant concentration (EMPC) results, if the value is less than the EDL, zero may be used. Otherwise, the EMPC value must be used in the calculation of toxic equivalency.
 - (ii) Sum the products calculated in accordance with paragraph (h)(5)(i) of this section to obtain the total concentration of dioxins and furans emitted in terms of toxic equivalency.
- (6) The concentration of dioxins and furans shall be corrected to 3 percent oxygen. Use Method 3A of 40 CFR part 60, appendix A, or the manual method in ANSI/ASME PTC 19.10-1981 (incorporated by reference, see § 63.14) to determine the oxygen concentration (%O_{2d}). The oxygen concentration must be determined concurrently with Method 23 of appendix A-7 to part 60 of this chapter. The concentration corrected to 3 percent oxygen (C_c) shall be computed using the following equation:

$$C_c = C_m \left(\frac{17.9}{20.9 - \%O_{2d}} \right)$$

Where:

C_c = Concentration of dioxins and furans corrected to 3 percent oxygen, dry basis, nanograms per standard cubic meter.

C_m = Concentration of dioxins and furans, dry basis, nanograms per standard cubic meter.

%O_{2d} = Concentration of oxygen, dry basis, percent by volume.

[59 FR 19468, Apr. 22, 1994, as amended at 62 FR 2746, Jan. 17, 1997; 64 FR 20191, Apr. 26, 1999; 66 FR 6931, Jan. 22, 2001; 89 FR 43183, May 16, 2024]

§ 63.117 Process vent provisions—reporting and recordkeeping requirements for group and TRE determinations and performance tests.

- (a) Except as specified in § 63.113(a)(4), each owner or operator subject to the control provisions for Group 1 process vents in § 63.113(a) or the provisions for Group 2 process vents with a TRE index value greater than 1.0 but less than or equal to 4.0 in § 63.113(d) shall:
 - (1) Keep an up-to-date, readily accessible record of the data specified in paragraphs (a)(4) through (10) of this section, as applicable, and
 - (2) Include the data in paragraphs (a)(4) through (10) of this section in the Notification of Compliance Status report as specified in § 63.152(b) of this subpart.

- (3) Except as specified in § 63.113(a)(4), if any subsequent TRE determinations or performance tests are conducted after the Notification of Compliance Status has been submitted, report the data in paragraphs (a)(4) through (a)(10) of this section in the next Periodic Report as specified in § 63.152(c).
- (4) Record and report the following when using a combustion device to achieve a 98 weight percent reduction in organic HAP or an organic HAP concentration of 20 parts per million by volume, as specified in § 63.113(a)(2):
 - (i) The parameter monitoring results for incinerators, catalytic incinerators, boilers or process heaters specified in table 3 of this subpart, and averaged over the same time period of the performance testing.
 - (ii) For an incinerator, the percent reduction of organic HAP or TOC achieved by the incinerator determined as specified in § 63.116(c), or the concentration of organic HAP or TOC (parts per million by volume, by compound) determined as specified in § 63.116(c) at the outlet of the incinerator on a dry basis corrected to 3 percent oxygen.
 - (iii) For a boiler or process heater, a description of the location at which the vent stream is introduced into the boiler or process heater.
 - (iv) For a boiler or process heater with a design heat input capacity of less than 44 megawatts and where the vent stream is introduced with combustion air or used as a secondary fuel and is not mixed with the primary fuel, the percent reduction of organic HAP or TOC, or the concentration of organic HAP or TOC (parts per million by volume, by compound) determined as specified in § 63.116(c) at the outlet of the combustion device on a dry basis corrected to 3 percent oxygen.
- (5) Except as specified in § 63.108(a), record and report the following when using a flare to comply with § 63.113(a)(1):
 - (i) Flare design (i.e., steam-assisted, air-assisted, or non-assisted);
 - (ii) All visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the compliance determination required by § 63.116(a); and
 - (iii) All periods during the compliance determination when the pilot flame is absent.
- (6) Record and report the following when using a scrubber following a combustion device to control a halogenated vent stream:
 - (i) The percent reduction or scrubber outlet mass emission rate of total hydrogen halides and halogens as specified in § 63.116(d);
 - (ii) The pH of the scrubber effluent; and
 - (iii) The scrubber liquid to gas ratio.
- (7) Except as specified in § 63.113(a)(4), record and report the following when achieving and maintaining a TRE index value greater than 1.0 but less than 4.0 as specified in § 63.113(a)(3) or (d):
 - (i) The parameter monitoring results for absorbers, condensers, or carbon adsorbers, as specified in table 4 to this subpart, and averaged over the same time period of the measurements of vent stream flow rate and concentration used in the TRE determination (both measured while the vent stream is normally routed and constituted), and

- (ii) The measurements and calculations performed to determine the TRE index value of the vent stream.
- (8) Record and report the halogen concentration in the vent stream determined according to the procedures specified in § 63.115(d)(2)(v).
- (9) When using a recapture device to achieve a 98 weight percent reduction in organic HAP or an organic HAP concentration of 20 parts per million by volume, as specified in § 63.113(a)(2), record and report the parameter monitoring results for absorbers, condensers, or carbon adsorbers, as specified in table 3 of this subpart, and averaged over the same time period of the performance testing.
- (10) Record and report the following when using a control device, recapture device, or recovery device to meet the dioxins and furans emissions limit.
 - (i) The parameter monitoring results, as specified in table 3 of this subpart, for the applicable device and averaged over the same time period of the performance testing.
 - (ii) The dioxins and furans concentration on a toxic equivalency basis (nanograms per standard cubic meter on a dry basis corrected to 3 percent oxygen) determined as specified in § 63.116(h).
- (b) Except as specified in § 63.113(a)(4), the owner or operator of a Group 2 process vent with a TRE index greater than 4.0 as specified in § 63.113(e), shall maintain records and submit as part of the Notification of Compliance Status specified in § 63.152, measurements, engineering assessments, and calculations performed to determine the TRE index value of the vent stream. Documentation of engineering assessments shall include all data, assumptions, and procedures used for the engineering assessments, as specified in § 63.115(d)(1).
- (c) Except as specified in paragraph (g) of this section, each owner or operator who elects to demonstrate that a process vent is a Group 2 process vent based on a flow rate less than 0.005 standard cubic meter per minute must submit to the Administrator the flow rate measurement using methods and procedures specified in § 63.115(a) and (b) with the Notification of Compliance Status specified in § 63.152.
- (d) Except as specified in paragraph (g) of this section, each owner or operator who elects to demonstrate that a process vent is a Group 2 process vent based on organic HAP or TOC concentration less than 50 parts per million by volume must submit to the Administrator an organic HAP or TOC concentration measurement using the methods and procedures specified in § 63.115(a) and (c) with the Notification of Compliance Status specified in § 63.152.
- (e) If an owner or operator uses a control or recovery device other than those listed in tables 3 and 4 to this subpart or requests approval to monitor a parameter other than those specified in tables 3 and 4 to this subpart, the owner or operator shall submit a description of planned reporting and recordkeeping procedures as required under § 63.151(f) or § 63.152(e). The Administrator will specify appropriate reporting and recordkeeping requirements as part of the review of the permit application or by other appropriate means.
- (f) For each parameter monitored according to tables 3 or 4 to this subpart or paragraph (e) of this section, the owner or operator shall establish a range for the parameter that indicates proper operation of the control or recovery device. In order to establish the range, the information required in § 63.152(b) shall be submitted in the Notification of Compliance Status or the operating permit application or amendment.

- (g) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), paragraphs (c) and (d) of this section no longer apply. Instead, each owner or operator demonstrating that a process vent is a Group 2 process vent based on total organic HAP mass flow rate less than 1.0 pound per hour must submit to the Administrator a total organic HAP measurement using the methods and procedures specified in § 63.115(g) with the Notification of Compliance Status specified in § 63.152.

[89 FR 43184, May 16, 2024]

§ 63.118 Process vent provisions—periodic reporting and recordkeeping requirements.

- (a) Each owner or operator using a control device to comply with § 63.113(a)(1), (2), or (5) shall keep the following records up-to-date and readily accessible:
- (1) Continuous records of the equipment operating parameters specified to be monitored under § 63.114(a) to this subpart and listed in table 3 to this subpart or specified by the Administrator in accordance with § 63.114(c) and § 63.117(e). For flares, the hourly records and records of pilot flame outages specified in table 3 to this subpart shall be maintained in place of continuous records.
 - (2) Records of the daily average value of each continuously monitored parameter for each operating day determined according to the procedures specified in § 63.152(f). For flares complying with § 63.11(b), records of the times and duration of all periods during which all pilot flames are absent shall be kept rather than daily averages. For flares complying with § 63.108, the owner or operator must comply with the recordkeeping requirements specified therein.
 - (3) Hourly records of whether the flow indicator specified under § 63.114(d)(1) was operating and whether a diversion was detected at any time during the hour, as well as records of the times and durations of all periods when the gas stream is diverted to the atmosphere or the monitor is not operating.
 - (4) Where a seal mechanism is used to comply with § 63.114(d)(2), hourly records of flow are not required. In such cases, the owner or operator shall record that the monthly visual inspection of the seals or closure mechanism has been done, and shall record the duration of all periods when the seal mechanism is broken, the bypass line valve position has changed, or the key for a lock-and-key type lock has been checked out, and records of any car-seal that has broken.
 - (5) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), the owner or operator must comply with this paragraph in addition to the requirements in paragraphs (a)(1) through (4) of this section. For each flow event from a bypass line subject to the requirements in § 63.114(d), the owner or operator must maintain records sufficient to determine whether or not the detected flow included flow requiring control. For each flow event from a bypass line requiring control that is released either directly to the atmosphere or to a control device not meeting the requirements in this subpart, the owner or operator must include an estimate of the volume of gas, the concentration of organic HAP in the gas and the resulting emissions of organic HAP that bypassed the control device using process knowledge and engineering estimates.
- (b) Except as specified in § 63.113(a)(4), each owner or operator using a recovery device or other means to achieve and maintain a TRE index value greater than 1.0 but less than 4.0 as specified in § 63.113(a)(3) or (d) shall keep the following records up-to-date and readily accessible:

- (1) Continuous records of the equipment operating parameters specified to be monitored under § 63.114(b) to this subpart and listed in table 4 to this subpart or specified by the Administrator in accordance with § 63.114(c) and § 63.114(e) and
 - (2) Records of the daily average value of each continuously monitored parameter for each operating day determined according to the procedures specified in § 63.152(f). If carbon adsorber regeneration stream flow and carbon bed regeneration temperature are monitored, the records specified in table 4 to this subpart shall be kept instead of the daily averages.
- (c) Except as specified in § 63.113(a)(4), each owner or operator subject to the provisions of this subpart and who elects to demonstrate compliance with the TRE index value greater than 4.0 under § 63.113(e) or greater than 1.0 under § 63.113(a)(3) or (d) shall keep up-to-date, readily accessible records of:
- (1) Any process changes as defined in § 63.115(e); and
 - (2) Any recalculation of the TRE index value pursuant to § 63.115(e).
- (d) Except as specified in paragraph (n) of this section, each owner or operator who elects to comply by maintaining a flow rate less than 0.005 standard cubic meter per minute under § 63.113(f), shall keep up-to-date, readily accessible records of:
- (1) Any process changes as defined in § 63.115(e) that increase the vent stream flow rate,
 - (2) Any recalculation or measurement of the flow rate pursuant to § 63.115(e), and
 - (3) Except as specified in § 63.113(a)(4), if the flow rate increases to 0.005 standard cubic meter per minute or greater as a result of the process change, the TRE determination performed according to the procedures of § 63.115(d).
- (e) Except as specified in paragraph (n) of this section, each owner or operator who elects to comply by maintaining an organic HAP concentration less than 50 parts per million by volume organic HAP concentration under § 63.113(g) shall keep up-to-date, readily accessible records of:
- (1) Any process changes as defined in § 63.115(e) that increase the organic HAP concentration of the vent stream,
 - (2) Any recalculation or measurement of the concentration pursuant to § 63.115(e), and
 - (3) Except as specified in § 63.113(a)(4), if the organic HAP concentration increases to 50 parts per million by volume or greater as a result of the process change, the TRE determination performed according to the procedures of § 63.115(d).
- (f) Each owner or operator who elects to comply with the requirements of § 63.113 of this subpart shall submit to the Administrator Periodic Reports of the following recorded information according to the schedule in § 63.152.
- (1) Reports of daily average values of monitored parameters for all operating days when the daily average values recorded under paragraphs (a) and (b) of this section were outside the ranges established in the Notification of Compliance Status or operating permit, including the date that the parameter was outside the range.
 - (2) For Group 1 points, reports of the duration (in hours) of periods when monitoring data is not collected for each excursion caused by insufficient monitoring data as defined in § 63.152(c)(2)(ii)(A), including the start date of such periods.

- (3) Reports of the times and durations of all periods recorded under paragraph (a)(3) of this section when the gas stream is diverted to the atmosphere through a bypass line and if applicable, the information in paragraph (f)(7) of this section. Include the start date, start time and duration in hours of each period.
- (4) Reports of all periods recorded under paragraph (a)(4) of this section in which the seal mechanism is broken, the bypass line valve position has changed, or the key to unlock the bypass line valve was checked out and if applicable, the information in paragraph (f)(7) of this section. Include the start date, start time and duration in hours of each period.
- (5) Except as specified in paragraph (a) of § 63.108, reports of the times and durations of all periods recorded under paragraph (a)(2) of this section in which all pilot flames of a flare were absent.
- (6) Reports of all carbon bed regeneration cycles during which the parameters recorded under paragraph (b)(2)(v) of this section were outside the ranges established in the Notification of Compliance Status or operating permit. Include the identification of the carbon bed, the monitored parameter that was outside the established range, and the start date, start time and duration in hours of the regeneration cycle.
- (7) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), the owner or operator must comply with this paragraph in addition to the requirements in paragraphs (f)(3) and (4) of this section. For bypass lines subject to the requirements in § 63.114(d), the Periodic Report must include the start date, start time, duration in hours, estimate of the volume of gas in standard cubic feet, the concentration of organic HAP in the gas in parts per million by volume and the resulting mass emissions of organic HAP in pounds that bypass a control device. For periods when the flow indicator is not operating, report the start date, start time, and duration in hours.
- (8) For process vents in ethylene oxide service subject to the requirements of § 63.124, the Periodic Report must include the records for periods specified in paragraph (l)(2) of this section. Indicate the start date and time and end date and time for each period.
- (9) For any maintenance vent release exceeding the applicable limits in § 63.113(k)(1), the compliance report must include the information specified in paragraphs (f)(9)(i) through (iv) of this section. For the purposes of this reporting requirement, if an owner or operator complies with § 63.113(k)(1)(iv) then the owner or operator must report each venting event conducted under those provisions and include an explanation for each event as to why utilization of this alternative was required.
 - (i) Identification of the maintenance vent and the equipment served by the maintenance vent.
 - (ii) The date and time the maintenance vent was opened to the atmosphere.
 - (iii) The LEL in percent, vessel pressure in psig, or mass in pounds of VOC in the equipment, as applicable, at the start of atmospheric venting. If the 5 psig vessel pressure option in § 63.113(k)(1)(ii) was used and active purging was initiated while the concentration of the vapor was 10 percent or greater of its LEL, also include the concentration of the vapors at the time active purging was initiated.
 - (iv) An estimate of the mass in pounds of organic HAP released during the entire atmospheric venting event.

- (g) Whenever a process change, as defined in § 63.115(e), is made that causes a Group 2 process vent to become a Group 1 process vent, the owner or operator shall submit a report within 180 calendar days after the process change as specified in § 63.151(j). The report shall include:
 - (1) A description of the process change;
 - (2) Except as specified in § 63.113(a)(4), the results of the recalculation of the flow rate, organic HAP concentration, and TRE index value required under § 63.115(e) and recorded under paragraph (c), (d), or (e) of this section; and
 - (3) A statement that the owner or operator will comply with the provisions of § 63.113 for Group 1 process vents by the dates specified in subpart F of this part.
- (h) Except as specified in § 63.113(a)(4), whenever a process change, as defined in § 63.115(e), is made that causes a Group 2 process vent with a TRE greater than 4.0 to become a Group 2 process vent with a TRE less than 4.0, the owner or operator shall submit a report within 180 calendar days after the process change. The report may be submitted as part of the next periodic report. The report shall include:
 - (1) A description of the process change,
 - (2) The results of the recalculation of the TRE index value required under § 63.115(e) and recorded under paragraph (c) of this section, and
 - (3) A statement that the owner or operator will comply with the requirements specified in § 63.113(d).
- (i) Except as specified in § 63.113(a)(4), whenever a process change, as defined in § 63.115(e), is made that causes a Group 2 process vent with a flow rate less than 0.005 standard cubic meter per minute to become a Group 2 process vent with a flow rate of 0.005 standard cubic meter per minute or greater and a TRE index value less than or equal to 4.0, the owner or operator shall submit a report within 180 calendar days after the process change. The report may be submitted as part of the next periodic report. The report shall include:
 - (1) A description of the process change,
 - (2) The results of the recalculation of the flow rate and the TRE determination required under § 63.115(e) and recorded under paragraph (d) of this section, and
 - (3) A statement that the owner or operator will comply with the requirements specified in § 63.113(d).
- (j) Except as specified in § 63.113(a)(4), whenever a process change, as defined in § 63.115(e), is made that causes a Group 2 process vent with an organic HAP concentration less than 50 parts per million by volume to become a Group 2 process vent with an organic HAP concentration of 50 parts per million by volume or greater and a TRE index value less than or equal to 4.0, the owner or operator shall submit a report within 180 calendar days after the process change. The report may be submitted as part of the next periodic report. The report shall include:
 - (1) A description of the process change,
 - (2) The results of the recalculation of the organic HAP concentration and the TRE determination required under § 63.115(e) and recorded under paragraph (e) of this section, and
 - (3) A statement that the owner or operator will comply with the requirements specified in § 63.113(d).
- (k) The owner or operator is not required to submit a report of a process change if one of the conditions listed in paragraph (k)(1), (2), (3), or (4) of this section is met.

- (1) The process change does not meet the definition of a process change in § 63.115(e), or
 - (2) The vent stream flow rate is recalculated according to § 63.115(e) and the recalculated value is less than 0.005 standard cubic meter per minute, or
 - (3) The organic HAP concentration of the vent stream is recalculated according to § 63.115(e) and the recalculated value is less than 50 parts per million by volume, or
 - (4) Except as specified in § 63.113(a)(4), the TRE index value is recalculated according to § 63.115(e) and the recalculated value is greater than 4.0.
- (l) For process vents in ethylene oxide service subject to the requirements of § 63.124, owners and operators must keep the records specified in paragraphs (l)(1) and (2) of this section in addition to those records specified elsewhere in this section.
- (1) For process vents, include all uncontrolled, undiluted ethylene oxide concentration measurements, and the calculations used to determine the total uncontrolled ethylene oxide mass emission rate for the sum of all vent gas streams.
 - (2) If emissions are vented through a closed-vent system to a non-flare control device, then the owner or operator must keep records of all periods during which operating values are outside of the applicable operating limits specified in § 63.124(b)(4) through (6) when regulated material is being routed to the non-flare control device. The record must specify the identification of the control device, the operating parameter, the applicable limit, and the highest (for maximum operating limits) or lowest (for minimum operating limits) value recorded during the period.(m) For each maintenance vent opening subject to the requirements of § 63.113(k), owners and operators must keep the applicable records specified in paragraphs (m)(1) through (5) of this section.
- (1) Owners and operators must maintain standard site procedures used to deinventory equipment for safety purposes (e.g., hot work or vessel entry procedures) to document the procedures used to meet the requirements in § 63.113(k). The current copy of the procedures must be retained and available on-site at all times. Previous versions of the standard site procedures, as applicable, must be retained for 5 years.
 - (2) If complying with the requirements of § 63.113(k)(1)(i), and the concentration of the vapor at the time of the vessel opening exceeds 10 percent of its LEL, identification of the maintenance vent, the process units or equipment associated with the maintenance vent, the date of maintenance vent opening, and the concentration of the vapor at the time of the vessel opening.
 - (3) If complying with the requirements of § 63.113(k)(1)(ii), and either the vessel pressure at the time of the vessel opening exceeds 5 psig or the concentration of the vapor at the time of the active purging was initiated exceeds 10 percent of its LEL, identification of the maintenance vent, the process units or equipment associated with the maintenance vent, the date of maintenance vent opening, the pressure of the vessel or equipment at the time of discharge to the atmosphere and, if applicable, the concentration of the vapors in the equipment when active purging was initiated.
 - (4) If complying with the requirements of § 63.113(k)(1)(iii), records of the estimating procedures used to determine the total quantity of VOC in the equipment and the type and size limits of equipment that contain less than 50 pounds of VOC at the time of maintenance vent opening. For each maintenance vent opening that contains greater than 50 pounds of VOC for which the deinventory procedures specified in paragraph (m)(1) of this section are not followed or for which the equipment opened exceeds the type and size limits established in the records specified in this paragraph (m)(4),

records that identify the maintenance vent, the process units or equipment associated with the maintenance vent, the date of maintenance vent opening, and records used to estimate the total quantity of VOC in the equipment at the time the maintenance vent was opened to the atmosphere.

- (5) If complying with the requirements of § 63.113(k)(1)(iv), identification of the maintenance vent, the process units or equipment associated with the maintenance vent, records documenting actions taken to comply with other applicable alternatives and why utilization of this alternative was required, the date of maintenance vent opening, the equipment pressure and concentration of the vapors in the equipment at the time of discharge, an indication of whether active purging was performed and the pressure of the equipment during the installation or removal of the blind if active purging was used, the duration the maintenance vent was open during the blind installation or removal process, and records used to estimate the total quantity of VOC in the equipment at the time the maintenance vent was opened to the atmosphere for each applicable maintenance vent opening.

- (n) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), paragraphs (d) and (e) of this section no longer apply. Instead, each owner or operator demonstrating that a process vent is a Group 2 process vent based on total organic HAP mass flow rate less than 1.0 pound per hour under § 63.113(l), shall keep up-to-date, readily accessible records of:

- (1) Any process changes that increase the vent stream mass flow rate, and
- (2) Any recalculation or measurement of the mass flow rate pursuant to § 63.115(g).

[89 FR 43185, May 16, 2024]

§ 63.119 Storage vessel provisions—reference control technology.

- (a) For each storage vessel to which this subpart applies, the owner or operator shall comply with the requirements of paragraphs (a)(1) through (6) of this section according to the schedule provisions of § 63.100. For each pressure vessel to which this subpart applies, the owner or operator must comply with the requirements of paragraph (a)(7) of this section.
 - (1) For each Group 1 storage vessel (as defined in table 5 of this subpart for existing sources and table 6 of the subpart for new sources) storing a liquid for which the maximum true vapor pressure of the total organic hazardous air pollutants in the liquid is less than 76.6 kilopascals, the owner or operator shall reduce hazardous air pollutants emissions to the atmosphere either by operating and maintaining a fixed roof and internal floating roof, an external floating roof, an external floating roof converted to an internal floating roof, a closed vent system and control device, routing the emissions to a process or a fuel gas system, or vapor balancing in accordance with the requirements in paragraph (b), (c), (d), (e), (f), or (g) of this section, or equivalent as provided in § 63.121 of this subpart.
 - (2) For each Group 1 storage vessel (as defined in table 5 of this subpart for existing sources and table 6 of this subpart for new sources) storing a liquid for which the maximum true vapor pressure of the total organic hazardous air pollutants in the liquid is greater than or equal to 76.6 kilopascals, the owner or operator shall operate and maintain a closed vent system and control device meeting the requirements specified in paragraph (e) of this section, route the emissions to a process or a fuel gas system as specified in paragraph (f) of this section, vapor balance as specified in paragraph (g) of this section, or equivalent as provided in § 63.121 of this subpart.

- (3) For each Group 2 storage vessel that is not part of an emissions average as described in § 63.150 of this subpart, the owner or operator shall comply with the recordkeeping requirement in § 63.123(a) of this subpart and is not required to comply with any other provisions in §§ 63.119 through 63.123 of this subpart.
- (4) For each Group 2 storage vessel that is part of an emissions average, the owner or operator shall comply with the emissions averaging provisions in § 63.150 of this subpart.
- (5) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(11), if the storage vessel (of any capacity and vapor pressure) stores liquid containing ethylene oxide such that the storage vessel is considered to be in ethylene oxide service, as defined in § 63.101, then the owner or operator must comply with the requirements of paragraph (a)(5)(i) or (ii) of this section in addition to all other applicable requirements specified elsewhere in this section.
 - (i) Reduce emissions of ethylene oxide by venting emissions through a closed vent system to a flare; or
 - (ii) Reduce emissions of ethylene oxide by venting emissions through a closed vent system to a control device that reduces ethylene oxide by greater than or equal to 99.9 percent by weight, or to a concentration less than 1 ppmv for each storage vessel vent.
- (6) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), for each storage vessel subject to paragraph (a)(1), (2), or (5) of this section, the owner or operator must comply with paragraphs (a)(6)(i) through (iv) of this section during storage vessel shutdown operations (i.e., emptying and degassing of a storage vessel) until the vapor space concentration in the storage vessel is less than 10 percent of the LEL, or the organic HAP concentration in the vapor space is equal to or less than of 5,000 ppmv as methane. The owner or operator must determine the concentration using process instrumentation or portable measurement devices and follow procedures for calibration and maintenance according to manufacturer's specifications. The owner or operator must determine the organic HAP concentration using Method 18 or Method 25A of appendix A to part 60 of this chapter; or alternatively, any other method or data that has been validated according to the protocol in Method 301 of appendix A of this part.
 - (i) Remove liquids from the storage vessel as much as practicable.
 - (ii) Comply with one of the following:
 - (A) Reduce emissions of total organic HAP by venting emissions through a closed vent system to a flare.
 - (B) Reduce emissions of total organic HAP by 95 weight-percent by venting emissions through a closed vent system to any combination of non-flare control devices.
 - (C) Reduce emissions of total organic HAP by routing emissions to a fuel gas system or process and meet the requirements specified in paragraph (f) of this section.
 - (iii) Maintain records necessary to demonstrate compliance with the requirements in § 63.102(f) of subpart F of this part including, if appropriate, records of existing standard site procedures used to empty and degas (deinventory) equipment for safety purposes.
 - (iv) For floating roof storage vessels, the storage vessel may be opened to set up equipment (e.g., making connections to a temporary control device) for the shutdown operations but must not be actively degassed during this time period.

- (7) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), for each pressure vessel as defined in § 63.101 that is considered a Group 1 storage vessel (as defined in table 5 of this subpart for existing sources and table 6 of the subpart for new sources), you must operate and maintain the pressure vessel, as specified in paragraphs (a)(7)(i) through (v) of this section.
- (i) The pressure vessel must be designed to operate with no detectable emissions at all times.
 - (ii) Except for connectors in ethylene oxide service, gas/vapor or light liquid valves in ethylene oxide service, light liquid pumps in ethylene oxide service, and PRDs in ethylene oxide service, and except for equipment that meet the criteria specified in § 63.168(h) and (i) (for valves in gas/vapor service and in light liquid service) and in § 63.174(f) and (h) (for connectors in gas/vapor service and in light liquid service), you must monitor each point on the pressure vessel through which total organic hazardous air pollutants could potentially be emitted by conducting initial and annual performance tests using Method 21 of appendix A-7 to part 60 of this chapter
 - (iii) Each instrument reading greater than 500 ppmv is a violation.
 - (iv) Estimate the flow rate and total regulated material emissions from the defect. Assume the pressure vessel has been emitting for half of the time since the last performance test, unless other information supports a different assumption.
 - (v) Whenever total organic hazardous air pollutants are in the pressure vessel, you must operate the pressure vessel as a closed system that vents through a closed vent system to a control device as specified in paragraph (e) of this section, as applicable. For purposes of compliance with this paragraph, a release of total organic hazardous air pollutants through a pressure vessel's pressure relief device to the atmosphere is a violation.
- (b) The owner or operator who elects to use a fixed roof and an internal floating roof, as defined in § 63.111, to comply with the requirements of paragraph (a)(1) of this section shall comply with the requirements specified in paragraphs (b)(1) through (7) of this section.

Note: The intent of paragraphs (b)(1) and (2) of this section is to avoid having a vapor space between the floating roof and the stored liquid for extended periods. Storage vessels may be emptied for purposes such as routine storage vessel maintenance, inspections, petroleum liquid deliveries, or transfer operations. Storage vessels where liquid is left on walls, as bottom clingage, or in pools due to floor irregularity are considered completely empty.

- (1) The internal floating roof shall be floating on the liquid surface at all times except when the floating roof must be supported by the leg supports during the periods specified in paragraphs (b)(1)(i) through (b)(1)(iii) of this section.
- (i) During the initial fill.
 - (ii) After the vessel has been completely emptied and degassed.
 - (iii) When the vessel is completely emptied before being subsequently refilled.
- (2) When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as soon as practical.

- (3) Each internal floating roof shall be equipped with a closure device between the wall of the storage vessel and the roof edge. Except as provided in paragraph (b)(3)(iv) of this section, the closure device shall consist of one of the devices listed in paragraph (b)(3)(i), (b)(3)(ii), or (b)(3)(iii) of this section.
 - (i) A liquid-mounted seal as defined in § 63.111 of this subpart.
 - (ii) A metallic shoe seal as defined in § 63.111 of this subpart.
 - (iii) Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous seals.
 - (iv) If the internal floating roof is equipped with a vapor-mounted seal as of December 31, 1992, the requirement for one of the seal options specified in paragraphs (b)(3)(i), (b)(3)(ii), and (b)(3)(iii) of this section does not apply until the earlier of the dates specified in paragraphs (b)(3)(iv)(A) and (b)(3)(iv)(B) of this section.
 - (A) The next time the storage vessel is emptied and degassed.
 - (B) No later than 10 years after April 22, 1994.
- (4) Automatic bleeder vents are to be closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the roof leg supports.
- (5) Except as provided in paragraph (b)(5)(viii) of this section, each internal floating roof shall meet the specifications listed in paragraphs (b)(5)(i) through (vii) of this section, and (b)(5)(ix) through (xii) of this section.
 - (i) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and rim space vents is to provide a projection below the liquid surface.
 - (ii) Except as specified in paragraph (b)(5)(ix) of this section, each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains shall be equipped with a cover or lid. The cover or lid shall be equipped with a gasket.
 - (iii) Each penetration of the internal floating roof for the purposes of sampling shall be a sample well. Each sample well shall have a slit fabric cover that covers at least 90 percent of the opening.
 - (iv) Each automatic bleeder vent shall be gasketed.
 - (v) Each rim space vent shall be gasketed.
 - (vi) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.
 - (vii) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.
 - (viii) If the internal floating roof does not meet any one of the specifications listed in paragraphs (b)(5)(i) through (b)(5)(vii) of this section as of December 31, 1992, the requirement for meeting those specifications does not apply until the earlier of the dates specified in paragraphs (b)(5)(viii)(A) and (b)(5)(viii)(B) of this section.

- (A) The next time the storage vessel is emptied and degassed.
- (B) No later than 10 years after April 22, 1994.
- (ix) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), paragraph (b)(5)(i) of this section no longer applies. Instead, each opening in the internal floating roof except those for automatic bleeder vents (vacuum breaker vents), rim space vents, leg sleeves, and deck drains shall be equipped with a deck cover. The deck cover shall be equipped with a gasket between the cover and the deck.
- (x) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), each opening for an unslotted guidepole shall be equipped with a pole wiper, and each unslotted guidepole shall be equipped with a gasketed cap on the top of the guidepole.
 - (A) A pole wiper and a pole float. The wiper or seal of the pole float shall be at or above the height of the pole wiper.
 - (B) A pole wiper and a pole sleeve.
- (xii) Each unslotted guidepole cap shall be closed at all times except when gauging the liquid level or taking liquid samples.
- (6) Each cover or lid on any opening in the internal floating roof shall be closed (i.e., no visible gaps), except when the cover or lid must be open for access. Covers on each access hatch and each gauge float well shall be bolted or fastened so as to be air-tight when they are closed. Rim space vents are to be set to open only when the internal floating roof is not floating or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting.
- (7) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), owners and operators that use a continuous sweep, purge, or inert blanket between the internal floating roof and fixed roof that causes a pressure/vacuum vent to remain continuously open to the atmosphere where uncontrolled emissions are greater than or equal to 1.0 pound per hour of total organic HAP must route emissions through a closed vent system and control device and comply with paragraph (e) of this section.
- (c) The owner or operator who elects to use an external floating roof, as defined in § 63.111 of this subpart, to comply with the requirements of paragraph (a)(1) of this section shall comply with the requirements specified in paragraphs (c)(1) through (c)(4) of this section.
 - (1) Each external floating roof shall be equipped with a closure device between the wall of the storage vessel and the roof edge.
 - (i) Except as provided in paragraph (c)(1)(iv) of this section, the closure device is to consist of two seals, one above the other. The lower seal is referred to as the primary seal and the upper seal is referred to as the secondary seal.
 - (ii) Except as provided in paragraph (c)(1)(v) of this section, the primary seal shall be either a metallic shoe seal or a liquid-mounted seal.

- (iii) Except during the inspections required by § 63.120(b) of this subpart, both the primary seal and the secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion.
- (iv) If the external floating roof is equipped with a liquid-mounted or metallic shoe primary seal as of December 31, 1992, the requirement for a secondary seal in paragraph (c)(1)(i) of this section does not apply until the earlier of the dates specified in paragraphs (c)(1)(iv)(A) and (c)(1)(iv)(B) of this section.
 - (A) The next time the storage vessel is emptied and degassed.
 - (B) No later than 10 years after April 22, 1994.
- (v) If the external floating roof is equipped with a vapor-mounted primary seal and a secondary seal as of December 31, 1992, the requirement for a liquid-mounted or metallic shoe primary seal in paragraph (c)(1)(ii) of this section does not apply until the earlier of the dates specified in paragraphs (c)(1)(v)(A) and (c)(1)(v)(B) of this section.
 - (A) The next time the storage vessel is emptied and degassed.
 - (B) No later than 10 years after April 22, 1994.
- (2) Each external floating roof shall meet the specifications listed in paragraphs (c)(2)(i) through (c)(2)(xii) of this section.
 - (i) Except for automatic bleeder vents (vacuum breaker vents) and rim space vents, each opening in the noncontact external floating roof shall provide a projection below the liquid surface except as provided in paragraph (c)(2)(xii) of this section.
 - (ii) Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof is to be equipped with a gasketed cover, seal or lid which is to be maintained in a closed position (i.e., no visible gap) at all times except when the cover or lid must be open for access. Covers on each access hatch and each gauge float well shall be bolted or fastened so as to be air-tight when they are closed.
 - (iii) Automatic bleeder vents are to be closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the roof leg supports.
 - (iv) Rim space vents are to be set to open only when the roof is being floated off the roof leg supports or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting.
 - (v) Automatic bleeder vents and rim space vents are to be gasketed.
 - (vi) Each roof drain that empties into the stored liquid is to be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening.
 - (vii) Each unslotted guide pole well shall have a gasketed sliding cover or a flexible fabric sleeve seal.
 - (viii) Each unslotted guide pole shall have on the end of the pole a gasketed cap which is closed at all times except when gauging the liquid level or taking liquid samples.
 - (ix) Each slotted guide pole well shall have a gasketed sliding cover or a flexible fabric sleeve seal.

- (x) Each slotted guide pole shall have a gasketed float or other device which closes off the liquid surface from the atmosphere.
- (xi) Each gauge hatch/sample well shall have a gasketed cover which is closed at all times except when the hatch or well must be open for access.
- (xii) If each opening in a noncontact external floating roof except for automatic bleeder vents (vacuum breaker vents) and rim space vents does not provide a projection below the liquid surface as of December 31, 1992, the requirement for providing these projections below the liquid surface does not apply until the earlier of the dates specified in paragraphs (c)(2)(xii)(A) and (c)(2)(xii)(B) of this section.
 - (A) The next time the storage vessel is emptied and degassed.
 - (B) No later than 10 years after April 22, 1994.

Note: The intent of paragraphs (c)(3) and (c)(4) of this section is to avoid having a vapor space between the floating roof and the stored liquid for extended periods. Storage vessels may be emptied for purposes such as routine storage vessel maintenance, inspections, petroleum liquid deliveries, or transfer operations. Storage vessels where liquid is left on walls, as bottom clingage, or in pools due to floor irregularity are considered completely empty.

- (3) The external floating roof shall be floating on the liquid surface at all times except when the floating roof must be supported by the leg supports during the periods specified in paragraphs (c)(3)(i) through (c)(3)(iii) of this section.
 - (i) During the initial fill.
 - (ii) After the vessel has been completely emptied and degassed.
 - (iii) When the vessel is completely emptied before being subsequently refilled.
- (4) When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as soon as practical.
- (d) The owner or operator who elects to use an external floating roof converted to an internal floating roof (i.e., fixed roof installed above external floating roof) to comply with paragraph (a)(1) of this section shall comply with paragraphs (d)(1) and (d)(2) of this section.
 - (1) Comply with the requirements for internal floating roof vessels specified in paragraphs (b)(1), (2), and (3) of this section; and
 - (2) Comply with the requirements for deck fittings that are specified for external floating roof vessels in paragraphs (c)(2)(i) through (c)(2)(xii) of this section.
- (e) The owner or operator who elects to use a closed vent system and control device, as defined in § 63.111, to comply with the requirements of paragraph (a)(1) or (2) of this section, or the owner or operator who meets the requirements specified in paragraph (b)(7) of this section, shall comply with the requirements specified in paragraphs (e)(1) through (7) of this section.

- (1) Except as provided in paragraph (e)(2) of this section, the control device shall be designed and operated to reduce inlet emissions of total organic HAP by 95 percent or greater. Except as specified in § 63.108(a), if a flare is used as the control device, it shall meet the specifications described in the general control device requirements of § 63.11(b).
- (2) If the owner or operator can demonstrate that a control device installed on a storage vessel on or before December 31, 1992 is designed to reduce inlet emissions of total organic HAP by greater than or equal to 90 percent but less than 95 percent, then the control device is required to be operated to reduce inlet emissions of total organic HAP by 90 percent or greater.
- (3) Except as specified in (e)(7) of this section, periods of planned routine maintenance of the control device, during which the control device does not meet the specifications of paragraph (e)(1) or (2) of this section, as applicable, shall not exceed 240 hours per year.
- (4) Except as specified in (e)(7) of this section, the specifications and requirements in paragraphs (e)(1) and (2) of this section for control devices do not apply during periods of planned routine maintenance.
- (5) Except as specified in (e)(7) of this section, the specifications and requirements in paragraphs (e)(1) and (2) of this section for control devices do not apply during a control system malfunction.
- (6) An owner or operator may use a combination of control devices to achieve the required reduction of total organic hazardous air pollutants specified in paragraph (e)(1) of this section. An owner or operator may use a combination of control devices installed on a storage vessel on or before December 31, 1992 to achieve the required reduction of total organic hazardous air pollutants specified in paragraph (e)(2) of this section.
- (7) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), paragraphs (e)(3) through (5) of this section no longer apply. Instead, whenever gases or vapors containing total organic HAP are routed from a storage vessel through a closed vent system connected to a control device used to comply with the requirements of paragraph (e)(1) or (2) of this section, the control device must be operating, except the control device may only be bypassed for the purpose of performing planned routine maintenance of the control device. When the control device is bypassed, the owner or operator must comply with paragraphs (e)(7)(i) through (iii) of this section.
 - (i) The control device may only be bypassed when the planned routine maintenance cannot be performed during periods that storage vessel emissions are vented to the control device.
 - (ii) On an annual basis, the total time that the closed-vent system or control device is bypassed to perform planned routine maintenance shall not exceed 240 hours per each calendar year.
 - (iii) The level of material in the storage vessel shall not be increased during periods that the closed vent system or control device is bypassed to perform planned routine maintenance.
- (f) The owner or operator who elects to route emissions to a fuel gas system or to a process, as defined in § 63.111 of this subpart, to comply with the requirements of paragraph (a)(1) or (a)(2) of this section shall comply with the requirements in paragraphs (f)(1) through (f)(3) of this section, as applicable.

- (1) If emissions are routed to a fuel gas system, there is no requirement to conduct a performance test or design evaluation. If emissions are routed to a process, the organic hazardous air pollutants in the emissions shall predominantly meet one of, or a combination of, the ends specified in paragraphs (f)(1)(i) through (f)(1)(iv) of this section. The owner or operator shall comply with the compliance demonstration requirements in § 63.120(f).
 - (i) Recycled and/or consumed in the same manner as a material that fulfills the same function in that process;
 - (ii) Transformed by chemical reaction into materials that are not organic hazardous air pollutants;
 - (iii) Incorporated into a product; and/or
 - (iv) Recovered.
- (2) If the emissions are conveyed by a system other than hard-piping, any conveyance system operated under positive pressure shall be subject to the requirements of § 63.148 of this subpart.
- (3) The fuel gas system or process shall be operating at all times when organic hazardous air pollutants emissions are routed to it except as provided in § 63.102(a)(1) and in paragraphs (f)(3)(i) through (iv) of this section. Whenever the owner or operator bypasses the fuel gas system or process, the owner or operator shall comply with the recordkeeping requirement in § 63.123(h). Bypassing is permitted if the owner or operator complies with one or more of the conditions specified in paragraphs (f)(3)(i) through (iv) of this section.
 - (i) The liquid level in the storage vessel is not increased;
 - (ii) The emissions are routed through a closed vent system to a control device complying with § 63.119(e); or
 - (iii) Except as specified in paragraph (f)(3)(iv) of this section, the total aggregate amount of time during which the emissions bypass the fuel gas system or process during the calendar year without being routed to a control device, for all reasons (except start-ups/shutdowns/malfuncions or product changeovers of flexible operation units and periods when the storage vessel has been emptied and degassed), does not exceed 240 hours.
 - (iv) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), paragraph (f)(3)(iii) of this section no longer applies. Instead, if you elect to route emissions from storage vessels to a fuel gas system or to a process to comply with the requirements of paragraph (a)(1), (2), or (5) of this section, the fuel gas system or process may only be bypassed when the planned routine maintenance cannot be performed during periods that storage vessel emissions are vented to the fuel gas system or process, and the total aggregate amount of time during which the breathing loss emissions bypass the fuel gas system or process during the calendar year without being routed to a control device must not exceed 240 hours. The level of material in the storage vessel shall not be increased during periods that the fuel gas system or process is bypassed to perform routine maintenance.
- (g) The owner or operator who elects to vapor balance to comply with the requirements of paragraphs (a)(1) and (2) of this section shall comply with paragraphs (g)(1) through (7) of this section and the recordkeeping requirements of § 63.123(i).

- (1) The vapor balancing system must be designed and operated to route organic HAP vapors displaced from loading of the storage vessel to the railcar, tank truck, or barge from which the storage vessel is filled.
- (2) Tank trucks and railcars must have a current certification in accordance with the U.S. Department of Transportation pressure test requirements of 49 CFR part 180 for tank trucks and 49 CFR 173.31 for railcars. Barges must have a current certification of vapor-tightness through testing in accordance with 40 CFR 63.565.
- (3) Hazardous air pollutants must only be unloaded from tank trucks or railcars when vapor collection systems are connected to the storage vessel's vapor collection system.
- (4) No pressure relief device on the storage vessel, or on the railcar or tank truck, shall open during loading or as a result of diurnal temperature changes (breathing losses).
- (5) Pressure relief devices must be set to no less than 2.5 psig at all times to prevent breathing losses. Pressure relief devices may be set at values less than 2.5 psig if the owner or operator provides rationale in the notification of compliance status report explaining why the alternative value is sufficient to prevent breathing losses at all times. The owner or operator shall comply with paragraphs (g)(5)(i) through (iii) of this section for each pressure relief valve.
 - (i) The pressure relief valve shall be monitored quarterly using the method described in § 63.180(b).
 - (ii) An instrument reading of 500 ppmv or greater defines a leak.
 - (iii) When a leak is detected, it shall be repaired as soon as practicable, but no later than 5 days after it is detected, and the owner or operator shall comply with the recordkeeping requirements of § 63.181(d)(1) through (4).
- (6) Railcars, tank trucks, or barges that deliver HAP to a storage vessel must be reloaded or cleaned at a facility that utilizes the control techniques specified in paragraph (g)(6)(i) or (ii) of this section.
 - (i) The railcar, tank truck, or barge must be connected to a closed vent system with a control device that reduces inlet emissions of HAP by 95 percent by weight or greater.
 - (ii) A vapor balancing system designed and operated to collect organic HAP vapor displaced from the tank truck, railcar, or barge during reloading must be used to route the collected HAP vapor to the storage vessel from which the liquid being transferred originated.
- (7) The owner or operator of the facility where the railcar, tank truck, or barge is reloaded or cleaned must comply with paragraphs (g)(7)(i) through (iii) of this section.
 - (i) Submit to the owner or operator of the storage vessel and to the Administrator a written certification that the reloading or cleaning facility will meet the requirements of this section. The certifying entity may revoke the written certification by sending a written statement to the owner or operator of the storage vessel giving at least 90 days notice that the certifying entity is rescinding acceptance of responsibility for compliance with the requirements of this paragraph (g)(7).
 - (ii) If complying with paragraph (g)(6)(i) of this section, comply with the requirements for closed vent system and control device specified in §§ 63.119 through 63.123. The notification and reporting requirements in § 63.122 do not apply to the owner or operator of the offsite cleaning or reloading facility.

- (iii) If complying with paragraph (g)(6)(ii) of this section, keep the records specified in § 63.123(i)(3).
- (iv) After the compliance dates specified in § 63.100(k) at an offsite reloading or cleaning facility subject to paragraph (g) of this section, compliance with the monitoring, recordkeeping, and reporting provisions of any other subpart of this part 63 constitutes compliance with the monitoring, recordkeeping, and reporting provisions of paragraph (g)(7)(ii) or (iii) of this section. You must identify in your Notification of Compliance Status report required by § 63.152(b), the subpart to the part 63 with which the owner or operator of the reloading or cleaning facility complies.

[59 FR 19468, Apr. 22, 1994, as amended at 62 FR 2747, Jan. 17, 1997; 69 FR 76863, Dec. 23, 2004; 71 FR 76614, Dec. 21, 2006; 89 FR 43188, May 16, 2024]

§ 63.120 Storage vessel provisions—procedures to determine compliance.

- (a) To demonstrate compliance with § 63.119(b) of this subpart (storage vessel equipped with a fixed roof and internal floating roof) or with § 63.119(d) of this subpart (storage vessel equipped with an external floating roof converted to an internal floating roof), the owner or operator shall comply with the requirements in paragraphs (a)(1) through (a)(7) of this section.
 - (1) The owner or operator shall visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), according to the schedule specified in paragraphs (a)(2) and (a)(3) of this section.
 - (2) For vessels equipped with a single-seal system, the owner or operator shall perform the inspections specified in paragraphs (a)(2)(i) and (a)(2)(ii) of this section.
 - (i) Visually inspect the internal floating roof and the seal through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill, or at least once every 12 months after the compliance date specified in § 63.100 of subpart F of this part.
 - (ii) Visually inspect the internal floating roof, the seal, gaskets, slotted membranes, and sleeve seals (if any) each time the storage vessel is emptied and degassed, and at least once every 10 years after the compliance date specified in § 63.100 of subpart F of this part.
 - (3) For vessels equipped with a double-seal system as specified in § 63.119(b)(3)(iii) of this subpart, the owner or operator shall perform either the inspection required in paragraph (a)(3)(i) of this section or the inspections required in both paragraphs (a)(3)(ii) and (a)(3)(iii) of this section.
 - (i) The owner or operator shall visually inspect the internal floating roof, the primary seal, the secondary seal, gaskets, slotted membranes, and sleeve seals (if any) each time the storage vessel is emptied and degassed and at least once every 5 years after the compliance date specified in § 63.100 of subpart F of this part; or
 - (ii) The owner or operator shall visually inspect the internal floating roof and the secondary seal through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill, or at least once every 12 months after the compliance date specified in § 63.100 of subpart F of this part, and

- (iii) Visually inspect the internal floating roof, the primary seal, the secondary seal, gaskets, slotted membranes, and sleeve seals (if any) each time the vessel is emptied and degassed and at least once every 10 years after the compliance date specified in § 63.100 of subpart F of this part.
- (4) If during the inspections required by paragraph (a)(2)(i) or (a)(3)(ii) of this section, the internal floating roof is not resting on the surface of the liquid inside the storage vessel and is not resting on the leg supports; or there is liquid on the floating roof; or the seal is detached; or there are holes or tears in the seal fabric; or there are visible gaps between the seal and the wall of the storage vessel, the owner or operator shall repair the items or empty and remove the storage vessel from service within 45 calendar days. If a failure that is detected during inspections required by paragraph (a)(2)(i) or (a)(3)(ii) of this section cannot be repaired within 45 calendar days and if the vessel cannot be emptied within 45 calendar days, the owner or operator may utilize up to 2 extensions of up to 30 additional calendar days each. Documentation of a decision to utilize an extension shall include a description of the failure, shall document that alternate storage capacity is unavailable, and shall specify a schedule of actions that will ensure that the control equipment will be repaired or the vessel will be emptied as soon as practical.
- (5) Except as provided in paragraph (a)(6) of this section, for all the inspections required by paragraphs (a)(2)(ii), (a)(3)(i), and (a)(3)(iii) of this section, the owner or operator shall notify the Administrator in writing at least 30 calendar days prior to the refilling of each storage vessel to afford the Administrator the opportunity to have an observer present.
- (6) If the inspection required by paragraph (a)(2)(ii), (a)(3)(i), or (a)(3)(iii) of this section is not planned and the owner or operator could not have known about the inspection 30 calendar days in advance of refilling the vessel, the owner or operator shall notify the Administrator at least 7 calendar days prior to the refilling of the storage vessel. Notification may be made by telephone and immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, the notification including the written documentation may be made in writing and sent so that it is received by the Administrator at least 7 calendar days prior to refilling.
- (7) If during the inspections required by paragraph (a)(2)(ii), (a)(3)(i), or (a)(3)(iii) of this section, the internal floating roof has defects; or the primary seal has holes, tears, or other openings in the seal or the seal fabric; or the secondary seal has holes, tears, or other openings in the seal or the seal fabric; or the gaskets no longer close off the liquid surface from the atmosphere; or the slotted membrane has more than 10 percent open area, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage vessel with organic HAP.
- (b) To demonstrate compliance with § 63.119(c) of this subpart (storage vessel equipped with an external floating roof), the owner or operator shall comply with the requirements specified in paragraphs (b)(1) through (b)(10) of this section.
 - (1) Except as provided in paragraph (b)(7) of this section, the owner or operator shall determine the gap areas and maximum gap widths between the primary seal and the wall of the storage vessel, and the secondary seal and the wall of the storage vessel according to the frequency specified in paragraphs (b)(1)(i) through (b)(1)(iii) of this section.

- (i) For an external floating roof vessel equipped with primary and secondary seals, measurements of gaps between the vessel wall and the primary seal shall be performed during the hydrostatic testing of the vessel or by the compliance date specified in § 63.100 of subpart F of this part, whichever occurs last, and at least once every 5 years thereafter.
 - (ii) For an external floating roof vessel equipped with a liquid-mounted or metallic shoe primary seal and without a secondary seal as provided for in § 63.119(c)(1)(iv) of this subpart, measurements of gaps between the vessel wall and the primary seal shall be performed by the compliance date specified in § 63.100 of subpart F of this part and at least once per year thereafter, until a secondary seal is installed. When a secondary seal is installed above the primary seal, measurements of gaps between the vessel wall and both the primary and secondary seals shall be performed within 90 calendar days of installation of the secondary seal, and according to the frequency specified in paragraphs (b)(1)(i) and (b)(1)(iii) of this section thereafter.
 - (iii) For an external floating roof vessel equipped with primary and secondary seals, measurements of gaps between the vessel wall and the secondary seal shall be performed by the compliance date specified in § 63.100 of subpart F of this part and at least once per year thereafter.
 - (iv) If any storage vessel ceases to store organic HAP for a period of 1 year or more, or if the maximum true vapor pressure of the total organic HAP's in the stored liquid falls below the values defining Group 1 storage vessels specified in table 5 or table 6 of this subpart for a period of 1 year or more, measurements of gaps between the vessel wall and the primary seal, and gaps between the vessel wall and the secondary seal shall be performed within 90 calendar days of the vessel being refilled with organic HAP.
- (2) Except as provided in paragraph (b)(7) of this section, the owner or operator shall determine gap widths and gap areas in the primary and secondary seals (seal gaps) individually by the procedures described in paragraphs (b)(2)(i) through (b)(2)(iii) of this section.
- (i) Seal gaps, if any, shall be measured at one or more floating roof levels when the roof is not resting on the roof leg supports.
 - (ii) Seal gaps, if any, shall be measured around the entire circumference of the vessel in each place where an 0.32 centimeter ($\frac{1}{8}$ inch) diameter uniform probe passes freely (without forcing or binding against the seal) between the seal and the wall of the storage vessel. The circumferential distance of each such location shall also be measured.
 - (iii) The total surface area of each gap described in paragraph (b)(2)(ii) of this section shall be determined by using probes of various widths to measure accurately the actual distance from the vessel wall to the seal and multiplying each such width by its respective circumferential distance.
- (3) The owner or operator shall add the gap surface area of each gap location for the primary seal and divide the sum by the nominal diameter of the vessel. The accumulated area of gaps between the vessel wall and the primary seal shall not exceed 212 square centimeters per meter of vessel diameter and the width of any portion of any gap shall not exceed 3.81 centimeters.
- (4) The owner or operator shall add the gap surface area of each gap location for the secondary seal and divide the sum by the nominal diameter of the vessel. The accumulated area of gaps between the vessel wall and the secondary seal shall not exceed 21.2 square centimeters per meter of vessel

diameter and the width of any portion of any gap shall not exceed 1.27 centimeters. These seal gap requirements may be exceeded during the measurement of primary seal gaps as required by paragraph (b)(1)(i) and (b)(1)(ii) of this section.

- (5) The primary seal shall meet the additional requirements specified in paragraphs (b)(5)(i) and (b)(5)(ii) of this section.
 - (i) Where a metallic shoe seal is in use, one end of the metallic shoe shall extend into the stored liquid and the other end shall extend a minimum vertical distance of 61 centimeters above the stored liquid surface.
 - (ii) There shall be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope.
- (6) The secondary seal shall meet the additional requirements specified in paragraphs (b)(6)(i) and (b)(6)(ii) of this section.
 - (i) The secondary seal shall be installed above the primary seal so that it completely covers the space between the roof edge and the vessel wall except as provided in paragraph (b)(4) of this section.
 - (ii) There shall be no holes, tears, or other openings in the seal or seal fabric.
- (7) If the owner or operator determines that it is unsafe to perform the seal gap measurements required in paragraphs (b)(1) and (b)(2) of this section or to inspect the vessel to determine compliance with paragraphs (b)(5) and (b)(6) of this section because the floating roof appears to be structurally unsound and poses an imminent or potential danger to inspecting personnel, the owner or operator shall comply with the requirements in either paragraph (b)(7)(i) or (b)(7)(ii) of this section.
 - (i) The owner or operator shall measure the seal gaps or inspect the storage vessel no later than 30 calendar days after the determination that the roof is unsafe, or
 - (ii) The owner or operator shall empty and remove the storage vessel from service no later than 45 calendar days after determining that the roof is unsafe. If the vessel cannot be emptied within 45 calendar days, the owner or operator may utilize up to 2 extensions of up to 30 additional calendar days each. Documentation of a decision to utilize an extension shall include an explanation of why it was unsafe to perform the inspection or seal gap measurement, shall document that alternate storage capacity is unavailable, and shall specify a schedule of actions that will ensure that the vessel will be emptied as soon as practical.
- (8) The owner or operator shall repair conditions that do not meet requirements listed in paragraphs (b)(3), (b)(4), (b)(5), and (b)(6) of this section (i.e., failures) no later than 45 calendar days after identification, or shall empty and remove the storage vessel from service no later than 45 calendar days after identification. If during seal gap measurements required in paragraph (b)(1) and (b)(2) of this section or during inspections necessary to determine compliance with paragraphs (b)(5) and (b)(6) of this section a failure is detected that cannot be repaired within 45 calendar days and if the vessel cannot be emptied within 45 calendar days, the owner or operator may utilize up to 2 extensions of up to 30 additional calendar days each. Documentation of a decision to utilize an extension shall include a description of the failure, shall document that alternate storage capacity is unavailable, and shall specify a schedule of actions that will ensure that the control equipment will be repaired or the vessel will be emptied as soon as practical.

- (9) The owner or operator shall notify the Administrator in writing at least 30 calendar days in advance of any gap measurements required by paragraph (b)(1) or (2) of this section to afford the Administrator the opportunity to have an observer present.
- (10) The owner or operator shall visually inspect the external floating roof, the primary seal, secondary seal, and fittings each time the vessel is emptied and degassed.
 - (i) If the external floating roof has defects; the primary seal has holes, tears, or other openings in the seal or the seal fabric; or the secondary seal has holes, tears, or other openings in the seal or the seal fabric; or the gaskets no longer close off the liquid surface from the atmosphere; or the slotted membrane has more than 10 percent open area, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before filling or refilling the storage vessel with organic HAP.
 - (ii) Except as provided in paragraph (b)(10)(iii) of this section, for all the inspections required by paragraph (b)(10) of this section, the owner or operator shall notify the Administrator in writing at least 30 calendar days prior to filling or refilling of each storage vessel with organic HAP to afford the Administrator the opportunity to inspect the storage vessel prior to refilling.
 - (iii) If the inspection required by paragraph (b)(10) of this section is not planned and the owner or operator could not have known about the inspection 30 calendar days in advance of refilling the vessel with organic HAP, the owner or operator shall notify the Administrator at least 7 calendar days prior to refilling of the storage vessel. Notification may be made by telephone and immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent so that it is received by the Administrator at least 7 calendar days prior to the refilling.
- (c) To demonstrate compliance with § 63.119(d) of this subpart (storage vessel equipped with an external floating roof converted to an internal floating roof), the owner or operator shall comply with the requirements of paragraph (a) of this section.
- (d) To demonstrate compliance with § 63.119(e) (storage vessel equipped with a closed vent system and control device) using a control device other than a flare, the owner or operator shall comply with the requirements in paragraphs (d)(1) through (7) of this section, except as provided in paragraphs (d)(8) and (9) of this section.
 - (1) Except as provided in paragraph (d)(1)(iii) of this section, the owner or operator shall either prepare a design evaluation, which includes the information specified in paragraph (d)(1)(i) of this section or submit the results of a performance test as described in paragraph (d)(1)(ii) of this section.
 - (i) The design evaluation shall include documentation demonstrating that the control device being used achieves the required control efficiency during reasonably expected maximum filling rate. This documentation is to include a description of the gas stream which enters the control device, including flow and organic HAP content under varying liquid level conditions, and the information specified in paragraphs (d)(1)(i)(A) through (E) of this section, as applicable.
 - (A) If the control device receives vapors, gases or liquids, other than fuels, from emission points other than storage vessels subject to this subpart, the efficiency demonstration is to include consideration of all vapors, gases, and liquids, other than fuels, received by the control device.

- (B) If an enclosed combustion device with a minimum residence time of 0.5 seconds and a minimum temperature of 760 °C is used to meet the emission reduction requirement specified in § 63.119 (e)(1) or (2), as applicable, documentation that those conditions exist is sufficient to meet the requirements of paragraph (d)(1)(i) of this section.
 - (C) Except as provided in paragraph (d)(1)(i)(B) of this section, for thermal incinerators, the design evaluation shall include the autoignition temperature of the organic HAP, the flow rate of the organic HAP emission stream, the combustion temperature, and the residence time at the combustion temperature.
 - (D) For carbon adsorbers, the design evaluation shall include the affinity of the organic HAP vapors for carbon, the amount of carbon in each bed, the number of beds, the humidity of the feed gases, the temperature of the feed gases, the flow rate of the organic HAP emission stream, the desorption schedule, the regeneration stream pressure or temperature, and the flow rate of the regeneration stream. For vacuum desorption, pressure drop shall be included.
 - (E) For condensers, the design evaluation shall include the final temperature of the organic HAP vapors, the type of condenser, and the design flow rate of the organic HAP emission stream.
- (ii) If the control device used to comply with § 63.119(e) is also used to comply with § 63.113(a)(2), § 63.126(b)(1), or § 63.139(c), the performance test required by § 63.116(c), § 63.128(a), or § 63.139(d)(1) is acceptable to demonstrate compliance with § 63.119(e). The owner or operator is not required to prepare a design evaluation for the control device as described in paragraph (d)(1)(i) of this section, if the performance tests meets the criteria specified in paragraphs (d)(1)(ii)(A) and (B) of this section.
- (A) The performance test demonstrates that the control device achieves greater than or equal to the required control efficiency specified in § 63.119 (e)(1) or (2), as applicable; and
 - (B) The performance test is submitted as part of the Notification of Compliance Status required by § 63.151(b). If the performance test report is submitted electronically through the EPA's CEDRI in accordance with § 63.152(h), the process unit(s) tested, the pollutant(s) tested, and the date that such performance test was conducted may be submitted in the notification of compliance status report in lieu of the performance test results. The performance test results must be submitted to CEDRI by the date the notification of compliance status report is submitted.
- (iii) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), if the owner or operator vents emissions through a closed vent system to an adsorber(s) that cannot be regenerated or a regenerative adsorber(s) that is regenerated offsite, then the owner or operator must install a system of two or more adsorber units in series and comply with the requirements specified in paragraphs (d)(1)(iii)(A) through (C) of this section.
- (A) Conduct an initial performance test or design evaluation of the adsorber and establish the breakthrough limit and adsorber bed life.
 - (B) Monitor the HAP or total organic compound (TOC) concentration through a sample port at the outlet of the first adsorber bed in series according to the schedule in paragraph (d)(1)(iii)(C)(2) of this section. The owner or operator must measure the concentration of

HAP or TOC using either a portable analyzer, in accordance with Method 21 of appendix A-7 to part 60 of this chapter using methane, propane, isobutylene, or the primary HAP being controlled as the calibration gas or Method 25A of appendix A-7 to part 60 using methane, propane, or the primary HAP being controlled as the calibration gas.

- (C) Comply with paragraph (d)(1)(iii)(C)(1) of this section and comply with the monitoring frequency according to paragraph (d)(1)(iii)(C)(2) of this section.
 - (1) The first adsorber in series must be replaced immediately when breakthrough, as defined in § 63.101, is detected between the first and second adsorber. The original second adsorber (or a fresh canister) will become the new first adsorber and a fresh adsorber will become the second adsorber. For purposes of this paragraph, “immediately” means within 8 hours of the detection of a breakthrough for adsorbers of 55 gallons or less, and within 24 hours of the detection of a breakthrough for adsorbers greater than 55 gallons. The owner or operator must monitor at the outlet of the first adsorber within 3 days of replacement to confirm it is performing properly.
 - (2) Based on the adsorber bed life established according to paragraph (d)(1)(iii)(A) of this section and the date the adsorbent was last replaced, conduct monitoring to detect breakthrough at least monthly if the adsorbent has more than 2 months of life remaining, at least weekly if the adsorbent has between 2 months and 2 weeks of life remaining, and at least daily if the adsorbent has 2 weeks or less of life remaining.
- (2) The owner or operator shall submit, as part of the Notification of Compliance Status required by § 63.151 (b), a monitoring plan containing the information specified in paragraph (d)(2)(i) of this section and in either paragraph (d)(2)(ii) or (iii) of this section. This paragraph does not apply if the owner or operator complies with paragraph (d)(1)(iii) of this section.
 - (i) A description of the parameter or parameters to be monitored to ensure that the control device is being properly operated and maintained, an explanation of the criteria used for selection of that parameter (or parameters), and the frequency with which monitoring will be performed (e.g., when the liquid level in the storage vessel is being raised); and either
 - (ii) The documentation specified in paragraph (d)(1)(i) of this section, if the owner or operator elects to prepare a design evaluation; or
 - (iii) The information specified in paragraph (d)(2)(iii) (A) and (B) of this section if the owner or operator elects to submit the results of a performance test.
 - (A) Identification of the storage vessel and control device for which the performance test will be submitted, and
 - (B) Identification of the emission point(s) that share the control device with the storage vessel and for which the performance test will be conducted.
- (3) The owner or operator shall submit, as part of the Notification of Compliance Status required by § 63.152(b) of this subpart, the information specified in paragraphs (d)(3)(i) and, if applicable, (d)(3)(ii) of this section. This paragraph does not apply if the owner or operator complies with paragraph (d)(1)(iii) of this section.
 - (i) The operating range for each monitoring parameter identified in the monitoring plan. The specified operating range shall represent the conditions for which the control device is being properly operated and maintained.

- (ii) Results of the performance test described in paragraph (d)(1)(ii) of this section. If the performance test report is submitted electronically through the EPA's CEDRI in accordance with § 63.152(h), the process unit(s) tested, the pollutant(s) tested, and the date that such performance test was conducted may be submitted in the notification of compliance status report in lieu of the performance test results. The performance test results must be submitted to CEDRI by the date the notification of compliance status report is submitted.
- (4) The owner or operator shall demonstrate compliance with the requirements of §§ 63.119(e)(3) and (7) (planned routine maintenance of a control device, during which the control device does not meet the specifications of § 63.119 (e)(1) or (2), as applicable, shall not exceed 240 hours per year) by including in each Periodic Report required by § 63.152(c) the information specified in § 63.122(g)(1).
- (5) The owner or operator shall monitor the parameters specified in the Notification of Compliance Status required in § 63.152(b) or in the operating permit and shall operate and maintain the control device such that the monitored parameters remain within the ranges specified in the Notification of Compliance Status.
- (6) Except as provided in paragraph (d)(7) of this section, each closed vent system shall be inspected as specified in § 63.148. The initial and annual inspections required by § 63.148(b) shall be done during filling of the storage vessel.
- (7) For any fixed roof tank and closed vent system that are operated and maintained under negative pressure, the owner or operator is not required to comply with the requirements specified in § 63.148.
- (8) A design evaluation or performance test is not required, if the owner or operator uses a combustion device meeting the criteria in paragraph (d)(8)(i), (ii), (iii), or (iv) of this section.
 - (i) A boiler or process heater with a design heat input capacity of 44 megawatts or greater.
 - (ii) A boiler or process heater burning hazardous waste for which the owner or operator:
 - (A) Has been issued a final permit under part 270 of this chapter and complies with the requirements of part 266, subpart H, of this chapter;
 - (B) Has certified compliance with the interim status requirements of part 266, subpart H, of this chapter;
 - (C) Has submitted a Notification of Compliance under § 63.1207(j) and complies with the requirements of subpart EEE of this part; or
 - (D) Complies with subpart EEE of this part and will submit a Notification of Compliance under § 63.1207(j) by the date the owner or operator would have been required to submit the initial performance test report for this subpart.
 - (iii) A hazardous waste incinerator for which the owner or operator:
 - (A) Has been issued a final permit under part 270 of this chapter and complies with the requirements of part 264, subpart O, of this chapter;
 - (B) Has certified compliance with the interim status requirements of part 265, subpart O, of this chapter;
 - (C) Has submitted a Notification of Compliance under § 63.1207(j) and complies with the requirements subpart EEE of this part; or

- (D) Complies with the requirements subpart EEE of this part and will submit a Notification of Compliance under § 63.1207(j) by the date the owner or operator would have been required to submit the initial performance test report for this subpart.
- (iv) A boiler or process heater into which the vent stream is introduced with the primary fuel.
- (9) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(11), paragraph (d)(1)(i) of this section no longer applies to storage vessels in ethylene oxide service, as defined in § 63.101.
- (e) Except as specified in paragraph (a) of § 63.108, to demonstrate compliance with § 63.119(e) (storage vessel equipped with a closed vent system and control device) using a flare, the owner or operator shall comply with the requirements in paragraphs (e)(1) through (6) of this section.
 - (1) The owner or operator shall perform the compliance determination specified in § 63.11(b) of subpart A of this part.
 - (2) The owner or operator shall submit, as part of the Notification of Compliance Status required by § 63.152(b) of this subpart, the information specified in paragraphs (e)(2)(i) through (e)(2)(iii) of this section.
 - (i) Flare design (i.e., steam-assisted, air-assisted, or non-assisted);
 - (ii) All visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the compliance determination required by paragraph (e)(1) of this section; and
 - (iii) All periods during the compliance determination when the pilot flame is absent.
 - (3) The owner or operator shall demonstrate compliance with the requirements of §§ 63.119(e)(3) and (7) (planned routine maintenance of a flare, during which the flare does not meet the specifications of § 63.119(e)(1), shall not exceed 240 hours per year) by including in each Periodic Report required by § 63.152(c) the information specified in § 63.122(g)(1).
 - (4) The owner or operator shall continue to meet the general control device requirements specified in § 63.11(b) of subpart A of this part.
 - (5) Except as provided in paragraph (e)(6) of this section, each closed vent system shall be inspected as specified in § 63.148 of this subpart. The inspections required to be performed in accordance with § 63.148(c) of this subpart shall be done during filling of the storage vessel.
 - (6) For any fixed roof tank and closed vent system that is operated and maintained under negative pressure, the owner or operator is not required to comply with the requirements specified in § 63.148 of this subpart.
- (f) To demonstrate compliance with § 63.119(f) of this subpart (storage vessel routed to a process), the owner or operator shall prepare a design evaluation (or engineering assessment) that demonstrates the extent to which one or more of the ends specified in § 63.119(f)(1)(i) through (f)(1)(iv) are being met. The owner or operator shall submit the design evaluation as part of the Notification of Compliance Status required by § 63.152(b) of this subpart.
- (g) To demonstrate compliance with the emission limits and work practice standards specified in § 63.119(a)(5) for storage vessels in ethylene oxide service, owners and operators must meet the requirements specified in § 63.124.

[59 FR 19468, Apr. 22, 1994, as amended at 61 FR 64576, Dec. 5, 1996; 62 FR 2748, Jan. 17, 1997; 89 FR 43190, May 16, 2024]

§ 63.121 Storage vessel provisions—alternative means of emission limitation.

- (a) Determination of equivalence to the reduction in emissions achieved by the requirements of § 63.119 (b), (c), or (d) of this subpart will be evaluated according to § 63.102(b) of subpart F of this part.
- (b) The determination of equivalence referred to in paragraph (a) of this section will be based on the application to the Administrator which shall include the information specified in either paragraph (b)(1) or (b)(2) of this section.
 - (1) Actual emissions tests that use full-size or scale-model storage vessels that accurately collect and measure all organic HAP emissions from a given control technique, and that accurately simulate wind and account for other emission variables such as temperature and barometric pressure, or
 - (2) An engineering analysis that the Administrator determines is an accurate method of determining equivalence.

§ 63.122 Storage vessel provisions—reporting.

- (a) For each Group 1 storage vessel, the owner or operator shall comply with the requirements of paragraphs (a)(1) through (a)(5) of this section.
 - (1) The owner or operator shall submit an Initial Notification as required by § 63.151(b) of this subpart.
 - (2) [Reserved]
 - (3) The owner or operator shall submit a Notification of Compliance Status as required by § 63.152(b) of this subpart and shall submit as part of the Notification of Compliance Status the information specified in paragraph (c) of this section.
 - (4) The owner or operator shall submit Periodic Reports as required by § 63.152(c) of this subpart and shall submit as part of the Periodic Reports the information specified in paragraphs (d), (e), (f), (g), and (i) of this section.
 - (5) The owner or operator shall submit, as applicable, other reports as required by § 63.152(d) of this subpart, containing the information specified in paragraph (h) of this section.
- (b) An owner or operator who elects to comply with § 63.119(e) of this subpart by using a closed vent system and a control device other than a flare shall submit, as part of the Monitoring Plan, the information specified in § 63.120(d)(2)(i) of this subpart and the information specified in either § 63.120(d)(2)(ii) of this subpart or § 63.120(d)(2)(iii) of this subpart.
- (c) An owner or operator who elects to comply with § 63.119(e) of this subpart by using a closed vent system and a control device shall submit, as part of the Notification of Compliance Status required by § 63.152(b) of this subpart, the information specified in either paragraph (c)(1) or (c)(2) of this section. An owner or operator who elects to comply with § 63.119(f) of this subpart by routing emissions to a process or to a fuel gas system shall submit, as part of the Notification of Compliance Status required by § 63.152(b) of this subpart, the information specified in paragraph (c)(3) of this section.
 - (1) If a control device other than a flare is used, the owner or operator shall submit the information specified in § 63.120(d)(3)(i) and, if applicable, (d)(3)(ii) of this subpart.
 - (2) Except as specified in paragraph (a) of § 63.108, if a flare is used, the owner or operator shall submit the information specified in § 63.120(e)(2)(i), (e)(2)(ii) through (iii).

- (3) If emissions are routed to a process, the owner or operator shall submit the information specified in § 63.120(f). If emissions are routed to a fuel gas system, the owner or operator shall submit a statement that the emission stream is connected to the fuel gas system and whether the conveyance system is subject to the requirements of § 63.148.
- (d) An owner or operator who elects to comply with § 63.119(b) of this subpart by using a fixed roof and an internal floating roof or with § 63.119(d) of this subpart by using an external floating roof converted to an internal floating roof shall submit, as part of the Periodic Report required under § 63.152(c) of this subpart, the results of each inspection conducted in accordance with § 63.120(a) of this subpart in which a failure is detected in the control equipment.
 - (1) For vessels for which annual inspections are required under § 63.120 (a)(2)(i) or (a)(3)(ii) of this subpart, the specifications and requirements listed in paragraphs (d)(1)(i) through (d)(1)(iii) of this section apply.
 - (i) A failure is defined as any time in which the internal floating roof is not resting on the surface of the liquid inside the storage vessel and is not resting on the leg supports; or there is liquid on the floating roof; or the seal is detached from the internal floating roof; or there are holes, tears, or other openings in the seal or seal fabric; or there are visible gaps between the seal and the wall of the storage vessel.
 - (ii) Except as provided in paragraph (d)(1)(iii) of this section, each Periodic Report shall include the date of the inspection, identification of each storage vessel in which a failure was detected, and a description of the failure. The Periodic Report shall also describe the nature of and date the repair was made or the date the storage vessel was emptied.
 - (iii) If an extension is utilized in accordance with § 63.120(a)(4) of this subpart, the owner or operator shall, in the next Periodic Report, identify the vessel; include the documentation specified in § 63.120(a)(4) of this subpart; and describe the date the storage vessel was emptied and the nature of and date the repair was made.
 - (2) For vessels for which inspections are required under § 63.120 (a)(2)(ii), (a)(3)(i), or (a)(3)(iii) of this subpart, the specifications and requirements listed in paragraphs (d)(2)(i) and (d)(2)(ii) of this section apply.
 - (i) A failure is defined as any time in which the internal floating roof has defects; or the primary seal has holes, tears, or other openings in the seal or the seal fabric; or the secondary seal (if one has been installed) has holes, tears, or other openings in the seal or the seal fabric; or the gaskets no longer close off the liquid surface from the atmosphere; or the slotted membrane has more than 10 percent open area.
 - (ii) Each Periodic Report required under § 63.152(c) of this subpart shall include the date of the inspection, identification of each storage vessel in which a failure was detected, and a description of the failure. The Periodic Report shall also describe the nature of and date the repair was made.
- (e) An owner or operator who elects to comply with § 63.119(c) of this subpart by using an external floating roof shall meet the periodic reporting requirements specified in paragraphs (e)(1), (e)(2), and (e)(3) of this section.

- (1) The owner or operator shall submit, as part of the Periodic Report required under § 63.152(c) of this subpart, documentation of the results of each seal gap measurement made in accordance with § 63.120(b) of this subpart in which the requirements of § 63.120 (b)(3), (b)(4), (b)(5), or (b)(6) of this subpart are not met. This documentation shall include the information specified in paragraphs (e)(1)(i) through (e)(1)(iv) of this section.
 - (i) The date of the seal gap measurement.
 - (ii) The raw data obtained in the seal gap measurement and the calculations described in § 63.120 (b)(3) and (b)(4) of this subpart.
 - (iii) A description of any condition specified in § 63.120 (b)(5) or (b)(6) of this subpart that is not met.
 - (iv) A description of the nature of and date the repair was made, or the date the storage vessel was emptied.
- (2) If an extension is utilized in accordance with § 63.120(b)(7)(ii) or (b)(8) of this subpart, the owner or operator shall, in the next Periodic Report, identify the vessel; include the documentation specified in § 63.120(b)(7)(ii) or (b)(8) of this subpart, as applicable; and describe the date the vessel was emptied and the nature of and date the repair was made.
- (3) The owner or operator shall submit, as part of the Periodic Report required under § 63.152(c) of this subpart, documentation of any failures that are identified during visual inspections required by § 63.120(b)(10) of this subpart. This documentation shall meet the specifications and requirements in paragraphs (e)(3)(i) and (e)(3)(ii) of this section.
 - (i) A failure is defined as any time in which the external floating roof has defects; or the primary seal has holes, or other openings in the seal or the seal fabric; or the secondary seal has holes, tears, or other openings in the seal or the seal fabric; or the gaskets no longer close off the liquid surface from the atmosphere; or the slotted membrane has more than 10 percent open area.
 - (ii) Each Periodic Report required under § 63.152(c) of this subpart shall include the date of the inspection, identification of each storage vessel in which a failure was detected, and a description of the failure. The periodic report shall also describe the nature of and date the repair was made.
- (f) An owner or operator who elects to comply with § 63.119(d) of this subpart by using an external floating roof converted to an internal floating roof shall comply with the periodic reporting requirements of paragraph (d) of this section.
- (g) An owner or operator who elects to comply with § 63.119(e) by installing a closed vent system and control device shall submit, as part of the next Periodic Report required by § 63.152(c), the information specified in paragraphs (g)(1) through (4) of this section.
 - (1) As required by § 63.120(d)(4) and (e)(3), the Periodic Report shall include the information specified in paragraphs (g)(1)(i) through (iii) of this section for those planned routine maintenance operations that would require the control device not to meet the requirements of § 63.119 (e)(1) or (2), as applicable.

- (i) A description of the planned routine maintenance that is anticipated to be performed for the control device during the next 6 months. This description shall include the type of maintenance necessary, planned frequency of maintenance, and lengths of maintenance periods.
 - (ii) A description of the planned routine maintenance that was performed for the control device during the previous 6 months. This description shall include the type of maintenance performed and the total number of hours during those 6 months that the control device did not meet the requirements of § 63.119 (e)(1) or (2), as applicable, due to planned routine maintenance.
 - (iii) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), for each storage vessel for which planned routine maintenance was performed during the previous 6 months, report the identification of the storage vessel and the height of the liquid in the storage vessel at the time the control device is bypassed to conduct the planned routine maintenance and at the time the control device is placed back in service after completing the routine maintenance. These reports shall include the date and time the liquid height was measured.
 - (2) If a control device other than a flare is used, the Periodic Report shall describe each occurrence when the monitored parameters were outside of the parameter ranges documented in the Notification of Compliance Status in accordance with § 63.120(d)(3)(i). The description shall include the information specified in paragraphs (g)(2)(i) and (ii) of this section.
 - (i) Identification of the control device for which the measured parameters were outside of the established ranges, the date, and the parameter that was outside of the established ranges, and
 - (ii) Cause for the measured parameters to be outside of the established ranges.
 - (3) Except as specified in paragraph (a) of § 63.108, if a flare is used, the Periodic Report shall describe each occurrence when the flare does not meet the general control device requirements specified in § 63.11(b) and shall include the information specified in paragraphs (g)(3)(i) and (ii) of this section.
 - (i) Identification of the flare which does not meet the general requirements specified in § 63.11(b), and
 - (ii) Reason the flare did not meet the general requirements specified in § 63.11(b).
 - (4) For each nonregenerative adsorber and regenerative adsorber that is regenerated offsite subject to the requirements in § 63.120(d)(1)(iii), the owner or operator must report the date of each instance when breakthrough, as defined in § 63.101, is detected between the first and second adsorber and the adsorber is not replaced according to § 63.120(d)(1)(iii)(C)(1) and an identification of the adsorber for which breakthrough was detected.
- (h) An owner or operator who elects to comply with § 63.119 (b), (c), or (d) of this subpart shall submit, as applicable, the reports specified in paragraphs (h)(1) and (h)(2) of this section.
- (1) In order to afford the Administrator the opportunity to have an observer present, the owner or operator shall notify the Administrator of the refilling of a storage vessel that has been emptied and degassed.
 - (i) If the storage vessel is equipped with an internal floating roof as specified in § 63.119(b) of this subpart, the notification shall meet the requirements of either § 63.120 (a)(5) or (a)(6) of this subpart, as applicable.

- (ii) If the storage vessel is equipped with an external floating roof as specified in § 63.119(c) of this subpart, the notification shall meet the requirements of either § 63.120 (b)(10)(ii) or (b)(10)(iii) of this subpart, as applicable.
- (iii) If the storage vessel is equipped with an external floating roof converted into an internal floating roof as specified in § 63.119(d) of this subpart, the notification shall meet the requirements of either § 63.120 (a)(5) or (a)(6) of this subpart, as applicable.
- (2) In order to afford the Administrator the opportunity to have an observer present, the owner or operator of a storage vessel equipped with an external floating roof as specified in § 63.119(c) of this subpart shall notify the Administrator of any seal gap measurements. This notification shall meet the requirements of § 63.120(b)(9) of this subpart.
- (i) For pressure vessels subject to the requirements of § 63.119(a)(7), if you obtain an instrument reading greater than 500 ppmv of a leak when monitoring a pressure vessel in accordance with § 63.119(a)(7)(ii), then the Periodic Report must include an identification of the pressure vessel and a copy of the records specified in § 63.123(b)(2).

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§ 63.123 Storage vessel provisions—recordkeeping.

- (a) Each owner or operator of a Group 1 or Group 2 storage vessel shall keep readily accessible records showing the dimensions of the storage vessel and an analysis showing the capacity of the storage vessel. This record shall be kept as long as the storage vessel retains Group 1 or Group 2 status and is in operation. For each Group 2 storage vessel, the owner or operator is not required to comply with any other provisions of §§ 63.119 through 63.123 of this subpart other than those required by this paragraph unless such vessel is part of an emissions average as described in § 63.150 of this subpart.
- (b) Each owner or operator of a pressure vessel subject to the requirements of § 63.119(a)(7) shall keep readily accessible records as specified in paragraphs (b)(1) and (2) of this section.
 - (1) The date of each performance test conducted according to § 63.119(a)(7)(ii).
 - (2) The record of each performance test conducted according to § 63.119(a)(7)(ii), including the following:
 - (i) Date each defect was detected and the instrument reading (in ppmv) during the performance test.
 - (ii) Date of the next performance test that shows the instrument reading is less than 500 ppmv and the instrument reading (in ppmv) during the performance test.
 - (iii) Start and end dates of each period after the date in paragraph (b)(2)(i) of this section when the pressure vessel was completely empty.
 - (iv) Estimated emissions from each defect.
- (c) An owner or operator who elects to comply with § 63.119(b) of this subpart shall keep a record that each inspection required by § 63.120(a) of this subpart was performed.

- (d) An owner or operator who elects to comply with § 63.119(c) of this subpart shall keep records describing the results of each seal gap measurement made in accordance with § 63.120(b) of this subpart. The records shall include the date of the measurement, the raw data obtained in the measurement, and the calculations described in § 63.120(b) (3) and (4) of this subpart.
- (e) An owner or operator who elects to comply with § 63.119(d) of this subpart shall keep a record that each inspection required by § 63.120 (a) and (c) of this subpart was performed.
- (f) An owner or operator who elects to comply with § 63.119(e) of this subpart shall keep in a readily accessible location the records specified in paragraphs (f)(1) and (f)(2) of this section.
 - (1) A record of the measured values of the parameters monitored in accordance with § 63.120(d)(5) of this subpart.
 - (2) A record of the planned routine maintenance performed on the control device including the duration of each time the control device does not meet the specifications of § 63.119 (e)(1) or (e)(2) of this subpart, as applicable, due to the planned routine maintenance. Such a record shall include the information specified in paragraphs (f)(2)(i) and (f)(2)(ii) of this section.
 - (i) The first time of day and date the requirements of § 63.119 (e)(1) or (e)(2) of this subpart, as applicable, were not met at the beginning of the planned routine maintenance, and
 - (ii) The first time of day and date the requirements of § 63.119 (e)(1) or (e)(2) of this subpart, as applicable, were met at the conclusion of the planned routine maintenance.
- (g) An owner or operator who elects to utilize an extension in emptying a storage vessel in accordance with § 63.120 (a)(4), (b)(7)(ii), or (b)(8) of this subpart shall keep in a readily accessible location, the documentation specified in § 63.120 (a)(4), (b)(7)(ii), or (b)(8), as applicable.
- (h) An owner or operator who uses the bypass provisions of § 63.119(f)(3) shall keep in a readily accessible location the records specified in paragraphs (h)(1) through (3) of this section.
 - (1) The reason it was necessary to bypass the process equipment or fuel gas system;
 - (2) The duration of the period when the process equipment or fuel gas system was bypassed;
 - (3) Documentation or certification of compliance with the applicable provisions of § 63.119(f)(3)(i) through (iv).
- (i) An owner or operator who elects to comply with § 63.119(g) shall keep the records specified in paragraphs (i)(1) through (3) of this section.
 - (1) A record of the U.S. Department of Transportation certification required by § 63.119(g)(2).
 - (2) A record of the pressure relief vent setting specified in § 63.119(g)(5).
 - (3) If complying with § 63.119(g)(6)(ii), keep the records specified in paragraphs (i)(3)(i) and (ii) of this section.
 - (i) A record of the equipment to be used and the procedures to be followed when reloading the railcar, tank truck, or barge and displacing vapors to the storage vessel from which the liquid originates.
 - (ii) A record of each time the vapor balancing system is used to comply with § 63.119(g)(6)(ii).

- (j) For each nonregenerative adsorber and regenerative adsorber that is regenerated offsite subject to the requirements in § 63.120(d)(1)(iii), the owner or operator must keep the applicable records specified in (j)(1) through (3) of this section.
 - (1) Breakthrough limit and bed life established according to § 63.120(d)(1)(iii)(A).
 - (2) Each outlet HAP or TOC concentration measured according to § 63.120(d)(1)(iii)(B) and (C).
 - (3) Date and time you last replaced the adsorbent.
- (k) For storage vessels in ethylene oxide service, subject to the requirements of § 63.124, owners and operators must keep the records specified in paragraphs (k)(1) and (2) of this section in addition to those records specified elsewhere in this section.
 - (1) For storage vessels in ethylene oxide service, records of the concentration of ethylene oxide of the fluid stored in each storage vessel.
 - (2) If emissions are vented through a closed-vent system to a non-flare control device, then the owner or operator must keep records of all periods during which operating values are outside of the applicable operating limits specified in § 63.124(b)(4) through (6) when regulated material is being routed to the non-flare control device. The record must specify the operating parameter, the applicable limit, and the highest (for maximum operating limits) or lowest (for minimum operating limits) value recorded during the period.

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§ 63.124 Process vents and storage vessels that are in ethylene oxide service—procedures to determine compliance.

This section applies beginning no later than the compliance dates specified in § 63.100(k)(11). In order to demonstrate compliance with the emission limits and work practice standards specified in § 63.113(j) (for process vents in ethylene oxide service) and § 63.119(a)(5) (for storage vessels in ethylene oxide service), owners and operators must meet the requirements specified in paragraphs (a) and (b) of this section.

- (a) For initial compliance, owners and operators must comply with paragraphs (a)(1) through (4) of this section, as applicable.
 - (1) If an owner or operator chooses to reduce emissions of ethylene oxide by venting emissions through a closed vent system to a flare as specified in § 63.113(j)(1) or § 63.119(a)(5)(i), then the owner or operator must comply with § 63.148 and conduct the initial visible emissions demonstration required by § 63.670(h) as specified in § 63.108.
 - (2) If an owner or operator chooses to reduce emissions of ethylene oxide by venting emissions through a closed vent system to a non-flare control device that reduces ethylene oxide by greater than or equal to 99.9 percent by weight as specified in § 63.113(j)(2) or § 63.119(a)(5)(ii), then the owner or operator must comply with § 63.148 and paragraphs (a)(2)(i) through (viii) of this section.

- (i) Conduct an initial performance test of the control device that is used to comply with the percent reduction requirement at the inlet and outlet of the control device. For purposes of compliance with this paragraph, owners and operators may not use a design evaluation. This paragraph does not apply if the conditions specified in paragraphs (a)(2)(i)(A) through (D) of this section are met for a previously conducted measurement or performance test.
 - (A) No changes have been made to the process since the time of the measurement or performance test;
 - (B) The operating conditions and test methods used during measurement or performance test conform to the ethylene oxide related requirements of this subpart;
 - (C) The control device and process parameter values established during the previously conducted measurement or performance test are used to demonstrate continuous compliance with the ethylene oxide related requirements of this subpart; and
 - (D) The previously conducted measurement or performance test was completed within the last 60 months.
- (ii) Conduct the performance test according to the procedures in § 63.116(c). Except as specified in § 63.109(a)(6), use Method 18 of appendix A-6 to part 60 of this chapter or Method 320 of appendix A to this part to determine the ethylene oxide concentration. Use Method 1 or 1A of appendix A-1 to part 60 of this chapter to select the sampling sites at each sampling location. Determine the gas volumetric flowrate using Method 2, 2A, 2C, or 2D of appendix A-2 to part 60 of this chapter. Use Method 4 of appendix A-3 to part 60 of this chapter convert the volumetric flowrate to a dry basis.
- (iii) Calculate the mass emission rate of ethylene oxide entering the control device and exiting the control device using equations 1 and 2 to this paragraph.

Equations 1 and 2 to Paragraph (a)(2)(iii)

$$E_{\text{inlet}} = K C_{\text{inlet}} M Q_{\text{inlet}} \text{ (Eq. 1)}$$

$$E_{\text{outlet}} = K C_{\text{outlet}} M Q_{\text{outlet}} \text{ (Eq. 2)}$$

Where:

$E_{\text{inlet}}, E_{\text{outlet}}$ = Mass rate of ethylene oxide at the inlet and outlet of the control device, respectively, kilogram per hour.

$C_{\text{inlet}}, C_{\text{outlet}}$ = Concentration of ethylene oxide in the gas stream at the inlet and outlet of the control device, respectively, dry basis, parts per million by volume.

M = Molecular weight of ethylene oxide, 44.05 grams per gram-mole.

$Q_{\text{inlet}}, Q_{\text{outlet}}$ = Flow rate of the gas stream at the inlet and outlet of the control device, respectively, dry standard cubic meter per minute.

$K = \text{Constant}, 2.494 \times 10^{-6} \text{ (parts per million)}^{-1} \text{ (gram-mole per standard cubic meter) (kilogram per gram) (minutes per hour)}$, where standard temperature (gram-mole per standard cubic meter) is 20 °C.

- (iv) Calculate the percent reduction from the control device using equation 3 to this paragraph. An owner or operator has demonstrated initial compliance with § 63.113(j)(2) or § 63.119(a)(5)(ii) if the overall reduction of ethylene oxide is greater than or equal to 99.9 percent by weight.

Equation 3 to Paragraph (a)(2)(iv)

$$\text{Percent reduction} = (E_{\text{inlet}} - E_{\text{outlet}}) / E_{\text{inlet}} * 100 \text{ (Eq.3)}$$

Where:

$E_{\text{inlet}}, E_{\text{outlet}}$ = Mass rate of ethylene oxide at the inlet and outlet of the control device, respectively, kilogram per hour, calculated using Equations 1 and 2 to paragraph (a)(2)(iii) of this section.

- (v) If a new control device is installed, then conduct a performance test of the new device following the procedures in paragraphs (a)(2)(i) through (iv) of this section.
- (vi) If an owner or operator vents emissions through a closed vent system to a scrubber with a reactant tank, then the owner or operator must establish operating parameter limits by monitoring the operating parameters specified in paragraphs (a)(2)(vi)(A) through (C) of this section during the performance test.
 - (A) Scrubber liquid-to-gas ratio (L/G), determined from the total scrubber liquid inlet flow rate and the inlet or exit gas flow rate. Determine the average L/G during the performance test as the average of the test run averages. Alternatively, separately monitor the total scrubber liquid flow rate and gas flow rate through the scrubber. Determine the average total scrubber liquid flow rate and gas flow through the scrubber as the average of the test run averages.
 - (B) Scrubber liquid pH of the liquid in the reactant tank. The pH may be measured at any point between the discharge from the scrubber column and the inlet to the reactant tank. Determine the average pH during the performance test as the average of the test run averages.
 - (C) Temperature of the scrubber liquid entering the scrubber column. The temperature may be measured at any point after the heat exchanger and prior to entering the top of the scrubber column. Determine the average inlet scrubber liquid temperature as the average of the test run averages.
- (vii) If an owner or operator vents emissions through a closed vent system to a thermal oxidizer, then the owner or operator must establish operating parameter limits by monitoring the operating parameters specified in paragraphs (a)(2)(vii)(A) and (B) of this section during the performance test.
 - (A) Combustion chamber temperature. Determine the average combustion chamber temperature during the performance test as the average of the test run averages.

- (B) Flue gas flow rate. Determine the average flue gas flow rate during the performance test as the average of the test run averages.
- (viii) If an owner or operator vents emissions through a closed vent system to a control device other than a flare, scrubber with a reactant tank, or thermal oxidizer, then the owner or operator must notify the Administrator of the operating parameters that are planned to be monitored during the performance test prior to establishing operating parameter limits for the control device.
- (3) If an owner or operator chooses to reduce emissions of ethylene oxide by venting emissions through a closed vent system to a non-flare control device that reduces ethylene oxide to less than 1 ppmv as specified in § 63.113(j)(2) or § 63.119(a)(5)(ii), then the owner or operator must comply with § 63.148 and either paragraph (a)(3)(i) or (ii) of this section.
 - (i) Install a continuous emissions monitoring system (CEMS) to continuously monitor the ethylene oxide concentration at the exit of the control device. The CEMS must meet the requirements of either paragraph (a)(3)(i)(A) or (B) of this section. Comply with the requirements specified in § 63.2450(j) for CEMS.
 - (A) An FTIR CEMS meeting the requirements of Performance Specification 15 of appendix B to part 60 of this chapter.
 - (B) A gas chromatographic CEMS meeting the requirements of Performance Specification 9 of appendix B to part 60 of this chapter.
 - (ii) If the owner or operator does not install a CEMS under paragraph (a)(3)(i) of this section, then the owner or operator must comply with paragraphs (a)(3)(ii)(A) through (C) of this section.
 - (A) Conduct an initial performance test at the outlet of the control device that is used to comply with the concentration requirement.
 - (B) Conduct the performance test according to the procedures in § 63.116(c). Except as specified in § 63.109(a)(6), use Method 18 of appendix A-6 to part 60 of this chapter or Method 320 of appendix A to this part to determine the ethylene oxide concentration. If the non-flare control device is a combustion device, correct the ethylene oxide concentration to 3 percent oxygen according to § 63.116(c)(iii)(B), except "TOC or organic HAP" and "TOC (minus methane and ethane) or organic HAP" in the Variables C_c and C_m must be replaced with "ethylene oxide". An owner or operator has demonstrated initial compliance with § 63.113(j)(2) or § 63.119(a)(5)(ii), if the ethylene oxide concentration is less than 1 ppmv.
 - (C) Comply with the requirements specified in paragraphs (a)(2)(v) through (viii) of this section, as applicable.
- (4) If owners and operators choose to reduce emissions of ethylene oxide by venting emissions through a closed vent system to a non-flare control device that reduces ethylene oxide to less than 5 pounds per year for all combined process vents within the process as specified in § 63.113(j)(2), then the owner or operator must comply with § 63.148 and paragraphs (a)(4)(i) through (iv) of this section.
 - (i) Conduct an initial performance test of the control device that is used to comply with the mass emission limit requirement at the outlet of the control device.

- (ii) Conduct the performance test according to the procedures in § 63.116(c). Except as specified in § 63.109(a)(6), use Method 18 of appendix A-6 to part 60 of this chapter or Method 320 of appendix A to this part to determine the ethylene oxide concentration. Use Method 1 or 1A of appendix A-1 to part 60 of this chapter to select the sampling site. Determine the gas volumetric flowrate using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A-2. Use Method 4 of appendix A-3 to part 60 of this chapter to convert the volumetric flowrate to a dry basis.
 - (iii) Calculate the mass emission rate of ethylene oxide exiting the control device using Equation 2 to paragraph (a)(2)(iii) of this section. An owner or operator has demonstrated initial compliance with § 63.113(j)(2) if the ethylene oxide from all process vents (controlled and uncontrolled) within the process is less than 5 pounds per year when combined.
 - (iv) Comply with the requirements specified in paragraphs (a)(2)(v) through (viii) of this section, as applicable.
- (b) For continuous compliance, owners and operators must comply with paragraphs (b)(1) through (6) of this section, as applicable.
- (1) If an owner or operator chooses to reduce emissions of ethylene oxide by venting emissions through a closed vent system to a flare as specified in § 63.113(j)(1) or § 63.119(a)(5)(i), then the owner or operator must comply with §§ 63.148 and 63.108.
 - (2) If you choose to reduce emissions of ethylene oxide by venting emissions through a closed-vent system to a non-flare control device that reduces ethylene oxide to less than 1 ppmv as specified in § 63.113(j)(2) or § 63.119(a)(5)(ii), and you choose to comply with paragraph (a)(3)(i) of this section, then continuously monitor the ethylene oxide concentration at the exit of the control device using an FTIR CEMS meeting the requirements of Performance Specification 15 of appendix B to part 60 of this chapter and § 63.2450(j). If an owner or operator uses an FTIR CEMS, then the owner or operator does not need to conduct the performance testing required in paragraph (b)(3) of this section or the operating parameter monitoring required in paragraphs (b)(4) through (6) of this section.
 - (3) Conduct a performance test no later than 60 months after the previous performance test and reestablish operating parameter limits following the procedures in paragraph (a)(2) through (4) of this section. The Administrator may request a repeat performance test at any time. For purposes of compliance with this paragraph, owners and operators may not use a design evaluation.
 - (4) If an owner or operator vents emissions through a closed vent system to a scrubber with a reactant tank, then the owner or operator must comply with § 63.148 and meet the operating parameter limits specified in paragraphs (b)(4)(i) through (v) of this section.
 - (i) Minimum scrubber liquid-to-gas ratio (L/G), equal to the average L/G measured during the most recent performance test. Determine total scrubber liquid inlet flow rate with a flow sensor with a minimum accuracy of at least ±5 percent over the normal range of flow measured, or 1.9 liters per minute (0.5 gallons per minute), whichever is greater. Determine gas flow rate at either the inlet or the exit of the scrubber with a flow sensor with a minimum accuracy of at least ±5 percent over the normal range of flow measured, or 280 liters per minute (10 cubic feet per minute), whichever is greater. If gas flow rate is determined at the inlet of the scrubber, ensure that all gas flow through the scrubber is accounted for at the measurement location. Compliance with the minimum L/G operating limit must be determined continuously on a 1-hour block basis. Alternatively, minimum total scrubber liquid flow rate, equal to the average total scrubber liquid inlet flow rate measured during the most recent performance test, and

maximum gas flow rate through the scrubber, equal to the average gas flow rate through the scrubber during the most recent performance test. Compliance with the total scrubber liquid flow rate and gas flow rate through the scrubber must be determined continuously on a 1-hour block basis.

- (ii) Maximum scrubber liquid pH of the liquid in the reactant tank, equal to the average pH measured during the most recent performance test. Compliance with the pH operating limit must be determined continuously on a 1-hour block basis. Use a pH sensor with a minimum accuracy of ± 0.2 pH units.
 - (iii) Pressure drop across the scrubber column, within the pressure drop range specified by the manufacturer or established based on engineering analysis. Compliance with the pressure drop operating limit must be determined continuously on a 1-hour block basis. Use pressure sensors with a minimum accuracy of ± 5 percent over the normal operating range or 0.12 kilopascals, whichever is greater.
 - (iv) Maximum temperature of the scrubber liquid entering the scrubber column, equal to the average temperature measured during the most recent performance test. Compliance with the inlet scrubber liquid temperature operating limit must be determined continuously on a 1-hour block basis. Use a temperature sensor with a minimum accuracy of ± 1 percent over the normal range of the temperature measured, expressed in degrees Celsius, or 2.8 degrees Celsius, whichever is greater.
 - (v) Liquid feed pressure to the scrubber column within the feed pressure range specified by the manufacturer or established based on engineering analysis. Compliance with the liquid feed pressure operating limit must be determined continuously on a 1-hour block basis. Use a pressure sensor with a minimum accuracy of ± 5 percent over the normal operating range or 0.12 kilopascals, whichever is greater.
- (5) If an owner or operator vents emissions through a closed vent system to a thermal oxidizer, then the owner or operator must comply with § 63.148, and the owner or operator must meet the operating parameter limits specified in paragraphs (b)(5)(i) and (ii) of this section and the requirements in paragraph (b)(5)(iii) of this section.
- (i) Minimum combustion chamber temperature, equal to the average combustion chamber temperature measured during the most recent performance test. Determine combustion chamber temperature with a temperature sensor with a minimum accuracy of at least ± 1 percent over the normal range of temperature measured, expressed in degrees Celsius, or 2.8 degrees Celsius, whichever is greater. Compliance with the minimum combustion chamber temperature operating limit must be determined continuously on a 1-hour block basis.
 - (ii) Maximum flue gas flow rate, equal to the average flue gas flow rate measured during the most recent performance test. Determine flue gas flow rate with a flow sensor with a minimum accuracy of at least ± 5 percent over the normal range of flow measured, or 280 liters per minute (10 cubic feet per minute), whichever is greater. Compliance with the maximum flue gas flow rate operating limit must be determined continuously on a 1-hour block basis.
 - (iii) The owner or operator must maintain the thermal oxidizer in accordance with good combustion practices that ensure proper combustion. Good combustion practices include, but are not limited to, proper burner maintenance, proper burner alignment, proper fuel to air distribution and mixing, routine inspection, and preventative maintenance.

- (6) If an owner or operator vents emissions through a closed vent system to a control device other than a flare, scrubber with a reactant tank, or thermal oxidizer, then the owner or operator must comply with § 63.148, and the owner or operator must monitor the operating parameters identified in paragraph (a)(2)(viii) of this section and meet the established operating parameter limits to ensure continuous compliance. The frequency of monitoring and averaging time will be determined based upon the information provided to the Administrator.

[89 FR 43193, May 16, 2024]

§ 63.125 [Reserved]

§ 63.126 Transfer operations provisions—reference control technology.

- (a) For each Group 1 transfer rack the owner or operator shall equip each transfer rack with a vapor collection system and control device.
 - (1) Each vapor collection system shall be designed and operated to collect the organic hazardous air pollutants vapors displaced from tank trucks or railcars during loading, and to route the collected hazardous air pollutants vapors to a process, or to a fuel gas system, or to a control device as provided in paragraph (b) of this section.
 - (2) Each vapor collection system shall be designed and operated such that organic HAP vapors collected at one loading arm will not pass through another loading arm in the rack to the atmosphere.
 - (3) Whenever organic hazardous air pollutants emissions are vented to a process, fuel gas system, or control device used to comply with the provisions of this subpart, the process, fuel gas system, or control device shall be operating.
- (b) For each Group 1 transfer rack the owner or operator shall comply with paragraph (b)(1), (b)(2), (b)(3), or (b)(4) of this section.
 - (1) Use a control device to reduce emissions of total organic hazardous air pollutants by 98 weight-percent or to an exit concentration of 20 parts per million by volume. For combustion devices, the emission reduction or concentration shall be calculated on a dry basis, corrected to 3-percent oxygen. If a boiler or process heater is used to comply with the percent reduction requirement, then the vent stream shall be introduced into the flame zone of such a device. Compliance may be achieved by using any combination of combustion, recovery, and/or recapture devices.
 - (2) Reduce emissions of organic HAP's using a flare.
 - (i) Except as specified in § 63.108(a), the flare shall comply with the requirements of § 63.11(b).
 - (ii) Halogenated vent streams, as defined in § 63.111 of this subpart, shall not be vented to a flare.
 - (3) Reduce emissions of organic hazardous air pollutants using a vapor balancing system designed and operated to collect organic hazardous air pollutants vapors displaced from tank trucks or railcars during loading; and to route the collected hazardous air pollutants vapors to the storage vessel from which the liquid being loaded originated, or to another storage vessel connected to a common header, or to compress and route to a process collected hazardous air pollutants vapors.

- (4) Route emissions of organic hazardous air pollutants to a fuel gas system or to a process where the organic hazardous air pollutants in the emissions shall predominantly meet one of, or a combination of, the ends specified in paragraphs (b)(4)(i) through (b)(4)(iv) of this section.
 - (i) Recycled and/or consumed in the same manner as a material that fulfills the same function in that process;
 - (ii) Transformed by chemical reaction into materials that are not organic hazardous air pollutants;
 - (iii) Incorporated into a product; and/or
 - (iv) Recovered.
- (c) For each Group 2 transfer rack, the owner or operator shall maintain records as required in § 63.130(f). No other provisions for transfer racks apply to the Group 2 transfer rack.
- (d) Halogenated emission streams from Group 1 transfer racks that are combusted shall be controlled according to paragraph (d)(1) or (d)(2) of this section. Determination of whether a vent stream is halogenated shall be made using procedures in (d)(3).
 - (1) If a combustion device is used to comply with paragraph (b)(1) of this section for a halogenated vent stream, then the vent stream exiting the combustion device shall be ducted to a halogen reduction device, including, but not limited to, a scrubber before it is discharged to the atmosphere.
 - (i) Except as provided in paragraph (d)(1)(ii) of this section, the halogen reduction device shall reduce overall emissions of hydrogen halides and halogens, as defined in § 63.111, by 99 percent or shall reduce the outlet mass emission rate of total hydrogen halides and halogens to 0.45 kilograms per hour or less.
 - (ii) If a scrubber or other halogen reduction device was installed prior to December 31, 1992, the halogen reduction device shall reduce overall emissions of hydrogen halides and halogens, as defined in § 63.111, by 95 percent or shall reduce the outlet mass of total hydrogen halides and halogens to less than 0.45 kilograms per hour.
 - (2) A halogen reduction device, such as a scrubber, or other technique may be used to make the vent stream non-halogenated by reducing the vent stream halogen atom mass emission rate to less than 0.45 kilograms per hour prior to any combustion control device used to comply with the requirements of paragraphs (b)(1) or (b)(2) of this section.
 - (3) In order to determine whether a vent stream is halogenated, the mass emission rate of halogen atoms contained in organic compounds shall be calculated.
 - (i) The vent stream concentration of each organic compound containing halogen atoms (parts per million by volume by compound) shall be determined based on the following procedures:
 - (A) Process knowledge that no halogen or hydrogen halides are present in the process, or
 - (B) Applicable engineering assessment as specified in § 63.115(d)(1)(iii), or
 - (C) Concentration of organic compounds containing halogens measured by Method 18 of appendix A to part 60 of this chapter,
 - (D) Any other method or data that has been validated according to the applicable procedures in Method 301 of appendix A of this part, or

(E) ASTM D6420-18 (incorporated by reference, see § 63.14) may also be used in lieu of Method 18 of appendix A-6 to part 60 of this chapter, if the target compounds are all known and are all listed in section 1.1 of ASTM D6420-18 as measurable; ASTM D6420-18 must not be used for methane and ethane; and ASTM D6420-18 may not be used as a total VOC method.

(ii) The following equation shall be used to calculate the mass emission rate of halogen atoms:

$$E = K_2 V_s \left(\sum_{j=1}^n \sum_{i=1}^m C_j * L_{ji} * M_{ji} \right)$$

where:

E = Mass of halogen atoms, dry basis, kilograms per hour.

K_2 = Constant, 2.494×10^{-6} (parts per million)⁻¹ (kilogram-mole per standard cubic meter) (minute/hour), where standard temperature is 20 °C.

C_j = Concentration of halogenated compound j in the gas stream, dry basis, parts per million by volume.

M_{ji} = Molecular weight of halogen atom i in compound j of the gas stream, kilogram per kilogram-mole.

L_{ji} = Number of atoms of halogen i in compound j of the gas stream.

V_s = Flow rate of gas stream, dry standard cubic meters per minute, determined according to § 63.128(a)(8) of this subpart.

j = Halogenated compound j in the gas stream.

i = Halogen atom i in compound j of the gas stream.

n = Number of halogenated compounds j in the gas stream.

m = Number of different halogens i in each compound j of the gas stream.

(e) For each Group 1 transfer rack the owner or operator shall load organic HAP's into only tank trucks and railcars which:

- (1) Have a current certification in accordance with the U. S. Department of Transportation pressure test requirements of 49 CFR part 180 for tank trucks and 49 CFR 173.31 for railcars; or
- (2) Have been demonstrated to be vapor-tight within the preceding 12 months, as determined by the procedures in § 63.128(f) of this subpart. Vapor-tight means that the truck or railcar tank will sustain a pressure change of not more than 750 pascals within 5 minutes after it is pressurized to a minimum of 4,500 pascals.

- (f) The owner or operator of a transfer rack subject to the provisions of this subpart shall load organic HAP's to only tank trucks or railcars equipped with vapor collection equipment that is compatible with the transfer rack's vapor collection system.
- (g) The owner or operator of a transfer rack subject to this subpart shall load organic HAP's to only tank trucks or railcars whose collection systems are connected to the transfer rack's vapor collection systems.
- (h) Except as specified in paragraph (h)(1) of this section, the owner or operator of a transfer rack subject to the provisions of this subpart shall ensure that no pressure-relief device in the transfer rack's vapor collection system or in the organic hazardous air pollutants loading equipment of each tank truck or railcar shall begin to open during loading. Pressure relief devices needed for safety purposes are not subject to this paragraph (h).
 - (1) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), this paragraph (h) does not apply. Instead, pressure relief devices are subject to the requirements specified in § 63.165(e).
 - (2) [Reserved]
- (i) Each valve in the vent system that would divert the vent stream to the atmosphere, either directly or indirectly, shall be secured in a non-diverting position using a carseal or a lock-and-key type configuration, or shall be equipped with a flow indicator. Except as specified in paragraph (i)(1) of this section, equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and pressure relief devices needed for safety purposes is not subject to this paragraph (i).
 - (1) For each source as defined in § 63.101, on and after July 15, 2027, the last sentence in paragraph (i) of this section no longer applies. Instead, the exemptions specified in paragraphs (i)(1)(i) and (ii) of this section apply.
 - (i) Except for pressure relief devices subject to § 63.165(e)(4) of subpart H of this part, equipment such as low leg drains and equipment subject to the requirements of subpart H of this part are not subject to this paragraph (i).
 - (ii) Open-ended valves or lines that use a cap, blind flange, plug, or second valve and follow the requirements specified in § 60.482-6(a)(2), (b), and (c) or follow requirements codified in another regulation that are the same as § 60.482-6(a)(2), (b), and (c) are not subject to this paragraph (i).
 - (2) [Reserved]

[59 FR 19468, Apr. 22, 1994, as amended at 62 FR 2749, Jan. 17, 1997; 89 FR 43196, May 16, 2024]

§ 63.127 Transfer operations provisions—monitoring requirements.

- (a) Each owner or operator of a Group 1 transfer rack equipped with a combustion device used to comply with the 98 percent total organic hazardous air pollutants reduction or 20 parts per million by volume outlet concentration requirements in § 63.126(b)(1) of this subpart shall install, calibrate, maintain, and operate according to the manufacturers' specifications (or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately) the monitoring equipment specified in paragraph (a)(1), (a)(2), (a)(3), or (a)(4) of this section, as appropriate.
 - (1) Where an incinerator is used, a temperature monitoring device equipped with a continuous recorder is required.

- (i) Where an incinerator other than a catalytic incinerator is used, a temperature monitoring device shall be installed in the firebox or in the ductwork immediately downstream of the firebox in a position before any substantial heat exchange occurs.
 - (ii) Where a catalytic incinerator is used, temperature monitoring devices shall be installed in the gas stream immediately before and after the catalyst bed.
- (2) Where a flare is used, except as specified in § 63.108(a), a device (including but not limited to a thermocouple, infrared sensor, or an ultra-violet beam sensor) capable of continuously detecting the presence of a pilot flame is required.
- (3) Where a boiler or process heater with a design heat input capacity less than 44 megawatts is used, a temperature monitoring device in the firebox equipped with a continuous recorder is required. Any boiler or process heater in which all vent streams are introduced with the primary fuel or are used as the primary fuel is exempt from this requirement.
- (4) Where a scrubber is used with an incinerator, boiler, or process heater in the case of halogenated vent streams, the following monitoring equipment is required for the scrubber:
 - (i) A pH monitoring device equipped with a continuous recorder shall be installed to monitor the pH of the scrubber effluent.
 - (ii) A flow meter equipped with a continuous recorder shall be located at the scrubber influent for liquid flow. Gas stream flow shall be determined using one of the procedures specified in paragraphs (a)(4)(ii)(A) through (a)(4)(ii)(C) of this section.
 - (A) The owner or operator may determine gas stream flow using the design blower capacity, with appropriate adjustments for pressure drop.
 - (B) If the scrubber is subject to regulations in 40 CFR parts 264 through 266 that have required a determination of the liquid to gas (L/G) ratio prior to the applicable compliance date for this subpart specified in § 63.100(k) of subpart F of this part, the owner or operator may determine gas stream flow by the method that had been utilized to comply with those regulations. A determination that was conducted prior to the compliance date for this subpart may be utilized to comply with this subpart if it is still representative.
 - (C) The owner or operator may prepare and implement a gas stream flow determination plan that documents an appropriate method which will be used to determine the gas stream flow. The plan shall require determination of gas stream flow by a method which will at least provide a value for either a representative or the highest gas stream flow anticipated in the scrubber during representative operating conditions other than start-ups, shutdowns, or malfunctions. The plan shall include a description of the methodology to be followed and an explanation of how the selected methodology will reliably determine the gas stream flow, and a description of the records that will be maintained to document the determination of gas stream flow. The owner or operator shall maintain the plan as specified in § 63.103(c). For each source as defined in § 63.101, on and after July 15, 2027, the phrase "other than start-ups, shutdowns, or malfunctions" in this paragraph no longer applies.
- (b) Each owner or operator of a Group 1 transfer rack that uses a recovery device or recapture device to comply with the 98-percent organic hazardous air pollutants reduction or 20 parts per million by volume hazardous air pollutants concentration requirements in § 63.126(b)(1) of this subpart shall install either

an organic monitoring device equipped with a continuous recorder, or the monitoring equipment specified in paragraph (b)(1), (b)(2), or (b)(3) of this section, depending on the type of recovery device or recapture device used. All monitoring equipment shall be installed, calibrated, and maintained according to the manufacturer's specifications or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately.

- (1) Where an absorber is used, a scrubbing liquid temperature monitoring device equipped with a continuous recorder shall be used; and a specific gravity monitoring device equipped with a continuous recorder shall be used.
- (2) Where a condenser is used, a condenser exit (product side) temperature monitoring device equipped with a continuous recorder shall be used.
- (3) Except as specified in paragraph (b)(4) of this section, where a carbon adsorber is used, an integrating regeneration stream flow monitoring device having an accuracy of ± 10 percent or better, capable of recording the total regeneration stream mass flow for each regeneration cycle; and a carbon bed temperature monitoring device, capable of recording the temperature of the carbon bed after regeneration and within 15 minutes of completing any cooling cycle shall be used.
- (4) Beginning no later than the compliance dates specified in § 63.100(k)(10), if the owner or operator vents emissions through a closed vent system to an adsorber(s) that cannot be regenerated or a regenerative adsorber(s) that is regenerated offsite, then the owner or operator must install a system of two or more adsorber units in series and comply with the requirements specified in paragraphs (b)(4)(i) through (iii) of this section.
 - (i) Conduct an initial performance test or design evaluation of the adsorber and establish the breakthrough limit and adsorber bed life.
 - (ii) Monitor the HAP or total organic compound (TOC) concentration through a sample port at the outlet of the first adsorber bed in series according to the schedule in paragraph (b)(4)(iii)(B) of this section. The owner or operator must measure the concentration of HAP or TOC using either a portable analyzer, in accordance with Method 21 of appendix A-7 to part 60 of this chapter using methane, propane, isobutylene, or the primary HAP being controlled as the calibration gas or Method 25A of part 60, appendix A-7, using methane, propane, or the primary HAP being controlled as the calibration gas.
 - (iii) Comply with paragraph (b)(4)(iii)(A) of this section and comply with the monitoring frequency according to paragraph (b)(4)(iii)(B) of this section.
 - (A) The first adsorber in series must be replaced immediately when breakthrough, as defined in § 63.101, is detected between the first and second adsorber. The original second adsorber (or a fresh canister) will become the new first adsorber and a fresh adsorber will become the second adsorber. For purposes of this paragraph, "immediately" means within 8 hours of the detection of a breakthrough for adsorbers of 55 gallons or less, and within 24 hours of the detection of a breakthrough for adsorbers greater than 55 gallons. The owner or operator must monitor at the outlet of the first adsorber within 3 days of replacement to confirm it is performing properly.

- (B) Based on the adsorber bed life established according to paragraph (b)(4)(i) of this section and the date the adsorbent was last replaced, conduct monitoring to detect breakthrough at least monthly if the adsorbent has more than 2 months of life remaining, at least weekly if the adsorbent has between 2 months and 2 weeks of life remaining, and at least daily if the adsorbent has 2 weeks or less of life remaining.
- (c) An owner or operator of a Group 1 transfer rack may request approval to monitor parameters other than those listed in paragraph (a) or (b) of this section. The request shall be submitted according to the procedures specified in § 63.151(f) or § 63.152(e) of this subpart. Approval shall be requested if the owner or operator:
 - (1) Seeks to demonstrate compliance with the standards specified in § 63.126(b) of this subpart with a control device other than an incinerator, boiler, process heater, flare, absorber, condenser, or carbon adsorber; or
 - (2) Uses one of the control devices listed in paragraphs (a) and (b) of this section, but seeks to monitor a parameter other than those specified in paragraphs (a) and (b) of this subpart.
- (d) The owner or operator of a Group 1 transfer rack using a closed vent system that contains bypass lines that could divert a vent stream flow away from the control device used to comply with § 63.126(b) shall comply with paragraph (d)(1) or (2) and (d)(3) of this section. Except as specified in paragraph (d)(3) of this section, equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and pressure relief valves needed for safety purposes are not subject to this paragraph.
 - (1) Properly install, maintain, and operate a flow indicator that takes a reading at least once every 15 minutes. Records shall be generated as specified in § 63.130(b). The flow indicator shall be installed at the entrance to any bypass line that could divert the vent stream away from the control device to the atmosphere; or
 - (2) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration.
 - (i) A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and the vent stream is not diverted through the bypass line.
 - (ii) If a car-seal has been broken or a valve position changed, the owner or operator shall record that the vent stream has been diverted. The car-seal or lock-and-key combination shall be returned to the secured position as soon as practicable but not later than 15 calendar days after the change in position is detected.
 - (3) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10):
 - (i) The use of a bypass line at any time on a closed vent system to divert emissions (subject to the emission standards in § 63.112) to the atmosphere or to a control device not meeting the requirements specified in this subpart is an emissions standards violation.
 - (ii) The last sentence in paragraph (d) of this section no longer applies. Instead, the exemptions specified in paragraph (d)(3)(ii)(A) and (B) of this section apply.

- (A) Except for pressure relief devices subject to § 63.165(e)(4), equipment such as low leg drains and equipment subject to the requirements of subpart H of this part are not subject to this paragraph (d).
 - (B) Open-ended valves or lines that use a cap, blind flange, plug, or second valve and follow the requirements specified in § 60.482-6(a)(2), (b), and (c) or follow requirements codified in another regulation that are the same as § 60.482-6(a)(2), (b), and (c) are not subject to this paragraph (d).
- (e) The owner or operator shall establish a range that indicates proper operation of the control device for each parameter monitored under paragraphs (a), (b), and (c) of this section. In order to establish the range, the information required in § 63.152(b)(2) of this subpart shall be submitted in the Notification of Compliance Status or the operating permit application or amendment.

[59 FR 19468, Apr. 22, 1994, as amended at 62 FR 2749, Jan. 17, 1997; 89 FR 43197, May 16, 2024]

§ 63.128 Transfer operations provisions—test methods and procedures.

- (a) A performance test is required for determining compliance with the reduction of total organic HAP emissions in § 63.126(b) of this subpart for all control devices except as specified in paragraph (c) of this section. Performance test procedures are as follows:
- (1) For control devices shared between transfer racks and process vents, the performance test procedures in § 63.116(c) of this subpart shall be followed.
 - (2) A performance test shall consist of three runs.
 - (3) All testing equipment shall be prepared and installed as specified in the appropriate test methods.
 - (4) For control devices shared between multiple arms that load simultaneously, the minimum sampling time for each run shall be 1 hour in which either an integrated sample or a minimum of four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time, such as 15-minute intervals during the run.
 - (5) For control devices that are capable of continuous vapor processing but do not meet the conditions in (a)(7)(i)(B) of this section.
 - (A) Sampling sites shall be located at the inlet and outlet of the control device, except as provided in paragraph (a)(7)(i)(B) of this section.
 - (B) If a vent stream is introduced with the combustion air or as a secondary fuel into a boiler or process heater with a design capacity less than 44 megawatts, selection of paragraph (a)(1) or (a)(4) of this section, each run shall represent at least one complete filling period, during which liquid organic HAP's are loaded, and samples shall be collected using integrated sampling or grab samples taken at least four times per hour at approximately equal intervals of time, such as 15-minute intervals.
 - (6) For intermittent vapor processing systems that do not meet the conditions in paragraph (a)(1) or (a)(4) of this section, each run shall represent at least one complete control device cycle, and samples shall be collected using integrated sampling or grab samples taken at least four times per hour at approximately equal intervals of time, such as 15-minute intervals.

- (7) Method 1 or 1A of 40 CFR part 60, appendix A, as appropriate, shall be used for selection of sampling sites.
 - (i) For an owner or operator complying with the 98-percent total organic HAP reduction requirements in § 63.126(b)(1) of this subpart, sampling sites shall be located as specified in paragraph (a)(7)(i)(A) or (a)(7)(i)(B) of this section.
 - (A) Sampling sites shall be located at the inlet and outlet of the control device, except as provided in paragraph (a)(7)(i)(B) of this section.
 - (B) If a vent stream is introduced with the combustion air or as a secondary fuel into a boiler or process heater with a design capacity less than 44 megawatts, selection of the location of the inlet sampling sites shall ensure the measurement of total organic HAP or TOC (minus methane and ethane) concentrations in all vent streams and primary and secondary fuels introduced into the boiler or process heater. A sampling site shall also be located at the outlet of the boiler or process heater.
 - (ii) For an owner or operator complying with the 20 parts per million by volume limit in § 63.126(b)(1) of this subpart, the sampling site shall be located at the outlet of the control device.
- (8) The volumetric flow rate, in standard cubic meters per minute at 20 °C, shall be determined using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A as appropriate.
- (9) For the purpose of determining compliance with the 20 parts per million by volume limit in § 63.126(b)(1), Method 18 or Method 25A of appendices A-6 and A-7 to part 60 of this chapter, respectively, shall be used to measure either organic compound concentration or organic HAP concentration, except as provided in paragraphs (a)(11) and (12) of this sec
 - (i) If Method 25A of appendix A-7 to part 60 of this chapter is used, the following procedures shall be used to calculate the concentration of organic compounds (C_T):
 - (A) The principal organic HAP in the vent stream shall be used as the calibration gas.
 - (B) The span value for Method 25A of appendix A-7 to part 60 of this chapter shall be between 1.5 and 2.5 times the concentration being measured.
 - (C) Use of Method 25A of appendix A-7 to part 60 of this chapter is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.
 - (D) The concentration of TOC shall be corrected to 3 percent oxygen using the procedures and equation in paragraph (a)(9)(v) of this section.
 - (ii) If Method 18 of appendix A-6 to 40 CFR part 60 is used to measure the concentration of organic compounds or ASTM D6420-18 (incorporated by reference, see § 63.14), the organic compound concentration (C_T) is the sum of the individual components and shall be computed for each run using the following equation:

Equation 1 to Paragraph (a)(9)(ii)

$$C_T = \sum_{j=1}^n C_j$$

Where:

C_T = Total concentration of organic compounds (minus methane and ethane), dry basis, parts per million by volume.

C_j = Concentration of sample components j , dry basis, parts per million by volume.

n = Number of components in the sample.

- (iii) If an owner or operator uses Method 18 of appendix A-6 to 40 CFR part 60 or ASTM D6420-18 (incorporated by reference, see § 63.14) to compute total organic HAP concentration rather than organic compounds concentration, the equation in paragraph (a)(9)(ii) of this section shall be used except that only organic HAP species shall be summed. The list of organic HAP's is provided in table 2 to subpart F of this part.
- (iv) Method 3A of appendix A-2 to 40 CFR part 60 or the manual method in ANSI/ASME PTC 19.10-1981 (incorporated by reference, see § 63.14) shall be used to determine the oxygen concentration. The sampling site shall be the same as that of the organic hazardous air pollutants or organic compound samples, and the samples shall be taken during the same time that the organic hazardous air pollutants or organic compound samples are taken.
- (v) The organic compound concentration corrected to 3 percent oxygen (C_c) shall be calculated using the following equation:

Equation 2 to Paragraph (a)(9)(v)

$$C_c = C_T \left(\frac{17.9}{20.9 - \%O_{2d}} \right)$$

Where:

C_c = Concentration of organic compounds corrected to 3 percent oxygen, dry basis, parts per million by volume.

C_T = Total concentration of organic compounds, dry basis, parts per million by volume.

$\%O_{2d}$ = Concentration of oxygen, dry basis, percent by volume.

- (10) For the purpose of determining compliance with the 98-percent reduction requirement in § 63.126(b)(1), Method 18 or Method 25A of appendices A-6 and A-7 to part 60 of this chapter, respectively, shall be used, except as provided in paragraphs (a)(11) and (12) of this section.

- (i) For the purpose of determining compliance with the reduction efficiency requirement, organic compound concentration may be measured in lieu of organic HAP concentration.
- (ii) If Method 25A of appendix A-7 to part 60 of this chapter is used to measure the concentration of organic compounds (C_T), the principal organic HAP in the vent stream shall be used as the calibration gas.
 - (A) An emission testing interval shall consist of each 15-minute period during the performance test. For each interval, a reading from each measurement shall be recorded.
 - (B) The average organic compound concentration and the volume measurement shall correspond to the same emissions testing interval.
 - (C) The mass at the inlet and outlet of the control device during each testing interval shall be calculated as follows:

Equation 3 to Paragraph (a)(10)(ii)(C)

$$M_j = FKVs C_T$$

Where:

M_j = Mass of organic compounds emitted during testing interval j , kilograms.

V_s = Volume of air-vapor mixture exhausted at standard conditions, 20 °C and 760 millimeters mercury, standard cubic meters.

C_T = Total concentration of organic compounds (as measured) at the exhaust vent, parts per million by volume, dry basis.

K = Density, kilograms per standard cubic meter organic HAP. 659 kilograms per standard cubic meter organic HAP. (Note: The density term cancels out when the percent reduction is calculated. Therefore, the density used has no effect. The density of hexane is given so that it can be used to maintain the units of M_j .)

$F = 10^{-6}$ = Conversion factor, (cubic meters organic HAP per cubic meters air) * (parts per million by volume)⁻¹.

- (D) The organic compound mass emission rates at the inlet and outlet of the control device shall be calculated as follows:

Equations 4 and 5 to Paragraph (a)(10)(ii)(D)

$$E_i = \frac{\sum_{j=1}^n M_{ij}}{T}$$

$$E_o = \frac{\sum_{j=1}^n M_{oj}}{T}$$

Where:

E_i , E_o = Mass flow rate of organic compounds at the inlet (i) and outlet (o) of the combustion or recovery device, kilograms per hour.

M_{ij} , M_{oj} = Mass of organic compounds at the inlet (i) or outlet (o) during testing interval j, kilograms.

T = Total time of all testing intervals, hours.

n = Number of testing intervals.

- (iii) If Method 18 of appendix A-6 to 40 CFR part 60 or ASTM D6420-18 (incorporated by reference, see § 63.14) is used to measure organic compounds, the mass rates of organic compounds (E_i , E_o) shall be computed using the following equations:

Equations 6 and 7 to Paragraph (a)(10)(iii)

$$E_i = K_2 \left(\sum_{j=1}^n C_{ij} MW_{ij} \right) Q_i$$

$$E_o = K_2 \left(\sum_{j=1}^n C_{oj} MW_{oj} \right) Q_o$$

Where:

C_{ij} , C_{oj} = Concentration of sample component j of the gas stream at the inlet and outlet of the control device, respectively, dry basis, parts per million by volume.

MW_{ij} , MW_{oj} = Molecular weight of sample component j of the gas stream at the inlet and outlet of the control device, respectively, gram/gram-mole.

Q_i , Q_o = Flow rate of gas stream at the inlet and outlet of the control device, respectively, dry standard cubic meter per minute.

K_2 = Constant, 2.494×10^{-6} (parts per million) $^{-1}$ (gram-mole per standard cubic meter) (kilogram/gram) (minute/hour), where standard temperature for (gram-mole per standard cubic meter) is 20 °C.

- (iv) Where Method 18 or 25A of appendices A-6 and A-7 to part 60 of this chapter, respectively, or ASTM D6420-18 (incorporated by reference, see § 63.14) is used to measure the percent reduction in organic compounds, the percent reduction across the control device shall be calculated as follows:

Equation 8 to Paragraph (a)(10)(iv)

$$R = \frac{E_i - E_o}{E_i} (100)$$

Where:

R = Control efficiency of control device, percent.

E_i = Mass emitted or mass flow rate of organic compounds at the inlet to the combustion or recovery device as calculated under paragraph (a)(10)(ii)(D) or (a)(10)(iii) of this section, kilogram per hour.

E_o = Mass emitted or mass flow rate of organic compounds at the outlet of the combustion or recovery device, as calculated under paragraph (a)(10)(ii)(D) or (a)(10)(iii) of this section, kilogram per hour.

- (11) The owner or operator may use any methods or data other than Method 18 or Method 25A of 40 CFR part 60, appendix A, if the method or data has been validated according to Method 301 of appendix A of this part.
- (12) ASTM D6420-18 (incorporated by reference, see § 63.14) may also be used in lieu of Method 18 of appendix A-6 to part 60 of this chapter, if the target compounds are all known and are all listed in section 1.1 of ASTM D6420-18 as measurable; ASTM D6420-18 must not be used for methane and ethane; and ASTM D6420-18 may not be used as a total VOC method.
- (b) Except as specified in § 63.108(a), when a flare is used to comply with § 63.126(b)(2), the owner or operator shall comply with paragraphs (b)(1) through (3) of this section. The owner or operator is not required to conduct a performance test to determine percent emission reduction or outlet organic HAP or TOC concentration.
- (1) Conduct a visible emission test using the techniques specified in § 63.11(b)(4). The observation period shall be as specified in paragraph (b)(1)(i) or (ii) of this section instead of the 2-hour period specified in § 63.11(b)(4).

- (i) If the loading cycle is less than 2 hours, then the observation period for that run shall be for the entire loading cycle.
 - (ii) If additional loading cycles are initiated within the 2-hour period, then visible emission observations shall be conducted for the additional cycles.
- (2) Determine the net heating value of the gas being combusted, using the techniques specified in § 63.11(b)(6).
- (3) Determine the exit velocity using the techniques specified in either § 63.11(b)(7)(i) (and § 63.11(b)(7)(iii), where applicable) or § 63.11(b)(8), as appropriate.
- (c) An owner or operator is not required to conduct a performance test when any of the conditions specified in paragraphs (c)(1) through (c)(7) of this section are met.
 - (1) When a boiler or process heater with a design heat input capacity of 44 megawatts or greater is used.
 - (2) When a boiler or process heater burning hazardous waste is used for which the owner or operator:
 - (i) Has been issued a final permit under part 270 of this chapter and complies with the requirements of part 266, subpart H, of this chapter;
 - (ii) Has certified compliance with the interim status requirements of part 266, subpart H, of this chapter;
 - (iii) Has submitted a Notification of Compliance under § 63.1207(j) and complies with the requirements of subpart EEE of this part; or
 - (iv) Complies with subpart EEE of this part and will submit a Notification of Compliance under § 63.1207(j) by the date the owner or operator would have been required to submit the initial performance test report for this subpart.
 - (3) When emissions are routed to a fuel gas system or when a boiler or process heater is used and the vent stream is introduced with the primary fuel.
 - (4) When a vapor balancing system is used.
 - (5) When emissions are recycled to a chemical manufacturing process unit.
 - (6) When a transfer rack transfers less than 11.8 million liters per year and the owner or operator complies with the requirements in paragraph (h) of this section or uses a flare to comply with § 63.126(b)(2) of this subpart.
 - (7) When a hazardous waste incinerator is used for which the owner or operator:
 - (i) Has been issued a final permit under part 270 of this chapter and complies with the requirements of part 264, subpart O, of this chapter;
 - (ii) Has certified compliance with the interim status requirements of part 265, subpart O, of this chapter;
 - (iii) Has submitted a Notification of Compliance under § 63.1207(j) and complies with the requirements subpart EEE of this part; or

- (iv) Complies with the requirements subpart EEE of this part and will submit a Notification of Compliance under § 63.1207(j) by the date the owner or operator would have been required to submit the initial performance test report for this subpart.
- (d) An owner or operator using a combustion device followed by a scrubber or other halogen reduction device to control a halogenated transfer vent stream in compliance with § 63.126(d) of this subpart shall conduct a performance test to determine compliance with the control efficiency or emission limits for hydrogen halides and halogens.
 - (1) For an owner or operator determining compliance with the percent reduction of total hydrogen halides and halogens, sampling sites shall be located at the inlet and outlet of the scrubber or other halogen reduction device used to reduce halogen emissions. For an owner or operator complying with the 0.45 kilogram per hour outlet mass emission rate limit for total hydrogen halides and halogens, the sampling site shall be located at the outlet of the scrubber or other halogen reduction device and prior to release to the atmosphere.
 - (2) Except as provided in paragraph (d)(5) of this section, Method 26 or 26A of 40 CFR part 60, appendix A, shall be used to determine the concentration in milligrams per dry standard cubic meter of the hydrogen halides and halogens that may be present in the stream. The mass emission rate of each hydrogen halide and halogen compound shall be calculated from the concentrations and the gas stream flow rate.
 - (3) To determine compliance with the percent emissions reduction limit, the mass emission rate for any hydrogen halides and halogens present at the scrubber inlet shall be summed together. The mass emission rate of the compounds present at the scrubber outlet shall be summed together. Percent reduction shall be determined by comparison of the summed inlet and outlet measurements.
 - (4) To demonstrate compliance with the 0.45 kilograms per hour mass emission rate limit, the test results must show that the mass emission rate of the total hydrogen halides and halogens measured at the scrubber outlet is below 0.45 kilograms per hour.
 - (5) The owner or operator may use any other method or data to demonstrate compliance if the method or data has been validated according to the protocol of Method 301 of appendix A of this part.
- (e) The owner or operator shall inspect the vapor collection system and vapor balancing system, according to the requirements for vapor collection systems in § 63.148 of this subpart.
 - (1) Inspections shall be performed only while a tank truck or railcar is being loaded.
 - (2) For vapor collection systems only, an inspection shall be performed prior to each performance test required to demonstrate compliance with § 63.126(b)(1) of this subpart.
 - (3) For each vapor collection system that is operated and maintained under negative pressure, the owner or operator is not required to comply with the requirements specified in § 63.148 of this subpart.
- (f) For the purposes of demonstrating vapor tightness to determine compliance with § 63.126(e)(2) of this subpart, the following procedures and equipment shall be used:
 - (1) The pressure test procedures specified in Method 27 of 40 CFR part 60, appendix A; and
 - (2) A pressure measurement device which has a precision of ± 2.5 millimeters of mercury or better and which is capable of measuring above the pressure at which the tank truck or railcar is to be tested for vapor tightness.

- (g) An owner or operator using a scrubber or other halogen reduction device to reduce the vent stream halogen atom mass emission rate to less than 0.45 kilograms per hour prior to a combustion device used to comply with § 63.126(d)(2) shall determine the halogen atom mass emission rate prior to the combustor according to the procedures in paragraph (d)(3) of this section.
- (h) For transfer racks that transfer less than 11.8 million liters per year of liquid organic HAP's, the owner or operator may comply with the requirements in paragraphs (h)(1) through (h)(3) of this section instead of the requirements in paragraph (a) or (b) of this section.
 - (1) The owner or operator shall prepare, as part of the Notification of Compliance Status required by § 63.152(b) of this subpart, a design evaluation that shall document that the control device being used achieves the required control efficiency during reasonably expected maximum loading conditions. This documentation is to include a description of the gas stream which enters the control device, including flow and organic HAP content, and the information specified in paragraphs (h)(1)(i) through (h)(1)(v) of this section, as applicable.
 - (i) If the control device receives vapors, gases, or liquids, other than fuels, from emission points other than transfer racks subject to this subpart, the efficiency demonstration is to include consideration of all vapors, gases, and liquids, other than fuels, received by the control device.
 - (ii) If an enclosed combustion device with a minimum residence time of 0.5 seconds and a minimum temperature of 760 degrees Celsius is used to meet the 98-percent emission reduction requirement, documentation that those conditions exist is sufficient to meet the requirements of paragraph (h)(1) of this section.
 - (iii) Except as provided in paragraph (h)(1)(ii) of this section, for thermal incinerators, the design evaluation shall include the autoignition temperature of the organic HAP, the flow rate of the organic HAP emission stream, the combustion temperature, and the residence time at the combustion temperature.
 - (iv) Except as provided in § 63.127(b)(4), for carbon adsorbers, the design evaluation shall include the affinity of the organic HAP vapors for carbon, the amount of carbon in each bed, the number of beds, the humidity of the feed gases, the temperature of the feed gases, the flow rate of the organic HAP emission stream, the desorption schedule, the regeneration stream pressure or temperature, and the flow rate of the regeneration stream. For vacuum desorption, pressure drop shall be included.
 - (v) For condensers, the design evaluation shall include the final temperature of the organic HAP vapors, the type of condenser, and the design flow rate of the organic HAP emission stream.
 - (2) The owner or operator shall submit, as part of the Notification of Compliance Status required by § 63.152(b) of this subpart, the operating range for each monitoring parameter identified for each control device. The specified operating range shall represent the conditions for which the control device can achieve the 98-percent-or-greater emission reduction required by § 63.126(b)(1) of this subpart.
 - (3) The owner or operator shall monitor the parameters specified in the Notification of Compliance Status required in § 63.152(b) of this subpart or operating permit and shall operate and maintain the control device such that the monitored parameters remain within the ranges specified in the Notification of Compliance Status, except as provided in §§ 63.152(c) and 63.152(f) of this subpart.

[59 FR 19468, Apr. 22, 1994, as amended at 61 FR 64576, Dec. 5, 1996; 62 FR 2750, Jan. 17, 1997; 66 FR 6932, Jan. 22, 2001; 89 FR 43198, May 16, 2024]

§ 63.129 Transfer operations provisions—reporting and recordkeeping for performance tests and notification of compliance status.

- (a) Each owner or operator of a Group 1 transfer rack shall:
- (1) Keep an up-to-date, readily accessible record of the data specified in paragraphs (a)(4) through (a)(8) of this section, as applicable.
 - (2) Include the data specified in paragraphs (a)(4) through (a)(7) of this section in the Notification of Compliance Status report as specified in § 63.152(b) of this subpart. If the performance test report is submitted electronically through the EPA's CEDRI in accordance with § 63.152(h), the process unit(s) tested, the pollutant(s) tested, and the date that such performance test was conducted may be submitted in the notification of compliance status report in lieu of the performance test results. The performance test results must be submitted to CEDRI by the date the notification of compliance status report is submitted.
 - (3) If any subsequent performance tests are conducted after the Notification of Compliance Status has been submitted, report the data in paragraphs (a)(4) through (a)(7) of this section in the next Periodic Report as specified in § 63.152(c) of this subpart.
 - (4) Record and report the following when using a control device other than a flare to achieve a 98 weight percent reduction in total organic HAP or a total organic HAP concentration of 20 parts per million by volume, as specified in § 63.126(b)(1) of this subpart:
 - (i) The parameter monitoring results for thermal incinerators, catalytic incinerators, boilers or process heaters, absorbers, condensers, or carbon adsorbers specified in table 7 of this subpart, recorded during the performance test, and averaged over the time period of the performance testing.
 - (ii) The percent reduction of total organic HAP or TOC achieved by the control device determined as specified in § 63.128(a) of this subpart, or the concentration of total organic HAP or TOC (parts per million by volume, by compound) determined as specified in § 63.128(a) of this subpart at the outlet of the control device. For combustion devices, the concentration shall be reported on a dry basis corrected to 3 percent oxygen.
 - (iii) The parameters shall be recorded at least every 15 minutes.
 - (iv) For a boiler or process heater, a description of the location at which the vent stream is introduced into the boiler or process heater.
 - (5) Except as specified in paragraph (a) of § 63.108, record and report the following when using a flare to comply with § 63.126(b)(2):
 - (i) Flare design (i.e., steam-assisted, air-assisted, or non-assisted);
 - (ii) All visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the compliance determination required by § 63.128(b) of this subpart; and
 - (iii) All periods during the compliance determination when the pilot flame is absent.

- (6) Record and report the following when using a scrubber following a combustion device to control a halogenated vent stream, as specified in § 63.126(d) of this subpart:
 - (i) The percent reduction or scrubber outlet mass emission rate of total hydrogen halides and halogens determined according to the procedures in § 63.128(d) of this subpart;
 - (ii) The parameter monitoring results for scrubbers specified in table 7 of this subpart, and averaged over the time period of the performance test; and
 - (iii) The parameters shall be recorded at least every 15 minutes.
- (7) Record and report the halogen concentration in the vent stream determined according to the procedures as specified in § 63.128(d) of this subpart.
- (8) Report that the emission stream is being routed to a fuel gas system or a process, when complying using § 63.126(b)(4).
- (b) If an owner or operator requests approval to use a control device other than those listed in table 7 of this subpart or to monitor a parameter other than those specified in table 7 of this subpart, the owner or operator shall submit a description of planned reporting and recordkeeping procedures as required under § 63.151(f) or § 63.152(e) of this subpart. The Administrator will specify appropriate reporting and recordkeeping requirements as part of the review of the permit application or by other appropriate means.
- (c) For each parameter monitored according to table 7 of this subpart or paragraph (b) of this section, the owner or operator shall establish a range for the parameter that indicates proper operation of the control device. In order to establish the range, the information required in § 63.152(b)(2) of this subpart shall be submitted in the Notification of Compliance Status or the operating permit application or amendment.
- (d) Each owner or operator shall maintain a record describing in detail the vent system used to vent each affected transfer vent stream to a control device. This document shall list all valves and vent pipes that could vent the stream to the atmosphere, thereby bypassing the control device; identify which valves are secured by car-seals or lock-and-key type configurations; and indicate the position (open or closed) of those valves which have car-seals. Except as specified in paragraph (d)(1) of this section, equipment leaks such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and pressure relief valves needed for safety purposes are not subject to this paragraph.
- (1) For each source as defined in § 63.101, on and after July 15, 2027, the last sentence in paragraph (d) of this section no longer applies. Instead, the exemptions specified in paragraph (d)(1)(i) and (d)(1)(ii) of this section apply.
 - (i) Except for pressure relief devices subject to § 63.165(e)(4) of subpart H of this part, equipment such as low leg drains and equipment subject to the requirements of subpart H of this part are not subject to this paragraph (d) of this section.
 - (ii) Open-ended valves or lines that use a cap, blind flange, plug, or second valve and follow the requirements specified in 40 CFR 60.482-6(a)(2), (b), and (c) or follow requirements codified in another regulation that are the same as 40 CFR 60.482-6(a)(2), (b), and (c) are not subject to this paragraph (d) of this section.
- (2) [Reserved]
- (e) An owner or operator meeting the requirements of § 63.128(h) of this subpart shall submit, as part of the Notification of Compliance Status required by § 63.152(b) of this subpart, the information specified in § 63.128(h)(1) of this subpart.

- (f) An owner or operator meeting the requirements of § 63.128(h) of this subpart shall submit, as part of the Notification of Compliance Status required by § 63.152(b) of this subpart, the operating range for each monitoring parameter identified for each control device.

[59 FR 19468, Apr. 22, 1994, as amended at 61 FR 64576, Dec. 5, 1996; 62 FR 2750, Jan. 17, 1997; 64 FR 20191, Apr. 26, 1999; 89 FR 43199, May 16, 2024]

§ 63.130 Transfer operations provisions—periodic recordkeeping and reporting.

- (a) Each owner or operator using a control device to comply with § 63.126(b)(1) or (b)(2) of this subpart shall keep the following up-to-date, readily accessible records:
 - (1) While the transfer vent stream is being vented to the control device, continuous records of the equipment operating parameters specified to be monitored under § 63.127, and listed in table 7 of this subpart or specified by the Administrator in accordance with §§ 63.127(c) and 63.129(b). For flares complying with § 63.11(b), the hourly records and records of pilot flame outages specified in table 7 shall be maintained in place of continuous records. For flares complying with § 63.108, the owner or operator must comply with the recordkeeping requirements specified therein.
 - (2) Records of the daily average value of each monitored parameter for each operating day determined according to the procedures specified in § 63.152(f), except as provided in paragraphs (a)(2)(i) through (a)(2)(iv) of this section.
 - (i) For flares, except as specified in paragraph (a) of § 63.108, records of the times and duration of all periods during which the pilot flame is absent shall be kept rather than daily averages.
 - (ii) If carbon adsorber regeneration stream flow and carbon bed regeneration temperature are monitored, the records specified in table 7 to this subpart shall be kept instead of the daily averages.
 - (iii) Except as specified in paragraph (a)(2)(iv) of this section, records of the duration of all periods when the vent stream is diverted through bypass lines shall be kept rather than daily averages.
 - (iv) For each flow event from a bypass line subject to the requirements in § 63.127(d) for each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), the owner or operator must also maintain records sufficient to determine whether or not the detected flow included flow requiring control. For each flow event from a bypass line requiring control that is released either directly to the atmosphere or to a control device not meeting the requirements in this subpart, the owner or operator must include an estimate of the volume of gas, the concentration of organic HAP in the gas and the resulting emissions of organic HAP that bypassed the control device using process knowledge and engineering estimates.
 - (3) For boilers or process heaters, records of any changes in the location at which the vent stream is introduced into the flame zone as required under the reduction of total organic HAP emissions in § 63.126(b)(1) of this subpart.
- (b) If a vapor collection system containing valves that could divert the emission stream away from the control device is used, each owner or operator of a Group 1 transfer rack subject to the provisions of § 63.127(d) shall keep up-to-date, readily accessible records of:

- (1) Hourly records of whether the flow indicator specified under § 63.127(d)(1) was operating and whether a diversion was detected at any time during the hour, as well as records of the times of all periods when the vent stream is diverted from the control device or the flow indicator is not operating.
- (2) Where a seal mechanism is used to comply with § 63.127(d)(2), hourly records of flow are not required. In such cases, the owner or operator shall record that the monthly visual inspection of the seals or closure mechanisms has been done, and shall record the occurrence of all periods when the seal mechanism is broken, the bypass line valve position has changed, or the key for a lock-and-key type lock has been checked out, and records of any car-seal that has broken, as listed in table 7 of this subpart.
- (3) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), the owner or operator must comply with this paragraph in addition to the requirements in paragraphs (b)(1) and (b)(2) of this section. For each flow event from a bypass line subject to the requirements in § 63.127(d), the owner or operator must maintain records sufficient to determine whether or not the detected flow included flow requiring control. For each flow event from a bypass line requiring control that is released either directly to the atmosphere or to a control device not meeting the requirements in this subpart, the owner or operator must include an estimate of the volume of gas, the concentration of organic HAP in the gas and the resulting emissions of organic HAP that bypassed the control device using process knowledge and engineering estimates.
- (c) Except as specified in paragraph (a) of § 63.108, each owner or operator of a Group 1 transfer rack who uses a flare to comply with § 63.126(b)(2) shall keep up-to-date, readily accessible records of the flare pilot flame monitoring specified under § 63.127(a)(2).
- (d) Each owner or operator of a transfer rack subject to the requirements of § 63.126 shall submit to the Administrator Periodic Reports of the following information according to the schedule in § 63.152(c):
 - (1) Reports of daily average values of monitored parameters for all operating days when the daily average values were outside the range established in the Notification of Compliance Status or operating permit. Additionally, report the identification of the transfer rack, the monitored parameter out of range, and the date of such occurrences.
 - (2) Reports of the start date and duration (in hours) of periods when monitoring data are not collected for each excursion caused by insufficient monitoring data as defined in § 63.152(c)(2)(ii)(A).
 - (3) Reports of the start date and time and duration (in hours) of all periods recorded under paragraph (b)(1) of this section when the vent stream was diverted from the control device, and if applicable, the information in paragraph (d)(7) of this section.
 - (4) Reports of the start date and time and duration (in hours) recorded under paragraph (b)(2) of this section when maintenance is performed on car-sealed valves, when the car seal is broken, when the bypass line valve position is changed, or the key for a lock-and-key type configuration has been checked out, and if applicable, the information in paragraph (d)(7) of this section.
 - (5) Except as specified in paragraph (a) of § 63.108, reports of the times and durations of all periods recorded under paragraph (a)(2)(i) of this section in which all pilot flames of a flare were absent.

- (6) Reports of all carbon bed regeneration cycles during which the parameters recorded under paragraph (a)(2)(ii) of this section were outside the ranges established in the Notification of Compliance Status or operating permit. Include the identification of the carbon bed, the monitored parameter that was outside the established range, and the start date, start time, and duration (in hours) for the regeneration cycle in the report.
- (7) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), the owner or operator must comply with this paragraph in addition to the requirements in paragraphs (d)(3) and (d)(4) of this section. For bypass lines subject to the requirements in § 63.127(d), the Periodic Report must include the start date, start time, duration in hours, estimate of the volume of gas in standard cubic feet, the concentration of organic HAP in the gas in parts per million by volume and the resulting mass emissions of organic HAP in pounds that bypass a control device. For periods when the flow indicator is not operating, report the start date, start time, and duration in hours.
- (e) The owner or operator of a Group 1 transfer rack shall record that the verification of DOT tank certification or Method 27 testing, required in § 63.126(e) of this subpart, has been performed. Various methods for the record of verification can be used, such as: A check off on a log sheet; a list of DOT serial numbers or Method 27 data; or a position description for gate security, showing that the security guard will not allow any trucks on site that do not have the appropriate documentation.
- (f) Each owner or operator of a Group 1 or Group 2 transfer rack shall record, update annually, and maintain the information specified in paragraphs (f)(1) through (f)(3) of this section in a readily accessible location on site:
 - (1) An analysis demonstrating the design and actual annual throughput of the transfer rack;
 - (2) An analysis documenting the weight-percent organic HAP's in the liquid loaded. Examples of acceptable documentation include but are not limited to analyses of the material and engineering calculations.
 - (3) An analysis documenting the annual rack weighted average HAP partial pressure of the transfer rack.
 - (i) For Group 2 transfer racks that are limited to transfer of organic HAP's with partial pressures less than 10.3 kilopascals, documentation is required of the organic HAP's (by compound) that are transferred. The rack weighted average partial pressure does not need to be calculated.
 - (ii) For racks transferring one or more organic HAP's with partial pressures greater than 10.3 kilopascals, as well as one or more organic HAP's with partial pressures less than 10.3 kilopascals, a rack weighted partial pressure shall be documented. The rack weighted average HAP partial pressure shall be weighted by the annual throughput of each chemical transferred.

[59 FR 19468, Apr. 22, 1994, as amended at 62 FR 2750, Jan. 17, 1997; 66 FR 6932, Jan. 22, 2001; 89 FR 43200, May 16, 2024]

§ 63.131 [Reserved]

§ 63.132 Process wastewater provisions—general.

- (a) **Existing sources.** This paragraph specifies the requirements applicable to process wastewater streams located at existing sources. The owner or operator shall comply with the requirements in paragraphs (a)(1) through (a)(3) of this section, no later than the applicable dates specified in § 63.100 of subpart F of this part.

- (1) **Determine wastewater streams to be controlled for Table 9 compounds.** Determine whether each wastewater stream requires control for Table 9 compounds by complying with the requirements in either paragraph (a)(1)(i) or (a)(1)(ii) of this section, and comply with the requirements in paragraph (a)(1)(iii) of this section.
 - (i) Comply with paragraph (c) of this section, determining whether the wastewater stream is Group 1 or Group 2 for Table 9 compounds; or
 - (ii) Comply with paragraph (e) of this section, designating the wastewater stream as a Group 1 wastewater stream.
 - (iii) Comply with paragraph (f) of this section.
- (2) **Requirements for Group 1 wastewater streams.** For wastewater streams that are Group 1 for Table 9 compounds, comply with paragraphs (a)(2)(i) through (a)(2)(iv) of this section.
 - (i) Comply with the applicable requirements for wastewater tanks, surface impoundments, containers, individual drain systems, and oil/water separators as specified in § 63.133 through § 63.137 of this subpart, except as provided in paragraphs (a)(2)(i)(A) through (a)(2)(i)(C) of this section and § 63.138(a)(3).
 - (A) Except as specified in paragraph (a)(2)(i)(C) of this section, the waste management units may be equipped with pressure relief devices that vent directly to the atmosphere provided the pressure relief device is not used for planned or routine venting of emissions.
 - (B) Except as specified in paragraph (a)(2)(i)(C) of this section, the pressure relief device remains in a closed position at all times except when it is necessary for the pressure relief device to open for the purpose of preventing physical damage or permanent deformation of the waste management unit in accordance with good engineering and safety practices.
 - (C) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), paragraphs (a)(2)(i)(A) and (a)(2)(i)(B) of this section do not apply. Instead, pressure relief devices are subject to the requirements specified in § 63.165(e) of subpart H of this part.
 - (ii) Comply with the applicable requirements for control of Table 9 compounds as specified in § 63.138 of this subpart. Alternatively, the owner or operator may elect to comply with the treatment provisions specified in § 63.132(g) of this subpart.
 - (iii) Comply with the applicable monitoring and inspection requirements specified in § 63.143 of this subpart.
 - (iv) Comply with the applicable recordkeeping and reporting requirements specified in §§ 63.146 and 63.147 of this subpart.
- (3) **Requirements for Group 2 wastewater streams.** For wastewater streams that are Group 2 for table 9 compounds, comply with the applicable recordkeeping and reporting requirements specified in §§ 63.146(b)(1) and 63.147(b)(8).
- (b) **New sources.** This paragraph specifies the requirements applicable to process wastewater streams located at new sources. The owner or operator shall comply with the requirements in paragraphs (b)(1) through (b)(4) of this section, no later than the applicable dates specified in § 63.100 of subpart F of this part.

- (1) **Determine wastewater streams to be controlled for Table 8 compounds.** Determine whether each wastewater stream requires control for Table 8 compounds by complying with the requirements in either paragraph (b)(1)(i) or (b)(1)(ii) of this section, and comply with the requirements in paragraph (b)(1)(iii) of this section.
 - (i) Comply with paragraph (d) of this section, determining whether the wastewater stream is Group 1 or Group 2 for Table 8 compounds; or
 - (ii) Comply with paragraph (e) of this section, designating the wastewater stream as a Group 1 wastewater stream for Table 8 compounds.
 - (iii) Comply with paragraph (f) of this section.
- (2) **Determine wastewater streams to be controlled for Table 9 compounds.** Determine whether each wastewater stream requires control for Table 9 compounds by complying with the requirements in either paragraph (b)(2)(i) or (b)(2)(ii) of this section, and comply with the requirements in paragraph (b)(2)(iii) of this section.
 - (i) Comply with paragraph (c) of this section, determining whether the wastewater stream is Group 1 or Group 2 for Table 9 compounds; or
 - (ii) Comply with paragraph (e) of this section, designating the wastewater stream as a Group 1 wastewater stream.
 - (iii) Comply with paragraph (f) of this section.
- (3) **Requirements for Group 1 wastewater streams.** For wastewater streams that are Group 1 for Table 8 compounds and/or Table 9 compounds, comply with paragraphs (b)(3)(i) through (b)(3)(iv) of this section.
 - (i) Comply with the applicable requirements for wastewater tanks, surface impoundments, containers, individual drain systems, and oil/water separators specified in the requirements of § 63.133 through § 63.137 of this subpart, except as provided in paragraphs (b)(3)(i)(A) through (b)(3)(i)(C) of this section and § 63.138(a)(3) of this subpart.
 - (A) Except as specified in paragraph (b)(3)(i)(C) of this section, the waste management units may be equipped with pressure relief devices that vent directly to the atmosphere provided the pressure relief device is not used for planned or routine venting of emissions.
 - (B) Except as specified in paragraph (b)(3)(i)(C) of this section, the pressure relief device remains in a closed position at all times except when it is necessary for the pressure relief device to open for the purpose of preventing physical damage or permanent deformation of the waste management unit in accordance with good engineering and safety practices.
 - (C) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), paragraphs (b)(3)(i)(A) and (b)(3)(i)(B) of this section do not apply. Instead, pressure relief devices are subject to the requirements specified in § 63.165(e).
 - (ii) Comply with the applicable requirements for control of Table 8 compounds specified in § 63.138 of this subpart. Alternatively, the owner or operator may elect to comply with the provisions specified in § 63.132(g) of this subpart.

- (iii) Comply with the applicable monitoring and inspection requirements specified in § 63.143 of this subpart.
- (iv) Comply with the applicable recordkeeping and reporting requirements specified in §§ 63.146 and 63.147 of this subpart.

(4) **Requirements for Group 2 wastewater streams.** For wastewater streams that are Group 2 for both table 8 and table 9 compounds, comply with the applicable recordkeeping and reporting requirements specified in §§ 63.146(b)(1) and 63.147(b)(8).

(c) **How to determine Group 1 or Group 2 status for Table 9 compounds.** This paragraph provides instructions for determining whether a wastewater stream is Group 1 or Group 2 for Table 9 compounds. Total annual average concentration shall be determined according to the procedures specified in § 63.144(b) of this subpart. Annual average flow rate shall be determined according to the procedures specified in § 63.144(c) of this subpart.

(1) A wastewater stream is a Group 1 wastewater stream for Table 9 compounds if:

- (i) The total annual average concentration of Table 9 compounds is greater than or equal to 10,000 parts per million by weight at any flow rate;
- (ii) The total annual average concentration of Table 9 compounds is greater than or equal to 1,000 parts per million by weight and the annual average flow rate is greater than or equal to 10 liters per minute; or
- (iii) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(11), the process wastewater stream contains ethylene oxide such that it is considered to be in ethylene oxide service, as defined in § 63.101.

(2) A wastewater stream is a Group 2 wastewater stream for Table 9 compounds if it is not a Group 1 wastewater stream for Table 9 compounds by the criteria in paragraph (c)(1) of this section.

(3) The owner or operator of a Group 2 wastewater shall re-determine group status for each Group 2 stream, as necessary, to determine whether the stream is Group 1 or Group 2 whenever process changes are made that could reasonably be expected to change the stream to a Group 1 stream. Examples of process changes include, but are not limited to, changes in production capacity, production rate, feedstock type, or whenever there is a replacement, removal, or addition of recovery or control equipment. For purposes of this paragraph (c)(3), process changes do not include: Process upsets; unintentional, temporary process changes; and changes that are within the range on which the original determination was based.

(d) **How to determine Group 1 or Group 2 status for Table 8 compounds.** This paragraph provides instructions for determining whether a wastewater stream is Group 1 or Group 2 for Table 8 compounds. Annual average concentration for each Table 8 compound shall be determined according to the procedures specified in § 63.144(b). Annual average flow rate shall be determined according to the procedures specified in § 63.144(c).

(1) A wastewater stream is a Group 1 wastewater stream for Table 8 compounds if:

- (i) The annual average flow rate is 0.02 liter per minute or greater and the annual average concentration of any individual table 8 compound is 10 parts per million by weight or greater; or

- (ii) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(11), the process wastewater stream contains ethylene oxide such that it is considered to be in ethylene oxide service, as defined in § 63.101.
- (2) A wastewater stream is a Group 2 wastewater stream for Table 8 compounds if it does not meet the criteria specified in paragraph (d)(1)(ii) of this section, and the annual average flow rate is less than 0.02 liter per minute or the annual average concentration for each individual Table 8 compound is less than 10 parts per million by weight.
- (3) The owner or operator of a Group 2 wastewater shall re-determine group status for each Group 2 stream, as necessary, to determine whether the stream is Group 1 or Group 2 whenever process changes are made that could reasonably be expected to change the stream to a Group 1 stream. Examples of process changes include, but are not limited to, changes in production capacity, production rate, feedstock type, or whenever there is a replacement, removal, or addition of recovery or control equipment. For purposes of this paragraph (d)(3), process changes do not include: Process upsets; unintentional, temporary process changes; and changes that are within the range on which the original determination was based.
- (e) **How to designate a Group 1 wastewater stream.** The owner or operator may elect to designate a wastewater stream a Group 1 wastewater stream in order to comply with paragraph (a)(1) or (b)(1) of this section. To designate a wastewater stream or a mixture of wastewater streams a Group 1 wastewater stream, the procedures specified in paragraphs (e)(1) and (e)(2) of this section and § 63.144(a)(2) of this subpart shall be followed.
 - (1) From the point of determination for each wastewater stream that is included in the Group 1 designation to the location where the owner or operator elects to designate such wastewater stream(s) as a Group 1 wastewater stream, the owner or operator shall comply with all applicable emission suppression requirements specified in §§ 63.133 through 63.137.
 - (2) From the location where the owner or operator designates a wastewater stream or mixture of wastewater streams to be a Group 1 wastewater stream, such Group 1 wastewater stream shall be managed in accordance with all applicable emission suppression requirements specified in §§ 63.133 through 63.137 and with the treatment requirements in § 63.138 of this part.
- (f) Owners or operators of sources subject to this subpart shall not discard liquid or solid organic materials with a concentration of greater than 10,000 parts per million of Table 9 compounds (as determined by analysis of the stream composition, engineering calculations, or process knowledge, according to the provisions of § 63.144(b) of this subpart) from a chemical manufacturing process unit to water or wastewater, unless the receiving stream is managed and treated as a Group 1 wastewater stream. This prohibition does not apply to materials from the activities listed in paragraphs (f)(1) through (f)(4) of this section.
 - (1) Equipment leaks;
 - (2) Except as specified in paragraph (f)(5) of this sections, activities included in maintenance or startup/shutdown/malfunction plans;
 - (3) Spills; or
 - (4) Samples of a size not greater than reasonably necessary for the method of analysis that is used.
 - (5) For each source as defined in § 63.101, on and after July 15, 2027, the phrase “or startup/shutdown/malfunction” in paragraph (f)(2) of this section does not apply.

(g) *Off-site treatment or on-site treatment not owned or operated by the source.* The owner or operator may elect to transfer a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream to an on-site treatment operation not owned or operated by the owner or operator of the source generating the wastewater stream or residual, or to an off-site treatment operation.

(1) The owner or operator transferring the wastewater stream or residual shall:

(i) Comply with the provisions specified in §§ 63.133 through 63.137 of this subpart for each waste management unit that receives or manages a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream prior to shipment or transport.

(ii) Include a notice with the shipment or transport of each Group 1 wastewater stream or residual removed from a Group 1 wastewater stream. The notice shall state that the wastewater stream or residual contains organic hazardous air pollutants that are to be treated in accordance with the provisions of this subpart. When the transport is continuous or ongoing (for example, discharge to a publicly-owned treatment works), the notice shall be submitted to the treatment operator initially and whenever there is a change in the required treatment.

(2) The owner or operator may not transfer the wastewater stream or residual unless the transferee has submitted to the EPA a written certification that the transferee will manage and treat any Group 1 wastewater stream or residual removed from a Group 1 wastewater stream received from a source subject to the requirements of this subpart in accordance with the requirements of either §§ 63.133 through 63.147, or § 63.102(b) of subpart F, or subpart D of this part if alternative emission limitations have been granted the transferor in accordance with those provisions. The certifying entity may revoke the written certification by sending a written statement to the EPA and the owner or operator giving at least 90 days notice that the certifying entity is rescinding acceptance of responsibility for compliance with the regulatory provisions listed in this paragraph. Upon expiration of the notice period, the owner or operator may not transfer the wastewater stream or residual to the treatment operation.

(3) By providing this written certification to the EPA, the certifying entity accepts responsibility for compliance with the regulatory provisions listed in paragraph (g)(2) of this section with respect to any shipment of wastewater or residual covered by the written certification. Failure to abide by any of those provisions with respect to such shipments may result in enforcement action by the EPA against the certifying entity in accordance with the enforcement provisions applicable to violations of these provisions by owners or operators of sources.

(4) Written certifications and revocation statements, to the EPA from the transferees of wastewater or residuals shall be signed by the responsible official of the certifying entity, provide the name and address of the certifying entity, and be sent to the appropriate EPA Regional Office at the addresses listed in 40 CFR 63.13. Such written certifications are not transferable by the treater.

[62 FR 2751, Jan. 17, 1997, as amended at 66 FR 6933, Jan. 22, 2001; 71 FR 76614, Dec. 21, 2006; 89 FR 43201, May 16, 2024]

§ 63.133 Process wastewater provisions—wastewater tanks.

(a) For each wastewater tank that receives, manages, or treats a Group 1 wastewater stream or a residual removed from a Group 1 wastewater stream, the owner or operator shall comply with the requirements of either paragraph (a)(1) or (a)(2) of this section as specified in table 10 of this subpart.

- (1) The owner or operator shall operate and maintain a fixed roof except that if the wastewater tank is used for heating wastewater, or treating by means of an exothermic reaction or the contents of the tank is sparged, the owner or operator shall comply with the requirements specified in paragraph (a)(2) of this section.
- (2) The owner or operator shall comply with the requirements in paragraphs (b) through (h) of this section and shall operate and maintain one of the emission control techniques listed in paragraphs (a)(2)(i) through (a)(2)(iv) of this section.
 - (i) A fixed roof and a closed vent system that routes the organic hazardous air pollutants vapors vented from the wastewater tank to a control device.
 - (ii) A fixed roof and an internal floating roof that meets the requirements specified in § 63.119(b) of this subpart;
 - (iii) An external floating roof that meets the requirements specified in §§ 63.119(c), 63.120(b)(5), and 63.120(b)(6) of this subpart; or
 - (iv) An equivalent means of emission limitation. Determination of equivalence to the reduction in emissions achieved by the requirements of paragraphs (a)(2)(i) through (a)(2)(iii) of this section will be evaluated according to § 63.102(b) of subpart F of this part. The determination will be based on the application to the Administrator which shall include the information specified in either paragraph (a)(2)(iv)(A) or (a)(2)(iv)(B) of this section.
 - (A) Actual emissions tests that use full-size or scale-model wastewater tanks that accurately collect and measure all organic hazardous air pollutants emissions from a given control technique, and that accurately simulate wind and account for other emission variables such as temperature and barometric pressure, or
 - (B) An engineering evaluation that the Administrator determines is an accurate method of determining equivalence.
- (b) If the owner or operator elects to comply with the requirements of paragraph (a)(2)(i) of this section, the fixed roof shall meet the requirements of paragraph (b)(1) of this section, the control device shall meet the requirements of paragraph (b)(2) of this section, and the closed vent system shall meet the requirements of paragraph (b)(3) of this section.
 - (1) The fixed-roof shall meet the following requirements:
 - (i) Except as provided in paragraph (b)(4) of this section, the fixed roof and all openings (e.g., access hatches, sampling ports, and gauge wells) shall be maintained in accordance with the requirements specified in § 63.148 of this subpart.
 - (ii) Each opening shall be maintained in a closed position (e.g., covered by a lid) at all times that the wastewater tank contains a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream except when it is necessary to use the opening for wastewater sampling, removal, or for equipment inspection, maintenance, or repair.
 - (2) The control device shall be designed, operated, and inspected in accordance with the requirements of § 63.139 of this subpart.
 - (3) Except as provided in paragraph (b)(4) of this section, the closed vent system shall be inspected in accordance with the requirements of § 63.148.

- (4) For any fixed roof tank and closed vent system that is operated and maintained under negative pressure, the owner or operator is not required to comply with the requirements specified in § 63.148.
- (c) If the owner or operator elects to comply with the requirements of paragraph (a)(2)(ii) of this section, the floating roof shall be inspected according to the procedures specified in § 63.120(a)(2) and (a)(3) of this subpart.
- (d) Except as provided in paragraph (e) of this section, if the owner or operator elects to comply with the requirements of paragraph (a)(2)(iii) of this section, seal gaps shall be measured according to the procedures specified in § 63.120(b)(2)(i) through (b)(4) of this subpart and the wastewater tank shall be inspected to determine compliance with § 63.120(b)(5) and (b)(6) of this subpart.
- (e) If the owner or operator determines that it is unsafe to perform the seal gap measurements specified in § 63.120(b)(2)(i) through (b)(4) of this subpart or to inspect the wastewater tank to determine compliance with § 63.120(b)(5) and (b)(6) of this subpart because the floating roof appears to be structurally unsound and poses an imminent or potential danger to inspecting personnel, the owner or operator shall comply with the requirements in either paragraph (e)(1) or (e)(2) of this section.
 - (1) The owner or operator shall measure the seal gaps or inspect the wastewater tank within 30 calendar days of the determination that the floating roof is unsafe, or
 - (2) The owner or operator shall empty and remove the wastewater tank from service within 45 calendar days of determining that the roof is unsafe. If the wastewater tank cannot be emptied within 45 calendar days, the owner or operator may utilize up to two extensions of up to 30 additional calendar days each. Documentation of a decision to utilize an extension shall include an explanation of why it was unsafe to perform the inspection or seal gap measurement, shall document that alternate storage capacity is unavailable, and shall specify a schedule of actions that will ensure that the wastewater tank will be emptied as soon as practical.
- (f) Except as provided in paragraph (e) of this section, each wastewater tank shall be inspected initially, and semi-annually thereafter, for improper work practices in accordance with § 63.143 of this subpart. For wastewater tanks, improper work practice includes, but is not limited to, leaving open any access door or other opening when such door or opening is not in use.
- (g) Except as provided in paragraph (e) of this section, each wastewater tank shall be inspected for control equipment failures as defined in paragraph (g)(1) of this section according to the schedule in paragraphs (g)(2) and (g)(3) of this section.
 - (1) Control equipment failures for wastewater tanks include, but are not limited to, the conditions specified in paragraphs (g)(1)(i) through (g)(1)(ix) of this section.
 - (i) The floating roof is not resting on either the surface of the liquid or on the leg supports.
 - (ii) There is stored liquid on the floating roof.
 - (iii) A rim seal is detached from the floating roof.
 - (iv) There are holes, tears, cracks or gaps in the rim seal or seal fabric of the floating roof.
 - (v) There are visible gaps between the seal of an internal floating roof and the wall of the wastewater tank.

- (vi) There are gaps between the metallic shoe seal or the liquid mounted primary seal of an external floating roof and the wall of the wastewater tank that exceed 212 square centimeters per meter of tank diameter or the width of any portion of any gap between the primary seal and the tank wall exceeds 3.81 centimeters.
- (vii) There are gaps between the secondary seal of an external floating roof and the wall of the wastewater tank that exceed 21.2 square centimeters per meter of tank diameter or the width of any portion of any gap between the secondary seal and the tank wall exceeds 1.27 centimeters.
- (viii) Where a metallic shoe seal is used on an external floating roof, one end of the metallic shoe does not extend into the stored liquid or one end of the metallic shoe does not extend a minimum vertical distance of 61 centimeters above the surface of the stored liquid.
- (ix) A gasket, joint, lid, cover, or door has a crack or gap, or is broken.

(2) The owner or operator shall inspect for the control equipment failures in paragraphs (g)(1)(i) through (g)(1)(viii) of this section according to the schedule specified in paragraphs (c) and (d) of this section.

(3) The owner or operator shall inspect for the control equipment failures in paragraph (g)(1)(ix) of this section initially, and semi-annually thereafter.

(h) Except as provided in § 63.140 of this subpart, when an improper work practice or a control equipment failure is identified, first efforts at repair shall be made no later than 5 calendar days after identification and repair shall be completed within 45 calendar days after identification. If a failure that is detected during inspections required by this section cannot be repaired within 45 calendar days and if the vessel cannot be emptied within 45 calendar days, the owner or operator may utilize up to 2 extensions of up to 30 additional calendar days each. Documentation of a decision to utilize an extension shall include a description of the failure, shall document that alternate storage capacity is unavailable, and shall specify a schedule of actions that will ensure that the control equipment will be repaired or the vessel will be emptied as soon as practical.

[62 FR 2753, Jan. 17, 1997, as amended at 64 FR 20191, Apr. 26, 1999; 89 FR 43202, May 16, 2024]

§ 63.134 Process wastewater provisions—surface impoundments.

- (a) For each surface impoundment that receives, manages, or treats a Group 1 wastewater stream or a residual removed from a Group 1 wastewater stream, the owner or operator shall comply with the requirements of paragraphs (b), (c), and (d) of this section.
- (b) The owner or operator shall operate and maintain on each surface impoundment either a cover (e.g., air-supported structure or rigid cover) and a closed vent system that routes the organic hazardous air pollutants vapors vented from the surface impoundment to a control device in accordance with paragraph (b)(1) of this section, or a floating flexible membrane cover as specified in paragraph (b)(2) of this section.
 - (1) The cover and all openings shall meet the following requirements:
 - (i) Except as provided in paragraph (b)(4) of this section, the cover and all openings (e.g., access hatches, sampling ports, and gauge wells) shall be maintained in accordance with the requirements specified in § 63.148 of this subpart.

- (ii) Each opening shall be maintained in a closed position (e.g., covered by a lid) at all times that a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream is in the surface impoundment except when it is necessary to use the opening for sampling, removal, or for equipment inspection, maintenance, or repair.
 - (iii) The cover shall be used at all times that a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream is in the surface impoundment except during removal of treatment residuals in accordance with 40 CFR 268.4 or closure of the surface impoundment in accordance with 40 CFR 264.228.
- (2) Floating flexible membrane covers shall meet the requirements specified in paragraphs (b)(2)(i) through (b)(2)(vii) of this section.
 - (i) The floating flexible cover shall be designed to float on the liquid surface during normal operations, and to form a continuous barrier over the entire surface area of the liquid.
 - (ii) The cover shall be fabricated from a synthetic membrane material that is either:
 - (A) High density polyethylene (HDPE) with a thickness no less than 2.5 millimeters (100 mils); or
 - (B) A material or a composite of different materials determined to have both organic permeability properties that are equivalent to those of the material listed in paragraph (b)(2)(ii)(A) of this section, and chemical and physical properties that maintain the material integrity for the intended service life of the material.
 - (iii) The cover shall be installed in a manner such that there are no visible cracks, holes, gaps, or other open spaces between cover section seams or between the interface of the cover edge and its foundation mountings.
 - (iv) Except as provided for in paragraph (b)(2)(v) of this section, each opening in the floating membrane cover shall be equipped with a closure device designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device.
 - (v) The floating membrane cover may be equipped with one or more emergency cover drains for removal of stormwater. Each emergency cover drain shall be equipped with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening or a flexible fabric sleeve seal.
 - (vi) The closure devices shall be made of suitable materials that will minimize exposure of organic hazardous air pollutants to the atmosphere, to the extent practical, and will maintain the integrity of the equipment throughout its intended service life. Factors to be considered in designing the closure devices shall include: The effects of any contact with the liquid and its vapor managed in the surface impoundment; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the surface impoundment on which the floating membrane cover is installed.
 - (vii) Whenever a Group 1 wastewater stream or residual from a Group 1 wastewater stream is in the surface impoundment, the floating membrane cover shall float on the liquid and each closure device shall be secured in the closed position. Opening of closure devices or removal of the cover is allowed to provide access to the surface impoundment for performing routine

inspection, maintenance, or other activities needed for normal operations and/or to remove accumulated sludge or other residues from the bottom of surface impoundment. Openings shall be maintained in accordance with § 63.148 of this subpart.

- (3) The control device shall be designed, operated, and inspected in accordance with § 63.139 of this subpart.
- (4) Except as provided in paragraph (b)(5) of this section, the closed vent system shall be inspected in accordance with § 63.148.
- (5) For any cover and closed vent system that is operated and maintained under negative pressure, the owner or operator is not required to comply with the requirements specified in § 63.148.
- (c) Each surface impoundment shall be inspected initially, and semi-annually thereafter, for improper work practices and control equipment failures in accordance with § 63.143 of this subpart.
 - (1) For surface impoundments, improper work practice includes, but is not limited to, leaving open any access hatch or other opening when such hatch or opening is not in use.
 - (2) For surface impoundments, control equipment failure includes, but is not limited to, any time a joint, lid, cover, or door has a crack or gap, or is broken.
- (d) Except as provided in § 63.140 of this subpart, when an improper work practice or a control equipment failure is identified, first efforts at repair shall be made no later than 5 calendar days after identification and repair shall be completed within 45 calendar days after identification.

[62 FR 2754, Jan. 17, 1997, as amended at 64 FR 20191, Apr. 26, 1999; 89 FR 43202, May 16, 2024]

§ 63.135 Process wastewater provisions—containers.

- (a) For each container that receives, manages, or treats a Group 1 wastewater stream or a residual removed from a Group 1 wastewater stream, the owner or operator shall comply with the requirements of paragraphs (b) through (f) of this section.
- (b) The owner or operator shall operate and maintain a cover on each container used to handle, transfer, or store a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream in accordance with the following requirements:
 - (1) Except as provided in paragraph (d)(4) of this section, if the capacity of the container is greater than 0.42 m³, the cover and all openings (e.g., bungs, hatches, sampling ports, and pressure relief devices) shall be maintained in accordance with the requirements specified in § 63.148 of this subpart.
 - (2) If the capacity of the container is less than or equal to 0.42 m³, the owner or operator shall comply with either paragraph (b)(2)(i) or (b)(2)(ii) of this section.
 - (i) The container must meet existing Department of Transportation specifications and testing requirements under 49 CFR part 178; or
 - (ii) Except as provided in paragraph (d)(4) of this section, the cover and all openings shall be maintained without leaks as specified in § 63.148 of this subpart.

- (3) Except as specified in paragraph (b)(4) of this section, the cover and all openings shall be maintained in a closed position (e.g., covered by a lid) at all times that a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream is in the container except when it is necessary to use the opening for filling, removal, inspection, sampling, or pressure relief events related to safety considerations.
- (4) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), pressure relief devices are subject to the requirements specified in § 63.165(e) of subpart H of this part.
- (c) For containers with a capacity greater than or equal to 0.42 m³, a submerged fill pipe shall be used when a container is being filled by pumping with a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream.
 - (1) The submerged fill pipe outlet shall extend to no more than 6 inches or within two fill pipe diameters of the bottom of the container while the container is being filled.
 - (2) The cover shall remain in place and all openings shall be maintained in a closed position except for those openings required for the submerged fill pipe and for venting of the container to prevent physical damage or permanent deformation of the container or cover.
- (d) During treatment of a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream, including aeration, thermal or other treatment, in a container, whenever it is necessary for the container to be open, the container shall be located within an enclosure with a closed vent system that routes the organic hazardous air pollutants vapors vented from the container to a control device.
 - (1) Except as provided in paragraph (d)(4) of this section, the enclosure and all openings (e.g., doors, hatches) shall be maintained in accordance with the requirements specified in § 63.148 of this subpart.
 - (2) The control device shall be designed, operated, and inspected in accordance with § 63.139 of this subpart.
 - (3) Except as provided in paragraph (d)(4) of this section, the closed vent system shall be inspected in accordance with § 63.148 of this subpart.
 - (4) For any enclosure and closed vent system that is operated and maintained under negative pressure, the owner or operator is not required to comply with the requirements specified in § 63.148 of this subpart.
- (e) Each container shall be inspected initially, and semi-annually thereafter, for improper work practices and control equipment failures in accordance with § 63.143 of this subpart.
 - (1) For containers, improper work practice includes, but is not limited to, leaving open any access hatch or other opening when such hatch or opening is not in use.
 - (2) For containers, control equipment failure includes, but is not limited to, any time a cover or door has a gap or crack, or is broken.
- (f) Except as provided in § 63.140 of this subpart, when an improper work practice or a control equipment failure is identified, first efforts at repair shall be made no later than 5 calendar days after identification and repair shall be completed within 15 calendar days after identification.

[62 FR 2755, Jan. 17, 1997, as amended at 89 FR 43202, May 16, 2024]

§ 63.136 Process wastewater provisions—individual drain systems.

- (a) For each individual drain system that receives or manages a Group 1 wastewater stream or a residual removed from a Group 1 wastewater stream, the owner or operator shall comply with the requirements of paragraphs (b), (c), and (d) or with paragraphs (e), (f), and (g) of this section.
- (b) If the owner or operator elects to comply with this paragraph, the owner or operator shall operate and maintain on each opening in the individual drain system a cover and if vented, route the vapors to a process or through a closed vent system to a control device. The owner or operator shall comply with the requirements of paragraphs (b)(1) through (b)(5) of this section.
 - (1) The cover and all openings shall meet the following requirements:
 - (i) Except as provided in paragraph (b)(4) of this section, the cover and all openings (e.g., access hatches, sampling ports) shall be maintained in accordance with the requirements specified in § 63.148 of this subpart.
 - (ii) The cover and all openings shall be maintained in a closed position at all times that a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream is in the drain system except when it is necessary to use the opening for sampling or removal, or for equipment inspection, maintenance, or repair.
 - (2) The control device shall be designed, operated, and inspected in accordance with § 63.139 of this subpart.
 - (3) Except as provided in paragraph (b)(4) of this section, the closed vent system shall be inspected in accordance with § 63.148.
 - (4) For any cover and closed vent system that is operated and maintained under negative pressure, the owner or operator is not required to comply with the requirements specified in § 63.148.
 - (5) The individual drain system shall be designed and operated to segregate the vapors within the system from other drain systems and the atmosphere.
- (c) Each individual drain system shall be inspected initially, and semi- annually thereafter, for improper work practices and control equipment failures, in accordance with the inspection requirements specified in table 11 of this subpart.
 - (1) For individual drain systems, improper work practice includes, but is not limited to, leaving open any access hatch or other opening when such hatch or opening is not in use for sampling or removal, or for equipment inspection, maintenance, or repair.
 - (2) For individual drain systems, control equipment failure includes, but is not limited to, any time a joint, lid, cover, or door has a gap or crack, or is broken.
- (d) Except as provided in § 63.140 of this subpart, when an improper work practice or a control equipment failure is identified, first efforts at repair shall be made no later than 5 calendar days after identification and repair shall be completed within 15 calendar days after identification.
- (e) If the owner or operator elects to comply with this paragraph, the owner or operator shall comply with the requirements in paragraphs (e)(1) through (e)(3) of this section:
 - (1) Each drain shall be equipped with water seal controls or a tightly fitting cap or plug. The owner or operator shall comply with paragraphs (e)(1)(i) and (e)(1)(ii) of this section.

- (i) For each drain equipped with a water seal, the owner or operator shall ensure that the water seal is maintained. For example, a flow-monitoring device indicating positive flow from a main to a branch water line supplying a trap or water being continuously dripped into the trap by a hose could be used to verify flow of water to the trap. Visual observation is also an acceptable alternative.
 - (ii) If a water seal is used on a drain receiving a Group 1 wastewater, the owner or operator shall either extend the pipe discharging the wastewater below the liquid surface in the water seal of the receiving drain, or install a flexible shield (or other enclosure which restricts wind motion across the open area between the pipe and the drain) that encloses the space between the pipe discharging the wastewater to the drain receiving the wastewater. (Water seals which are used on hubs receiving Group 2 wastewater for the purpose of eliminating cross ventilation to drains carrying Group 1 wastewater are not required to have a flexible cap or extended subsurface discharging pipe.)
- (2) Each junction box shall be equipped with a tightly fitting solid cover (i.e., no visible gaps, cracks, or holes) which shall be kept in place at all times except during inspection and maintenance. If the junction box is vented, the owner or operator shall comply with the requirements in paragraph (e)(2)(i) or (e)(2)(ii) of this section.
- (i) The junction box shall be vented to a process or through a closed vent system to a control device. The closed vent system shall be inspected in accordance with the requirements of § 63.148 and the control device shall be designed, operated, and inspected in accordance with the requirements of § 63.139.
 - (ii) If the junction box is filled and emptied by gravity flow (i.e., there is no pump) or is operated with no more than slight fluctuations in the liquid level, the owner or operator may vent the junction box to the atmosphere provided that the junction box complies with the requirements in paragraphs (e)(2)(ii)(A) and (e)(2)(ii)(B) of this section.
 - (A) The vent pipe shall be at least 90 centimeters in length and no greater than 10.2 centimeters in nominal inside diameter.
 - (B) Water seals shall be installed and maintained at the wastewater entrance(s) to or exit from the junction box restricting ventilation in the individual drain system and between components in the individual drain system. The owner or operator shall demonstrate (e.g., by visual inspection or smoke test) upon request by the Administrator that the junction box water seal is properly designed and restricts ventilation.
- (3) Each sewer line shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visible gaps or cracks in joints, seals, or other emission interfaces.
- (f) Equipment used to comply with paragraphs (e)(1), (e)(2), or (e)(3) of this section shall be inspected as follows:
- (1) Each drain using a tightly fitting cap or plug shall be visually inspected initially, and semi-annually thereafter, to ensure caps or plugs are in place and that there are no gaps, cracks, or other holes in the cap or plug.
 - (2) Each junction box shall be visually inspected initially, and semi-annually thereafter, to ensure that there are no gaps, cracks, or other holes in the cover.

- (3) The unburied portion of each sewer line shall be visually inspected initially, and semi-annually thereafter, for indication of cracks or gaps that could result in air emissions.
- (g) Except as provided in § 63.140 of this subpart, when a gap, hole, or crack is identified in a joint or cover, first efforts at repair shall be made no later than 5 calendar days after identification, and repair shall be completed within 15 calendar days after identification.

[62 FR 2755, Jan. 17, 1997, as amended at 89 FR 43202, May 16, 2024]

§ 63.137 Process wastewater provisions—oil-water separators.

- (a) For each oil-water separator that receives, manages, or treats a Group 1 wastewater stream or a residual removed from a Group 1 wastewater stream, the owner or operator shall comply with the requirements of paragraphs (c) and (d) of this section and shall operate and maintain one of the following:
 - (1) A fixed roof and a closed vent system that routes the organic hazardous air pollutants vapors vented from the oil-water separator to a control device. The fixed roof, closed vent system, and control device shall meet the requirements specified in paragraph (b) of this section;
 - (2) A floating roof meeting the requirements in 40 CFR part 60, subpart QQQ § 60.693-2 (a)(1)(i), (a)(1)(ii), (a)(2), (a)(3), and (a)(4). For portions of the oil-water separator where it is infeasible to construct and operate a floating roof, such as over the weir mechanism, the owner or operator shall operate and maintain a fixed roof, closed vent system, and control device that meet the requirements specified in paragraph (b) of this section.
 - (3) An equivalent means of emission limitation. Determination of equivalence to the reduction in emissions achieved by the requirements of paragraphs (a)(1) and (a)(2) of this section will be evaluated according to § 63.102(b) of subpart F of this part. The determination will be based on the application to the Administrator which shall include the information specified in either paragraph (a)(3)(i) or (a)(3)(ii) of this section.
 - (i) Actual emissions tests that use full-size or scale-model oil-water separators that accurately collect and measure all organic hazardous air pollutants emissions from a given control technique, and that accurately simulate wind and account for other emission variables such as temperature and barometric pressure, or
 - (ii) An engineering evaluation that the Administrator determines is an accurate method of determining equivalence.
- (b) If the owner or operator elects to comply with the requirements of paragraphs (a)(1) or (a)(2) of this section, the fixed roof shall meet the requirements of paragraph (b)(1) of this section, the control device shall meet the requirements of paragraph (b)(2) of this section, and the closed vent system shall meet the requirements of paragraph (b)(3) of this section.
 - (1) The fixed-roof shall meet the following requirements:
 - (i) Except as provided in paragraph (b)(4) of this section, the fixed roof and all openings (e.g., access hatches, sampling ports, and gauge wells) shall be maintained in accordance with the requirements specified in § 63.148 of this subpart.

- (ii) Each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that the oil-water separator contains a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream except when it is necessary to use the opening for sampling or removal, or for equipment inspection, maintenance, or repair.
- (2) The control device shall be designed, operated, and inspected in accordance with the requirements of § 63.139 of this subpart.
- (3) Except as provided in paragraph (b)(4) of this section, the closed vent system shall be inspected in accordance with the requirements of § 63.148.
- (4) For any fixed roof and closed vent system that is operated and maintained under negative pressure, the owner or operator is not required to comply with the requirements of § 63.148.
- (c) If the owner or operator elects to comply with the requirements of paragraph (a)(2) of this section, seal gaps shall be measured according to the procedures specified in 40 CFR part 60, subpart QQQ § 60.696(d)(1) and the schedule specified in paragraphs (c)(1) and (c)(2) of this section.
 - (1) Measurement of primary seal gaps shall be performed within 60 calendar days after installation of the floating roof and introduction of a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream and once every 5 years thereafter.
 - (2) Measurement of secondary seal gaps shall be performed within 60 calendar days after installation of the floating roof and introduction of a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream and once every year thereafter.
- (d) Each oil-water separator shall be inspected initially, and semi-annually thereafter, for improper work practices in accordance with § 63.143 of this subpart. For oil-water separators, improper work practice includes, but is not limited to, leaving open or ungasketed any access door or other opening when such door or opening is not in use.
- (e) Each oil-water separator shall be inspected for control equipment failures as defined in paragraph (e)(1) of this section according to the schedule specified in paragraphs (e)(2) and (e)(3) of this section.
 - (1) For oil-water separators, control equipment failure includes, but is not limited to, the conditions specified in paragraphs (e)(1)(i) through (e)(1)(vii) of this section.
 - (i) The floating roof is not resting on either the surface of the liquid or on the leg supports.
 - (ii) There is stored liquid on the floating roof.
 - (iii) A rim seal is detached from the floating roof.
 - (iv) There are holes, tears, or other open spaces in the rim seal or seal fabric of the floating roof.
 - (v) There are gaps between the primary seal and the separator wall that exceed 67 square centimeters per meter of separator wall perimeter or the width of any portion of any gap between the primary seal and the separator wall exceeds 3.8 centimeters.
 - (vi) There are gaps between the secondary seal and the separator wall that exceed 6.7 square centimeters per meter of separator wall perimeter or the width of any portion of any gap between the secondary seal and the separator wall exceeds 1.3 centimeters.
 - (vii) A gasket, joint, lid, cover, or door has a gap or crack, or is broken.

- (2) The owner or operator shall inspect for the control equipment failures in paragraphs (e)(1)(i) through (e)(1)(vi) of this section according to the schedule specified in paragraph (c) of this section.
- (3) The owner or operator shall inspect for control equipment failures in paragraph (e)(1)(vii) of this section initially, and semi-annually thereafter.
- (f) Except as provided in § 63.140 of this subpart, when an improper work practice or a control equipment failure is identified, first efforts at repair shall be made no later than 5 calendar days after identification and repair shall be completed within 45 calendar days after identification.

[62 FR 2756, Jan. 17, 1997, as amended at 89 FR 43202, May 16, 2024]

§ 63.138 Process wastewater provisions—performance standards for treatment processes managing Group 1 wastewater streams and/or residuals removed from Group 1 wastewater streams.

- (a) **General requirements.** This section specifies the performance standards for treating Group 1 wastewater streams. The owner or operator shall comply with the requirements as specified in paragraphs (a)(1) through (a)(6) of this section. Where multiple compliance options are provided, the options may be used in combination for different wastewater streams and/or for different compounds (e.g., Table 8 versus Table 9 compounds) in the same wastewater streams, except where otherwise provided in this section. Once a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream has been treated in accordance with this subpart, it is no longer subject to the requirements of this subpart.
 - (1) **Existing source.** If the wastewater stream, at an existing source, is Group 1 for Table 9 compounds, comply with § 63.138(b).
 - (2) **New source.** If the wastewater stream, at a new source, is Group 1 for Table 8 compounds, comply with § 63.138(c). If the wastewater stream, at a new source, is Group 1 for Table 9 compounds, comply with § 63.138(b). If the wastewater stream, at a new source, is Group 1 for Table 8 and Table 9 compounds, comply with both § 63.138(b) and § 63.138(c).

Note to paragraph (a)(2): The requirements for Table 8 and/or Table 9 compounds are similar and often identical.

- (3) **Biological treatment processes.** Biological treatment processes in compliance with this section may be either open or closed biological treatment processes as defined in § 63.111. An open biological treatment process in compliance with this section need not be covered and vented to a control device as required in § 63.133 through § 63.137 of this subpart. An open or a closed biological treatment process in compliance with this section and using § 63.145(f) or § 63.145(g) of this subpart to demonstrate compliance is not subject to the requirements of § 63.133 through § 63.137 of this subpart. A closed biological treatment process in compliance with this section and using § 63.145(e) of this subpart to demonstrate compliance shall comply with the requirements of § 63.133 through § 63.137 of this subpart. Waste management units upstream of an open or closed biological treatment process shall meet the requirements of § 63.133 through § 63.137 of this subpart, as applicable.
- (4) **Performance tests and design evaluations.** If design steam stripper option (§ 63.138(d)) or Resource Conservation and Recovery Act (RCRA) option (§ 63.138(h)) is selected to comply with this section, neither a design evaluation nor a performance test is required. For any other non-biological

treatment process, and for closed biological treatment processes as defined in § 63.111 of this subpart, the owner or operator shall conduct either a design evaluation as specified in § 63.138(j), or a performance test as specified in § 63.145, of this subpart. For each open biological treatment process as defined in § 63.111 of this subpart, the owner or operator shall conduct a performance test as specified in § 63.145 of this subpart.

Note to paragraph (a)(4): Some open biological treatment processes may not require a performance test. Refer to § 63.145(h) and table 36 of this subpart to determine whether the biological treatment process meets the criteria that exempt the owner or operator from conducting a performance test.

- (5) **Control device requirements.** When gases are vented from the treatment process, the owner or operator shall comply with the applicable control device requirements specified in § 63.139 and § 63.145 (i) and (j), and the applicable leak inspection provisions specified in § 63.148, of this subpart. This requirement does not apply to any open biological treatment process that meets the mass removal requirements. Vents from anaerobic biological treatment processes may be routed through hard-piping to a fuel gas system.
- (6) **Residuals: general.** When residuals result from treating Group 1 wastewater streams, the owner or operator shall comply with the requirements for residuals specified in § 63.138(k) of this subpart.
- (7) **Treatment using a series of treatment processes.** In all cases where the wastewater provisions in this subpart allow or require the use of a treatment process or control device to comply with emissions limitations, the owner or operator may use multiple treatment processes or control devices, respectively. For combinations of treatment processes where the wastewater stream is conveyed by hard-piping, the owner or operator shall comply with either the requirements of paragraph (a)(7)(i) or (a)(7)(ii) of this section. For combinations of treatment processes where the wastewater stream is not conveyed by hard-piping, the owner or operator shall comply with the requirements of paragraph (a)(7)(ii) of this section. For combinations of control devices, the owner or operator shall comply with the requirements of paragraph (a)(7)(i) of this section.
 - (i)
 - (A) For combinations of treatment processes, the wastewater stream shall be conveyed by hard-piping between the treatment processes. For combinations of control devices, the vented gas stream shall be conveyed by hard-piping between the control devices.
 - (B) For combinations of treatment processes, each treatment process shall meet the applicable requirements of § 63.133 through § 63.137 of this subpart except as provided in paragraph (a)(3) of this section.
 - (C) The owner or operator shall identify, and keep a record of, the combination of treatment processes or of control devices, including identification of the first and last treatment process or control device. The owner or operator shall include this information as part of the treatment process description reported in the Notification of Compliance Status.
 - (D) The performance test or design evaluation shall determine compliance across the combination of treatment processes or control devices. If a performance test is conducted, the "inlet" shall be the point at which the wastewater stream or residual enters

the first treatment process, or the vented gas stream enters the first control device. The "outlet" shall be the point at which the treated wastewater stream exits the last treatment process, or the vented gas stream exits the last control device.

(ii)

- (A) For combinations of treatment processes, each treatment process shall meet the applicable requirements of § 63.133 through § 63.137 of this subpart except as provided in paragraph (a)(3) of this section.
- (B) The owner or operator shall identify, and keep a record of, the combination of treatment processes, including identification of the first and last treatment process. The owner or operator shall include this information as part of the treatment process description reported in the Notification of Compliance Status.
- (C) The owner or operator shall determine the mass removed or destroyed by each treatment process. The performance test or design evaluation shall determine compliance for the combination of treatment processes by adding together the mass removed or destroyed by each treatment process.

(b) **Control options: Group 1 wastewater streams for Table 9 compounds.** The owner or operator shall comply with either paragraph (b)(1) or (b)(2) of this section, and paragraph (b)(3) of this section, if applicable, for the control of Table 9 compounds at new or existing sources.

- (1) **50 ppmw concentration option.** The owner or operator shall comply with paragraphs (b)(1)(i) and (b)(1)(ii) of this section.
 - (i) Reduce, by removal or destruction, the total concentration of Table 9 compounds to a level less than 50 parts per million by weight as determined by the procedures specified in § 63.145(b) of this subpart.
 - (ii) This option shall not be used when the treatment process is a biological treatment process. This option shall not be used when the wastewater stream is designated as a Group 1 wastewater stream as specified in § 63.132(e). Dilution shall not be used to achieve compliance with this option.
- (2) **Other compliance options.** Comply with the requirements specified in any one of paragraphs (d), (e), (f), (g), (h), or (i) of this section.
- (3) **1 ppmw ethylene oxide concentration.** Reduce, by removal or destruction, the concentration of ethylene oxide to a level less than 1 parts per million by weight as determined in the procedures specified in § 63.145(b) of this subpart.

(c) **Control options: Group 1 wastewater streams for Table 8 compounds.** The owner or operator shall comply with either paragraph (c)(1) or (c)(2) of this section, and paragraph (c)(3) of this section, if applicable, for the control of Table 8 compounds at new sources.

- (1) **10 ppmw concentration option.** The owner or operator shall comply with paragraphs (c)(1)(i) and (c)(1)(ii) of this section.
 - (i) Reduce, by removal or destruction, the concentration of the individual Table 8 compounds to a level less than 10 parts per million by weight as determined in the procedures specified in § 63.145(b) of this subpart.

- (ii) This option shall not be used when the treatment process is a biological treatment process. This option shall not be used when the wastewater stream is designated as a Group 1 wastewater stream as specified in § 63.132(e). Dilution shall not be used to achieve compliance with this option.
- (2) **Other compliance options.** Comply with the requirements specified in any one of paragraphs (d), (e), (f), (g), (h), or (i) of this section.
- (3) **1 ppmw ethylene oxide concentration.** Reduce, by removal or destruction, the concentration of ethylene oxide to a level less than 1 parts per million by weight as determined in the procedures specified in § 63.145(b).
- (d) **Design steam stripper option.** The owner or operator shall operate and maintain a steam stripper that meets the requirements of paragraphs (d)(1) through (d)(6) of this section.
 - (1) Minimum active column height of 5 meters,
 - (2) Countercurrent flow configuration with a minimum of 10 actual trays,
 - (3) Minimum steam flow rate of 0.04 kilograms of steam per liter of wastewater feed within the column,
 - (4) Minimum wastewater feed temperature to the steam stripper of 95 °C, or minimum column operating temperature of 95 °C,
 - (5) Maximum liquid loading of 67,100 liters per hour per square meter, and
 - (6) Operate at nominal atmospheric pressure.
- (e) **Percent mass removal/destruction option.** The owner or operator of a new or existing source shall comply with paragraph (e)(1) or (e)(2) of this section for control of Table 8 and/or Table 9 compounds for Group 1 wastewater streams. This option shall not be used for biological treatment processes.
 - (1) **Reduce mass flow rate of Table 8 and/or Table 9 compounds by 99 percent.** For wastewater streams that are Group 1, the owner or operator shall reduce, by removal or destruction, the mass flow rate of Table 8 and/or Table 9 compounds by 99 percent or more. The removal/destruction efficiency shall be determined by the procedures specified in § 63.145(c), for noncombustion processes, or § 63.145(d), for combustion processes.
 - (2) **Reduce mass flow rate of Table 8 and/or Table 9 compounds by Fr value.** For wastewater streams that are Group 1 for Table 8 and/or Table 9 compounds, the owner or operator shall reduce, by removal or destruction, the mass flow rate by at least the fraction removal (Fr) values specified in Table 9 of this subpart. (The Fr values for Table 8 compounds are all 0.99.) The removal/destruction efficiency shall be determined by the procedures specified in § 63.145(c), for noncombustion treatment processes, or § 63.145(d), for combustion treatment processes.
- (f) **Required mass removal (RMR) option.** The owner or operator shall achieve the required mass removal (RMR) of Table 8 compounds at a new source for a wastewater stream that is Group 1 for Table 8 compounds and/or of Table 9 compounds at a new or existing source for a wastewater stream that is Group 1 for Table 9 compounds. For nonbiological treatment processes compliance shall be determined using the procedures specified in § 63.145(e) of this subpart. For aerobic biological treatment processes compliance shall be determined using the procedures specified in § 63.145 (e) or (f) of this subpart. For closed anaerobic biological treatment processes compliance shall be determined using the procedures specified in § 63.145(e) of this subpart. For open biological treatment processes compliance shall be determined using the procedures specified in § 63.145(f) of this subpart.

(g) **95-percent RMR option, for biological treatment processes.** The owner or operator of a new or existing source using biological treatment for at least one wastewater stream that is Group 1 for Table 9 compounds shall achieve a RMR of at least 95 percent for all Table 9 compounds. The owner or operator of a new source using biological treatment for at least one wastewater stream that is Group 1 for Table 8 compounds shall achieve a RMR of at least 95 percent for all Table 8 compounds. All Group 1 and Group 2 wastewater streams entering a biological treatment unit that are from chemical manufacturing process units subject to subpart F shall be included in the demonstration of the 95-percent mass removal. The owner or operator shall comply with paragraphs (g)(1) through (g)(4) of this section.

- (1) Except as provided in paragraph (g)(4) of this section, the owner or operator shall ensure that all Group 1 and Group 2 wastewater streams from chemical manufacturing process units subject to this rule entering a biological treatment unit are treated to destroy at least 95-percent total mass of all Table 8 and/or Table 9 compounds.
- (2) For open biological treatment processes compliance shall be determined using the procedures specified in § 63.145(g) of this subpart. For closed aerobic biological treatment processes compliance shall be determined using the procedures specified in § 63.145 (e) or (g) of this subpart. For closed anaerobic biological treatment processes compliance shall be determined using the procedures specified in § 63.145(e) of this subpart.
- (3) For each treatment process or waste management unit that receives, manages, or treats wastewater streams subject to this paragraph, from the point of determination of each Group 1 or Group 2 wastewater stream to the biological treatment unit, the owner or operator shall comply with §§ 63.133 through § 63.137 of this subpart for control of air emissions. When complying with this paragraph, the term Group 1, whether used alone or in combination with other terms, in § 63.133 through § 63.137 of this subpart shall mean both Group 1 and Group 2.
- (4) If a wastewater stream is in compliance with the requirements in paragraph (b)(1), (c)(1), (d), (e), (f), or (h) of this section before entering the biological treatment unit, the hazardous air pollutants mass of that wastewater is not required to be included in the total mass flow rate entering the biological treatment unit for the purpose of demonstrating compliance.

(h) **Treatment in a RCRA unit option.** The owner or operator shall treat the wastewater stream or residual in a unit identified in, and complying with, paragraph (h)(1), (h)(2), or (h)(3) of this section. These units are exempt from the design evaluation or performance tests requirements specified in § 63.138(a)(3) and § 63.138(j) of this subpart, and from the monitoring requirements specified in § 63.132(a)(2)(iii) and § 63.132(b)(3)(iii) of this subpart, as well as recordkeeping and reporting requirements associated with monitoring and performance tests.

- (1) The wastewater stream or residual is discharged to a hazardous waste incinerator for which the owner or operator:
 - (i) Has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 264, subpart O;
 - (ii) Has certified compliance with the interim status requirements of 40 CFR part 265, subpart O;
 - (iii) Has submitted a Notification of Compliance under § 63.1207(j) and complies with the requirements subpart EEE of this part; or

- (iv) Complies with the requirements subpart EEE of this part and will submit a Notification of Compliance under § 63.1207(j) by the date the owner or operator would have been required to submit the initial performance test report for this subpart.
- (2) The wastewater stream or residual is discharged to a process heater or boiler burning hazardous waste for which the owner or operator:
 - (i) Has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 266, subpart H;
 - (ii) Has certified compliance with the interim status requirements of 40 CFR part 266, subpart H;
 - (iii) Has submitted a Notification of Compliance under § 63.1207(j) and complies with the requirements of subpart EEE of this part; or
 - (iv) Complies with subpart EEE of this part and will submit a Notification of Compliance under § 63.1207(j) by the date the owner or operator would have been required to submit the initial performance test report for this subpart.
- (3) The wastewater stream or residual is discharged to an underground injection well for which the owner or operator has been issued a final permit under 40 CFR part 270 or 40 CFR part 144 and complies with the requirements of 40 CFR part 122. The owner or operator shall comply with all applicable requirements of this subpart prior to the point where the wastewater enters the underground portion of the injection well.
- (i) **One megagram total source mass flow rate option.** A wastewater stream is exempt from the requirements of paragraphs (b) and (c) of this section if the owner or operator elects to comply with either paragraph (i)(1) or (2) of this section, and complies with paragraph (i)(3) of this section.
- (1) **All Group 1 wastewater streams at the source.** The owner or operator shall demonstrate that the total source mass flow rate for Table 8 and/or Table 9 compounds is less than 1 megagram per year using the procedures in paragraphs (i)(1)(i) and (i)(1)(ii) of this section. The owner or operator shall include all Group 1 wastewater streams at the source in the total source mass flow rate. The total source mass flow rate shall be based on the mass as calculated before the wastewater stream is treated. The owner or operator who meets the requirements of this paragraph (i)(1) is exempt from the requirements of §§ 63.133 through 63.137.
 - (i) Calculate the annual average mass flow rate for each Group 1 wastewater stream by multiplying the annual average flow rate of the wastewater stream, as determined by procedures specified in § 63.144(c), times the total annual average concentration of Table 8 and/or Table 9 compounds, as determined by procedures specified in § 63.144(b) of this subpart. (The mass flow rate of compounds in a wastewater stream that is Group 1 for both Table 8 and Table 9 compounds should be included in the annual average mass flow rate only once.)
 - (ii) Calculate the total source mass flow rate from all Group 1 wastewater streams by adding together the annual average mass flow rate calculated for each Group 1 wastewater stream.
- (2) **Untreated and partially treated Group 1 wastewater streams.** The owner or operator shall demonstrate that the total source mass flow rate for untreated Group 1 wastewater streams and Group 1 wastewater streams treated to levels less stringent than required in paragraph (b) or (c) of this

section is less than 1 megagram per year using the procedures in paragraphs (i)(2)(i) and (i)(2)(ii) of this section. The owner or operator shall manage these wastewater streams in accordance with paragraph (i)(2)(iii) of this section, and shall comply with paragraph (i)(3) of this section.

- (i) Calculate the annual average mass flow rate in each wastewater stream by multiplying the annual average flow rate of the wastewater stream, as determined by procedures specified in § 63.144(c), times the total annual average concentration of Table 8 and/or Table 9 compounds, as determined by procedures specified in § 63.144(b). (The mass flow rate of compounds in a wastewater stream that are Group 1 for both Table 8 and Table 9 compounds should be included in the annual average mass flow rate only once.) When determining the total source mass flow rate for the purposes of paragraph (i)(2)(i)(B) of this section, the concentration and flow rate shall be determined at the location specified in paragraph (i)(2)(i)(B) of this section and not at the location specified in § 63.144(b) and (c).
 - (A) For each untreated Group 1 wastewater stream, the annual average flow rate and the total annual average concentration shall be determined for that stream's point of determination.
 - (B) For each Group 1 wastewater stream that is treated to levels less stringent than those required by paragraph (b) or (c) of this section, the annual average flow rate and total annual average concentration shall be determined at the discharge from the treatment process or series of treatment processes.
 - (C) The annual average mass flow rate for Group 1 wastewater streams treated to the levels required by paragraph (b) or (c) of this section is not included in the calculation of the total source mass flow rate.
 - (ii) The total source mass flow rate shall be calculated by summing the annual average mass flow rates from all Group 1 wastewater streams, except those excluded by paragraph (i)(2)(i)(C) of this section.
 - (iii) The owner or operator of each waste management unit that receives, manages, or treats a partially treated wastewater stream prior to or during treatment shall comply with the requirements of §§ 63.133 through 63.137, as applicable. For a partially treated wastewater stream that is stored, conveyed, treated, or managed in a waste management unit meeting the requirements of §§ 63.133 through 63.137, the owner or operator shall follow the procedures in paragraph (i)(2)(i)(B) of this section to calculate mass flow rate. A wastewater stream, either untreated or partially treated, where the mass flow rate has been calculated following the procedures in paragraph (i)(2)(i)(A) of this section, is exempt from the requirements of §§ 63.133 through 63.137.
- (3) Wastewater streams included in this option shall be identified in the Notification of Compliance Status required by § 63.152(b).
- (j) **Design evaluations or performance tests for treatment processes.** Except as provided in paragraph (j)(3) or (h) of this section, the owner or operator shall demonstrate by the procedures in either paragraph (j)(1) or (j)(2) of this section that each nonbiological treatment process used to comply with paragraphs (b)(1), (c)(1), (e), and/or (f) of this section achieves the conditions specified for compliance. The owner or operator shall demonstrate by the procedures in either paragraph (j)(1) or (j)(2) of this section that each closed biological treatment process used to comply with paragraphs (f) or (g) of this section achieves the conditions specified for compliance. If an open biological treatment unit is used to comply with paragraph (f) or (g) of this section, the owner or operator shall comply with § 63.145(f) or § 63.145(g), respectively,

of this subpart. Some biological treatment processes may not require a performance test. Refer to § 63.145(h) and table 36 of this subpart to determine whether the open biological treatment process meets the criteria that exempt the owner or operator from conducting a performance test.

- (1) A design evaluation and supporting documentation that addresses the operating characteristics of the treatment process and that is based on operation at a representative wastewater stream flow rate and a concentration under which it would be most difficult to demonstrate compliance. For closed biological treatment processes, the actual mass removal shall be determined by a mass balance over the unit. The mass flow rate of Table 8 or Table 9 compounds exiting the treatment process shall be the sum of the mass flow rate of Table 8 or Table 9 compounds in the wastewater stream exiting the biological treatment process and the mass flow rate of the vented gas stream exiting the control device. The mass flow rate entering the treatment process minus the mass flow rate exiting the process determines the actual mass removal.
- (2) Performance tests conducted using test methods and procedures that meet the applicable requirements specified in § 63.145 of this subpart.
- (3) The provisions of paragraphs (j)(1) and (j)(2) of this section do not apply to design stream strippers which meet the requirements of paragraph (d) of this section.
- (k) **Residuals.** For each residual removed from a Group 1 wastewater stream, the owner or operator shall control for air emissions by complying with §§ 63.133-137 of this subpart and by complying with one of the provisions in paragraphs (k)(1) through (k)(4) of this section.
 - (1) Recycle the residual to a production process or sell the residual for the purpose of recycling. Once a residual is returned to a production process, the residual is no longer subject to this section.
 - (2) Return the residual to the treatment process.
 - (3) Treat the residual to destroy the total combined mass flow rate of Table 8 and/or Table 9 compounds by 99 percent or more, as determined by the procedures specified in § 63.145(c) or (d) of this subpart.
 - (4) Comply with the requirements for RCRA treatment options specified in § 63.138(h) of this subpart.

[62 FR 2757, Jan. 17, 1997, as amended at 66 FR 6933, Jan. 22, 2001; 89 FR 43202, May 16, 2024]

§ 63.139 Process wastewater provisions—control devices.

- (a) For each control device or combination of control devices used to comply with the provisions in §§ 63.133 through 63.138 of this subpart, the owner or operator shall operate and maintain the control device or combination of control devices in accordance with the requirements of paragraphs (b) through (f) of this section.
- (b) Whenever organic hazardous air pollutants emissions are vented to a control device which is used to comply with the provisions of this subpart, such control device shall be operating.
- (c) The control device shall be designed and operated in accordance with paragraph (c)(1), (2), (3), (4), or (5) of this section.

- (1) An enclosed combustion device (including but not limited to a vapor incinerator, boiler, or process heater) shall meet the conditions in paragraph (c)(1)(i), (ii), or (iii) of this section, alone or in combination with other control devices. If a boiler or process heater is used as the control device, then the vent stream shall be introduced into the flame zone of the boiler or process heater.
 - (i) Reduce the total organic compound emissions, less methane and ethane, or total organic hazardous air pollutants emissions vented to the control device by 95 percent by weight or greater;
 - (ii) Achieve an outlet total organic compound concentration, less methane and ethane, or total organic hazardous air pollutants concentration of 20 parts per million by volume on a dry basis corrected to 3 percent oxygen. The owner or operator shall use either Method 18 of appendix A-6 to part 60 of this chapter, any other method or data that has been validated according to the applicable procedures in Method 301 of appendix A of this part, or ASTM D6420-18 (incorporated by reference, see § 63.14) may also be used in lieu of Method 18, if the target compounds are all known and are all listed in Section 1.1 of ASTM D6420-18 as measurable; ASTM D6420-18 must not be used for methane and ethane; and ASTM D6420-18 may not be used as a total VOC method; or
 - (iii) Provide a minimum residence time of 0.5 seconds at a minimum temperature of 760 °C.
 - (2) A vapor recovery system (including but not limited to a carbon adsorption system or condenser), alone or in combination with other control devices, shall reduce the total organic compound emissions, less methane and ethane, or total organic hazardous air pollutants emissions vented to the control device of 95 percent by weight or greater or achieve an outlet total organic compound concentration, less methane and ethane, or total organic hazardous air pollutants concentration of 20 parts per million by volume. The 20 parts per million by volume performance standard is not applicable to compliance with the provisions of § 63.134 or § 63.135.
 - (3) Except as specified in paragraph (a) of § 63.108, a flare shall comply with the requirements of § 63.11(b).
 - (4) A scrubber, alone or in combination with other control devices, shall reduce the total organic compound emissions, less methane and ethane, or total organic hazardous air pollutants emissions in such a manner that 95 weight-percent is either removed, or destroyed by chemical reaction with the scrubbing liquid or achieve an outlet total organic compound concentration, less methane and ethane, or total organic hazardous air pollutants concentration of 20 parts per million by volume. The 20 parts per million by volume performance standard is not applicable to compliance with the provisions of § 63.134 or § 63.135.
 - (5) Any other control device used shall, alone or in combination with other control devices, reduce the total organic compound emissions, less methane and ethane, or total organic hazardous air pollutants emissions vented to the control device by 95 percent by weight or greater or achieve an outlet total organic compound concentration, less methane and ethane, or total organic hazardous air pollutants concentration of 20 parts per million by volume. The 20 parts per million by volume performance standard is not applicable to compliance with the provisions of § 63.134 or § 63.135.
- (d) Except as provided in paragraphs (d)(4) and (5) of this section, an owner or operator shall demonstrate that each control device or combination of control devices achieves the appropriate conditions specified in paragraph (c) of this section by using one or more of the methods specified in paragraphs (d)(1), (2), or (3) of this section.

- (1) Performance tests conducted using the test methods and procedures specified in § 63.145(i) for control devices other than flares; or
- (2) A design evaluation that addresses the vent stream characteristics and control device operating parameters specified in paragraphs (d)(2)(i) through (vii) of this section.
 - (i) For a thermal vapor incinerator, the design evaluation shall consider the vent stream composition, constituent concentrations, and flow rate and shall establish the design minimum and average temperature in the combustion zone and the combustion zone residence time.
 - (ii) For a catalytic vapor incinerator, the design evaluation shall consider the vent stream composition, constituent concentrations, and flow rate and shall establish the design minimum and average temperatures across the catalyst bed inlet and outlet.
 - (iii) For a boiler or process heater, the design evaluation shall consider the vent stream composition, constituent concentrations, and flow rate; shall establish the design minimum and average flame zone temperatures and combustion zone residence time; and shall describe the method and location where the vent stream is introduced into the flame zone.
 - (iv) For a condenser, the design evaluation shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature and shall establish the design outlet organic compound concentration level, design average temperature of the condenser exhaust vent stream, and the design average temperatures of the coolant fluid at the condenser inlet and outlet.
 - (v) For a carbon adsorption system that regenerates the carbon bed directly on-site in the control device such as a fixed-bed adsorber, the design evaluation shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature and shall establish the design exhaust vent stream organic compound concentration level, adsorption cycle time, number and capacity of carbon beds, type and working capacity of activated carbon used for carbon beds, design total regeneration stream mass or volumetric flow over the period of each complete carbon bed regeneration cycle, design carbon bed temperature after regeneration, design carbon bed regeneration time, and design service life of carbon.
 - (vi) For a carbon adsorption system that does not regenerate the carbon bed directly on-site in the control device such as a carbon canister, the design evaluation shall consider the vent stream composition, constituent concentrations, mass or volumetric flow rate, relative humidity, and temperature and shall establish the design exhaust vent stream organic compound concentration level, capacity of carbon bed, type and working capacity of activated carbon used for carbon bed, and design carbon replacement interval based on the total carbon working capacity of the control device and source operating schedule.
 - (vii) For a scrubber, the design evaluation shall consider the vent stream composition; constituent concentrations; liquid-to-vapor ratio; scrubbing liquid flow rate and concentration; temperature; and the reaction kinetics of the constituents with the scrubbing liquid. The design evaluation shall establish the design exhaust vent stream organic compound concentration level and will include the additional information in paragraphs (d)(2)(vii)(A) and (B) of this section for trays and a packed column scrubber.
 - (A) Type and total number of theoretical and actual trays;

- (B) Type and total surface area of packing for entire column, and for individual packed sections if column contains more than one packed section.
- (3) For flares, except as specified in paragraph (a) of § 63.108, the compliance determination specified in § 63.11(b) and § 63.145(j) of this subpart.
- (4) An owner or operator using any control device specified in paragraphs (d)(4)(i) through (iv) of this section is exempt from the requirements in paragraphs (d)(1) through (3) of this section and from the requirements in § 63.6(f), and from the requirements of paragraph (e) of this section.
 - (i) A boiler or process heater with a design heat input capacity of 44 megawatts or greater.
 - (ii) A boiler or process heater into which the emission stream is introduced with the primary fuel.
 - (iii) A boiler or process heater burning hazardous waste for which the owner or operator:
 - (A) Has been issued a final permit under part 270 of this chapter and complies with the requirements of part 266, subpart H of this chapter;
 - (B) Has certified compliance with the interim status requirements of part 266, subpart H of this chapter;
 - (C) Has submitted a Notification of Compliance under § 63.1207(j) and complies with the requirements of subpart EEE of this part; or
 - (D) Complies with subpart EEE of this part and will submit a Notification of Compliance under § 63.1207(j) by the date the owner or operator would have been required to submit the initial performance test report for this subpart.
 - (iv) A hazardous waste incinerator for which the owner or operator:
 - (A) Has been issued a final permit under part 270 of this chapter and complies with the requirements of part 264, subpart O of this chapter;
 - (B) Has certified compliance with the interim status requirements of part 265, subpart O of this chapter;
 - (C) Has submitted a Notification of Compliance under § 63.1207(j) and complies with the requirements subpart EEE of this part; or
 - (D) Complies with the requirements subpart EEE of this part and will submit a Notification of Compliance under § 63.1207(j) by the date the owner or operator would have been required to submit the initial performance test report for this subpart.
- (5) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), if the owner or operator vents emissions through a closed vent system to an adsorber(s) that cannot be regenerated or a regenerative adsorber(s) that is regenerated offsite, then the requirements specified in paragraphs (d)(1) and (2) of this section do not apply. Instead, the owner or operator must install a system of two or more adsorber units in series and comply with the requirements specified in paragraphs (d)(5)(i) through (iii) of this section.
 - (i) Conduct an initial performance test or design evaluation of the adsorber and establish the breakthrough limit and adsorber bed life.

- (ii) Monitor the HAP or total organic compound (TOC) concentration through a sample port at the outlet of the first adsorber bed in series according to the schedule in paragraph (d)(5)(iii)(B) of this section. The owner or operator must measure the concentration of HAP or TOC using either a portable analyzer, in accordance with Method 21 of appendix A-7 to 40 CFR part 60, using methane, propane, isobutylene, or the primary HAP being controlled as the calibration gas or Method 25A of appendix A-7 to 40 CFR part 60, using methane, propane, or the primary HAP being controlled as the calibration gas.
- (iii) Comply with paragraph (d)(5)(iii)(A) of this section, and comply with the monitoring frequency according to paragraph (d)(5)(iii)(B) of this section.
 - (A) The first adsorber in series must be replaced immediately when breakthrough, as defined in § 63.101, is detected between the first and second adsorber. The original second adsorber (or a fresh canister) will become the new first adsorber and a fresh adsorber will become the second adsorber. For purposes of this paragraph, “immediately” means within 8 hours of the detection of a breakthrough for adsorbers of 55 gallons or less, and within 24 hours of the detection of a breakthrough for adsorbers greater than 55 gallons. The owner or operator must monitor at the outlet of the first adsorber within 3 days of replacement to confirm it is performing properly.
 - (B) Based on the adsorber bed life established according to paragraph (d)(5)(i) of this section and the date the adsorbent was last replaced, conduct monitoring to detect breakthrough at least monthly if the adsorbent has more than 2 months of life remaining, at least weekly if the adsorbent has between 2 months and 2 weeks of life remaining, and at least daily if the adsorbent has 2 weeks or less of life remaining.
- (e) The owner or operator of a control device that is used to comply with the provisions of this section shall monitor the control device in accordance with § 63.143 of this subpart.
- (f) Except as provided in § 63.140 of this subpart, if gaps, cracks, tears, or holes are observed in ductwork, piping, or connections to covers and control devices during an inspection, a first effort to repair shall be made as soon as practical but no later than 5 calendar days after identification. Repair shall be completed no later than 15 calendar days after identification or discovery of the defect.

[62 FR 2760, Jan. 17, 1997, as amended at 64 FR 20192, Apr. 26, 1999; 89 FR 43203, May 16, 2024]

§ 63.140 Process wastewater provisions—delay of repair.

- (a) Delay of repair of equipment for which a control equipment failure or a gap, crack, tear, or hole has been identified, is allowed if the repair is technically infeasible without a shutdown, as defined in § 63.101 of subpart F of this part, or if the owner or operator determines that emissions of purged material from immediate repair would be greater than the emissions likely to result from delay of repair. Repair of this equipment shall occur by the end of the next shutdown.
- (b) Delay of repair of equipment for which a control equipment failure or a gap, crack, tear, or hole has been identified, is allowed if the equipment is emptied or is no longer used to treat or manage Group 1 wastewater streams or residuals removed from Group 1 wastewater streams.

- (c) Delay of repair of equipment for which a control equipment failure or a gap, crack, tear, or hole has been identified is also allowed if additional time is necessary due to the unavailability of parts beyond the control of the owner or operator. Repair shall be completed as soon as practical. The owner or operator who uses this provision shall comply with the requirements of § 63.147(b)(7) to document the reasons that the delay of repair was necessary.

[62 FR 2762, Jan. 17, 1997, as amended at 66 FR 6933, Jan. 22, 2001]

§§ 63.141-63.142 [Reserved]

§ 63.143 Process wastewater provisions—inspections and monitoring of operations.

- (a) For each wastewater tank, surface impoundment, container, individual drain system, and oil-water separator that receives, manages, or treats a Group 1 wastewater stream, a residual removed from a Group 1 wastewater stream, a recycled Group 1 wastewater stream, or a recycled residual removed from a Group 1 wastewater stream, the owner or operator shall comply with the inspection requirements specified in table 11 of this subpart.
- (b) For each design steam stripper and biological treatment unit used to comply with § 63.138 of this subpart, the owner or operator shall comply with the monitoring requirements specified in table 12 of this subpart.
- (c) If the owner or operator elects to comply with Item 1 in table 12 to this subpart, the owner or operator shall request approval to monitor appropriate parameters that demonstrate proper operation of the biological treatment unit. The request shall be submitted according to the procedures specified in § 63.151(f), and shall include a description of planned reporting and recordkeeping procedures. The owner or operator shall include as part of the submittal the basis for the selected monitoring frequencies and the methods that will be used. The Administrator will specify appropriate reporting and recordkeeping requirements as part of the review of the permit application or by other appropriate means.
- (d) If the owner or operator elects to comply with Item 3 in table 12 of this subpart, the owner or operator shall request approval to monitor appropriate parameters that demonstrate proper operation of the selected treatment process. The request shall be submitted according to the procedures specified in § 63.151(f) of this subpart, and shall include a description of planned reporting and recordkeeping procedures. The Administrator will specify appropriate reporting and recordkeeping requirements as part of the review of the permit application or by other appropriate means.
- (e) Except as provided in paragraphs (e)(4) and (e)(5) of this section, for each control device used to comply with the requirements of §§ 63.133 through 63.139 of this subpart, the owner or operator shall comply with the requirements in § 63.139(d) of this subpart, and with the requirements specified in paragraph (e)(1), (e)(2), or (e)(3) of this section.
 - (1) The owner or operator shall comply with the monitoring requirements specified in table 13 of this subpart; or
 - (2) The owner or operator shall use an organic monitoring device installed at the outlet of the control device and equipped with a continuous recorder. Continuous recorder is defined in § 63.111 of this subpart; or
 - (3) The owner or operator shall request approval to monitor parameters other than those specified in paragraphs (e)(1) and (e)(2) of this section. The request shall be submitted according to the procedures specified in § 63.151(f) of this subpart, and shall include a description of planned

reporting and recordkeeping procedures. The Administrator will specify appropriate reporting and recordkeeping requirements as part of the review of the permit application or by other appropriate means.

- (4) For a boiler or process heater in which all vent streams are introduced with primary fuel, the owner or operator shall comply with the requirements in § 63.139(d) of this subpart but the owner or operator is exempt from the monitoring requirements specified in paragraphs (e)(1) through (e)(3) of this section.
- (5) For a boiler or process heater with a design heat input capacity of 44 megawatts or greater, the owner or operator shall comply with the requirements in § 63.139(d) of this subpart but the owner or operator is exempt from the monitoring requirements specified in paragraphs (e)(1) through (e)(3) of this section.
- (f) For each parameter monitored in accordance with paragraph (c), (d), or (e) of this section, the owner or operator shall establish a range that indicates proper operation of the treatment process or control device. In order to establish the range, the owner or operator shall comply with the requirements specified in §§ 63.146(b)(7)(ii)(A) and (b)(8)(ii) of this subpart.
- (g) Monitoring equipment shall be installed, calibrated, and maintained according to the manufacturer's specifications or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately.

[62 FR 2762, Jan. 17, 1997, as amended at 89 FR 43204, May 16, 2024]

§ 63.144 Process wastewater provisions—test methods and procedures for determining applicability and Group 1/Group 2 determinations (determining which wastewater streams require control).

- (a) **Procedures to determine applicability.** An owner or operator shall comply with paragraph (a)(1) or (a)(2) of this section for each wastewater stream to determine which wastewater streams require control for Table 8 and/or Table 9 compounds. The owner or operator may use a combination of the approaches in paragraphs (a)(1) and (a)(2) of this section for different wastewater streams generated at the source.
 - (1) **Determine Group 1 or Group 2 status.** Determine whether a wastewater stream is a Group 1 or Group 2 wastewater stream in accordance with paragraphs (b) and (c) of this section.
 - (2) **Designate as Group 1.** An owner or operator may designate as a Group 1 wastewater stream a single wastewater stream or a mixture of wastewater streams. The owner or operator is not required to determine the concentration or flow rate for each designated Group 1 wastewater stream for the purposes of this section.
- (b) **Procedures to establish concentrations, when determining Group status under paragraph (a)(1) of this section.** An owner or operator who elects to comply with the requirements of paragraph (a)(1) of this section shall determine the annual average concentration for Table 8 and/or Table 9 compounds according to paragraph (b)(1) of this section for existing sources or paragraph (b)(2) of this section for new sources. The annual average concentration shall be a flow weighted average representative of actual or anticipated operation of the chemical manufacturing process unit generating the wastewater over a designated 12 month period. For flexible operation units, the owner or operator shall consider the

anticipated production over the designated 12 month period and include all wastewater streams generated by the process equipment during this period. The owner/operator is not required to determine the concentration of Table 8 or Table 9 compounds that are not reasonably expected to be in the process.

- (1) **Existing sources.** An owner or operator of an existing source who elects to comply with the requirements of paragraph (a)(1) of this section shall determine the flow weighted total annual average concentration for Table 9 compounds. For the purposes of this section, the term concentration, whether concentration is used alone or with other terms, may be adjusted by multiplying by the compound-specific fraction measured (Fm) factors listed in table 34 of this subpart unless determined by the methods in § 63.144(b)(5)(i)(A) and/or (B). When concentration is determined by Method 305 as specified in § 63.144(b)(5)(i)(B), concentration may be adjusted by dividing by the compound-specific Fm factors listed in table 34 of this subpart. When concentration is determined by Method 25D as specified in § 63.144(b)(5)(i)(A), concentration may not be adjusted by the compound-specific Fm factors listed in table 34 of this subpart. Compound-specific Fm factors may be used only when concentrations of individual compounds are determined or when only one compound is in the wastewater stream. Flow weighted total annual average concentration for Table 9 compounds means the total mass of Table 9 compounds occurring in the wastewater stream during the designated 12-month period divided by the total mass of the wastewater stream during the same designated 12-month period. The total annual average concentration shall be determined for each wastewater stream either at the point of determination, or downstream of the point of determination with adjustment for concentration changes made according to paragraph (b)(6) of this section. The procedures specified in paragraphs (b)(3), (b)(4), and (b)(5) of this section are considered acceptable procedures for determining the annual average concentration. They may be used in combination, and no one procedure shall take precedence over another.
- (2) **New sources.** An owner or operator of a new source who elects to comply with the requirements of paragraph (a)(1) of this section shall determine both the flow weighted total annual average concentration for Table 9 compounds and the flow weighted annual average concentration for each Table 8 compound. For the purposes of this section, the term concentration, whether concentration is used alone or with other terms, may be adjusted by multiplying by the compound-specific Fm factors listed in table 34 of this subpart unless determined by the methods in § 63.144(b)(5)(i)(A) and/or (B). When concentration is determined by Method 305 as specified in § 63.144(b)(5)(i)(B), concentration may be adjusted by dividing by the compound-specific Fm factors listed in table 34 of this subpart. When concentration is determined by Method 25D as specified in § 63.144(b)(5)(i)(A), concentration may not be adjusted by the compound-specific Fm factors listed in table 34 of this subpart. Compound-specific fraction measured factors are compound specific and shall be used only when concentration of individual compounds are determined or when only one compound is in the wastewater stream. The flow weighted annual average concentration of each Table 8 compound means the mass of each Table 8 compound occurring in the wastewater stream during the designated 12-month period divided by the total mass of the wastewater stream during the same designated 12-month period. Flow weighted total annual average concentration for Table 9 compounds means the total mass of Table 9 compounds occurring in the wastewater stream during the designated 12-month period divided by the total mass of the wastewater stream during the same designated 12-month period. The annual average concentration shall be determined for each wastewater stream either at the point of determination, or downstream of the point of determination with adjustment for concentration changes made according to paragraph (b)(6) of this section. Procedures specified in paragraphs (b)(3), (b)(4), and (b)(5) of this section are considered acceptable procedures for determining the annual average concentration. They may be used in combination, and no one procedure shall take precedence over another.

- (3) **Knowledge of the wastewater.** Where knowledge is used to determine the annual average concentration, the owner or operator shall provide sufficient information to document the annual average concentration for wastewater streams determined to be Group 2 wastewater streams. Documentation to determine the annual average concentration is not required for Group 1 streams. Examples of acceptable documentation include material balances, records of chemical purchases, process stoichiometry, or previous test results. If test data are used, the owner or operator shall provide documentation describing the testing protocol and the means by which any losses of volatile compounds during sampling, and the bias and accuracy of the analytical method, were accounted for in the determination.
- (4) **Bench-scale or pilot-scale test data.** Where bench-scale or pilot-scale test data are used to determine the annual average concentration, the owner or operator shall provide sufficient information to document that the data are representative of the actual annual average concentration, or are reliably indicative of another relevant characteristic of the wastewater stream that could be used to predict the annual average concentration. For concentration data, the owner or operator shall also provide documentation describing the testing protocol, and the means by which any losses of volatile compounds during sampling, and the bias and accuracy of the analytical method, were accounted for in the determination of annual average concentration.
- (5) **Test data from sampling at the point of determination or at a location downstream of the point of determination.** Where an owner or operator elects to comply with paragraph (a)(1) of this section by measuring the concentration for the relevant Table 8 or Table 9 compounds, the owner or operator shall comply with the requirements of this paragraph. For each wastewater stream, measurements shall be made either at the point of determination, or downstream of the point of determination with adjustment for concentration changes made according to paragraph (b)(6) of this section. A minimum of three samples from each wastewater stream shall be taken. Samples may be grab samples or composite samples.
- (i) **Methods.** The owner or operator shall use any of the methods specified in paragraphs (b)(5)(i)(A) through (b)(5)(i)(F) of this section.
- (A) **Method 25D.** Use procedures specified in Method 25D of 40 CFR part 60, appendix A.
- (B) **Method 305.** Use procedures specified in Method 305 of 40 CFR part 63, appendix A.
- (C) **Methods 624 and 625.** Use procedures specified in Methods 624 and 625 of 40 CFR part 136, appendix A and comply with the sampling protocol requirements specified in paragraph (b)(5)(ii) of this section. If these methods are used to analyze one or more compounds that are not on the method's published list of approved compounds, the Alternative Test Procedure specified in 40 CFR 136.4 and 136.5 shall be followed. For Method 625, make corrections to the compounds for which the analysis is being conducted based on the accuracy as recovery factors in Table 7 of the method.
- (D) **Method 1624 and Method 1625.** Use procedures specified in Method 1624 and Method 1625 of 40 CFR part 136, appendix A and comply with the requirements specified in paragraph (b)(5)(ii) of this section. If these methods are used to analyze one or more compounds that are not on the method's published list of approved compounds, the Alternative Test Procedure specified in 40 CFR 136.4 and 136.5 shall be followed.
- (E) **Other EPA method(s).** Use procedures specified in the method and comply with the requirements specified in paragraphs (b)(5)(ii) and either paragraph (b)(5)(iii)(A) or (b)(5)(iii)(B) of this section.

- (F) **Method(s) other than EPA method.** Use procedures specified in the method and comply with the requirements specified in paragraphs (b)(5)(ii) and (b)(5)(iii)(A) of this section.
 - (G) **Method 8260B.** Use procedures specified in Method 8260B in the SW-846 Compendium of Methods.
 - (H) **Method 316.** Use Method 316 to determine formaldehyde concentration.
 - (I) **Methods for ethylene oxide.** Methods specified in § 63.109(d) for analysis of ethylene oxide in wastewater.
- (ii) **Sampling plan.** The owner or operator who is expressly referred to this paragraph by provisions of this subpart shall prepare a sampling plan. Wastewater samples shall be collected using sampling procedures which minimize loss of organic compounds during sample collection and analysis and maintain sample integrity. The sample plan shall include procedures for determining recovery efficiency of the relevant hazardous air pollutants listed in table 8 or table 9 of this subpart. An example of an acceptable sampling plan would be one that incorporates similar sampling and sample handling requirements to those of Method 25D of 40 CFR part 60, appendix A. The sampling plan shall be maintained at the facility.
- (iii) **Validation of methods.** The owner or operator shall validate EPA methods other than Methods 25D, 305, 624, 625, 1624, and 1625 using the procedures specified in paragraph (b)(5)(iii)(A) or (b)(5)(iii)(B) of this section. The owner or operator shall validate other methods as specified in paragraph (b)(5)(iii)(A) of this section.
- (A) **Validation of EPA methods and other methods.** The method used to measure organic hazardous air pollutants concentrations in the wastewater shall be validated according to section 5.1 or 5.3, and the corresponding calculations in section 6.1 or 6.3, of Method 301 of appendix A of this part. The data are acceptable if they meet the criteria specified in section 6.1.5 or 6.3.3 of Method 301 of appendix A of this part. If correction is required under section 6.3.3 of Method 301 of appendix A of this part, the data are acceptable if the correction factor is within the range 0.7 to 1.30. Other sections of Method 301 of appendix A of this part are not required. The concentrations of the individual organic hazardous air pollutants measured in the water may be corrected to their concentrations had they been measured by Method 305 of appendix A of this part, by multiplying each concentration by the compound-specific fraction measured (Fm) factor listed in table 34 of this subpart.
- (B) **Validation for EPA methods.** Follow the procedures as specified in "Alternative Validation Procedure for EPA Waste Methods" 40 CFR part 63, appendix D.
- (iv) **Calculations of average concentration.** The average concentration for each individually speciated Table 8 compound shall be calculated by adding the individual values determined for the specific compound in each sample and dividing by the number of samples. The total average concentration of Table 9 compounds shall be calculated by first summing the concentration of the individual compounds to obtain a total hazardous air pollutants concentration for the sample; add the sample totals and then divide by the number of samples in the run to obtain the sample average for the run. If the method used does not speciate the compounds, the sample results should be added and this total divided by the number of samples in the run to obtain the sample average for the run.

(6) **Adjustment for concentrations determined downstream of the point of determination.** The owner or operator shall make corrections to the annual average concentration or total annual average concentration when the concentration is determined downstream of the point of determination at a location where: two or more wastewater streams have been mixed; one or more wastewater streams have been treated; or, losses to the atmosphere have occurred. The owner or operator shall make the adjustments either to the individual data points or to the final annual average concentration.

(c) **Procedures to determine flow rate, when evaluating Group status under paragraph (a)(1) of this section.** An owner or operator who elects to comply with paragraph (a)(1) of this section shall determine the annual average flow rate of the wastewater stream either at the point of determination for each wastewater stream, or downstream of the point of determination with adjustment for flow rate changes made according to paragraph (c)(4) of this section. These procedures may be used in combination for different wastewater streams at the source. The annual average flow rate for the wastewater stream shall be representative of actual or anticipated operation of the chemical manufacturing process unit generating the wastewater over a designated 12-month period. The owner or operator shall consider the total annual wastewater volume generated by the chemical manufacturing process unit. If the chemical manufacturing process unit is a flexible operation unit, the owner or operator shall consider all anticipated production in the process equipment over the designated 12-month period. The procedures specified in paragraphs (c)(1), (c)(2), and (c)(3) of this section are considered acceptable procedures for determining the flow rate. They may be used in combination, and no one procedure shall take precedence over another.

(1) **Knowledge of the wastewater.** The owner or operator may use knowledge of the wastewater stream and/or the process to determine the annual average flow rate. The owner or operator shall use the maximum expected annual average production capacity of the process unit, knowledge of the process, and/or mass balance information to either: Estimate directly the annual average wastewater flow rate; or estimate the total annual wastewater volume and then divide total volume by 525,600 minutes in a year. Where knowledge is used to determine the annual average flow rate, the owner or operator shall provide sufficient information to document the flow rate for wastewater streams determined to be Group 2 wastewater streams. Documentation to determine the annual average flow rate is not required for Group 1 streams.

(2) **Historical records.** The owner or operator may use historical records to determine the annual average flow rate. Derive the highest annual average flow rate of wastewater from historical records representing the most recent 5 years of operation or, if the process unit has been in service for less than 5 years but at least 1 year, from historical records representing the total operating life of the process unit. Where historical records are used to determine the annual average flow rate, the owner or operator shall provide sufficient information to document the flow rate for wastewater streams determined to be Group 2 wastewater streams. Documentation to determine the annual average flow rate is not required for Group 1 streams.

(3) **Measurements of flow rate.** Where an owner or operator elects to comply with paragraph (a)(1) of this section by measuring the flow rate, the owner or operator shall comply with the requirements of this paragraph. Measurements shall be made at the point of determination, or at a location downstream of the point of determination with adjustments for flow rate changes made according to paragraph (c)(4) of this section. Where measurement data are used to determine the annual average flow rate, the owner or operator shall provide sufficient information to document the flow rate for wastewater streams determined to be Group 2 wastewater streams. Documentation to determine the annual average flow rate is not required for Group 1 streams.

- (4) **Adjustment for flow rates determined downstream of the point of determination.** The owner or operator shall make corrections to the annual average flow rate of a wastewater stream when it is determined downstream of the point of determination at a location where two or more wastewater streams have been mixed or one or more wastewater streams have been treated. The owner or operator shall make corrections for such changes in the annual average flow rate.

[62 FR 2762, Jan. 17, 1997, as amended at 79 FR 11283, Feb. 27, 2014; 89 FR 43205, May 16, 2024]

§ 63.145 Process wastewater provisions—test methods and procedures to determine compliance.

- (a) **General.** This section specifies the procedures for performance tests that are conducted to demonstrate compliance of a treatment process or a control device with the control requirements specified in § 63.138 of this subpart. Owners or operators conducting a design evaluation shall comply with the requirements of paragraph (a)(1) or (a)(2) of this section. Owners or operators conducting a performance test shall comply with the applicable requirements in paragraphs (a) through (i) of this section.

- (1) **Performance tests and design evaluations for treatment processes.** If design steam stripper option (§ 63.138(d)) or RCRA option (§ 63.138(h)) is selected to comply with § 63.138, neither a design evaluation nor a performance test is required. For any other non-biological treatment process, the owner or operator shall conduct either a design evaluation as specified in § 63.138(j), or a performance test as specified in this section. For closed biological treatment processes, the owner or operator shall conduct either a design evaluation as specified in § 63.138(j), or a performance test as specified in this section. For each open biological treatment process, the owner or operator shall conduct a performance test as specified in this section.

Note: Some open biological treatment processes may not require a performance test. Refer to § 63.145(h) and table 36 of this subpart to determine whether the biological treatment process meets the criteria that exempt the owner or operator from conducting a performance test.

- (2) **Performance tests and design evaluations for control devices.** The owner or operator shall conduct either a design evaluation as specified in § 63.139(d), or a performance test as specified in paragraph (i) of this section for control devices other than flares and paragraph (j) of this section for flares.
- (3) **Representative process unit operating conditions.** Except as specified in paragraph (a)(10) of this section, compliance shall be demonstrated for representative operating conditions. Operations during periods of startup, shutdown, or malfunction and periods of nonoperation shall not constitute representative conditions. The owner or operator shall record the process information that is necessary to document operating conditions during the test.
- (4) **Representative treatment process or control device operating conditions.** Performance tests shall be conducted when the treatment process or control device is operating at a representative inlet flow rate and concentration. If the treatment process or control device will be operating at several different sets of representative operating conditions, the owner or operator shall comply with paragraphs (a)(4)(i) and (a)(4)(ii) of this section. The owner or operator shall record information that is necessary to document treatment process or control device operating conditions during the test.

- (i) **Range of operating conditions.** If the treatment process or control device will be operated at several different sets of representative operating conditions, performance testing over the entire range is not required. In such cases, the performance test results shall be supplemented with modeling and/or engineering assessments to demonstrate performance over the operating range.
 - (ii) **Consideration of residence time.** If concentration and/or flow rate to the treatment process or control device are not relatively constant (i.e., comparison of inlet and outlet data will not be representative of performance), the owner or operator shall consider residence time, when determining concentration and flow rate.
- (5) **Testing equipment.** All testing equipment shall be prepared and installed as specified in the applicable test methods, or as approved by the Administrator.
- (6) **Compounds not required to be considered in performance tests or design evaluations.** Compounds that meet the requirements specified in paragraph (a)(6)(i), (a)(6)(ii), or (a)(6)(iii) of this section are not required to be included in the performance test. Concentration measurements based on Method 305 shall be adjusted by dividing each concentration by the compound-specific Fm factor listed in table 34 of this subpart. Concentration measurements based on methods other than Method 305 shall not be adjusted by the compound-specific Fm factor listed in table 34 of this subpart.
 - (i) Compounds not used or produced by the chemical manufacturing process unit; or
 - (ii) Compounds with concentrations at the point of determination that are below 1 part per million by weight; or
 - (iii) Compounds with concentrations at the point of determination that are below the lower detection limit where the lower detection limit is greater than 1 part per million by weight. The method shall be an analytical method for wastewater which has that compound as a target analyte.
- (7) **Treatment using a series of treatment processes.** In all cases where the wastewater provisions in this subpart allow or require the use of a treatment process to comply with emissions limitations, the owner or operator may use multiple treatment processes. The owner or operator complying with the requirements of § 63.138(a)(7)(i), when wastewater is conveyed by hard-piping, shall comply with either §§ 63.145(a)(7)(i) or 63.145(a)(7)(ii) of this subpart. The owner or operator complying with the requirements of § 63.138(a)(7)(ii) of this subpart shall comply with the requirements of § 63.145(a)(7)(ii) of this subpart.
 - (i) The owner or operator shall conduct the performance test across each series of treatment processes. For each series of treatment processes, inlet concentration and flow rate shall be measured either where the wastewater stream enters the first treatment process in a series of treatment processes, or prior to the first treatment process as specified in § 63.145(a)(9) of this subpart. For each series of treatment processes, outlet concentration and flow rate shall be measured where the wastewater stream exits the last treatment process in the series of treatment processes, except when the last treatment process is an open or a closed aerobic biological treatment process demonstrating compliance by using the procedures in § 63.145 (f) or (g) of this subpart. When the last treatment process is either an open or a closed aerobic biological treatment process demonstrating compliance by using the procedures in § 63.145 (f) or (g) of this subpart, inlet and outlet concentrations and flow rates shall be measured as

provided in paragraphs (a)(7)(i)(A) and (a)(7)(i)(B) of this section. The mass flow rates removed or destroyed by the series of treatment processes and by the biological treatment process are all used to calculate actual mass removal (AMR) as specified in § 63.145(f)(5)(ii) of this subpart.

- (A) The inlet and outlet to the series of treatment processes prior to the biological treatment process are the points at which the wastewater enters the first treatment process and exits the last treatment process in the series, respectively, except as provided in paragraph (a)(9)(ii) of this section.
 - (B) The inlet to the biological treatment process shall be the point at which the wastewater enters the biological treatment process or the outlet from the series of treatment processes identified in paragraph (a)(7)(i)(A) of this section, except as provided in paragraph (a)(9)(ii) of this section.
- (ii) The owner or operator shall conduct the performance test across each treatment process in the series of treatment processes. The mass flow rate removed or destroyed by each treatment process shall be added together to determine whether compliance has been demonstrated using § 63.145 (c), (d), (e), (f), and (g), as applicable. If a biological treatment process is one of the treatment processes in the series of treatment processes, the inlet to the biological treatment process shall be the point at which the wastewater enters the biological treatment process, or the inlet to the equalization tank if all the criteria of paragraph (a)(9)(ii) of this section are met.
- (8) When using a biological treatment process to comply with § 63.138 of this subpart, the owner or operator may elect to calculate the AMR using a subset of Table 8 and/or Table 9 compounds determined at the point of determination or downstream of the point of determination with adjustment for concentration and flowrate changes made according to § 63.144(b)(6) and § 63.144(c)(4) of this subpart, respectively. All Table 8 and/or Table 9 compounds measured to determine the RMR, except as provided by § 63.145(a)(6), shall be included in the RMR calculation.
- (9) The owner or operator determining the inlet for purposes of demonstrating compliance with § 63.145 (e), (f), or (g) of this subpart may elect to comply with paragraph (a)(9)(i) or (a)(9)(ii) of this section.
- (i) When wastewater is conveyed exclusively by hard-piping from the point of determination to a treatment process that is either the only treatment process or the first in a series of treatment processes (i.e., no treatment processes or other waste management units are used upstream of this treatment process to store, handle, or convey the wastewater), the inlet to the treatment process shall be at any location from the point of determination to where the wastewater stream enters the treatment process. When samples are taken upstream of the treatment process and before wastewater streams have converged, the owner or operator shall ensure that the mass flow rate of all Group 1 wastewater streams is accounted for when using § 63.138 (e) or (f) to comply and that the mass flow rate of all Group 1 and Group 2 wastewater streams is accounted for when using § 63.138(g) to comply, except as provided in § 63.145(a)(6).
 - (ii) The owner or operator may consider the inlet to the equalization tank as the inlet to the biological treatment process if all the criteria in paragraphs (a)(9)(ii)(A) through (a)(9)(ii)(C) of this section are met. The outlet from the series of treatment processes prior to the biological treatment process is the point at which the wastewater exits the last treatment process in the

series prior to the equalization tank, if the equalization tank and biological treatment process are part of a series of treatment processes. The owner or operator shall ensure that the mass flow rate of all Group 1 wastewater streams is accounted for when using § 63.138 (e) or (f) to comply and that the mass flow rate of all Group 1 and Group 2 wastewater streams is accounted for when using § 63.138(g) to comply, except as provided in § 63.145(a)(6).

- (A) The wastewater is conveyed by hard-piping from either the last previous treatment process or the point of determination to the equalization tank.
- (B) The wastewater is conveyed from the equalization tank exclusively by hard-piping to the biological treatment process and no treatment processes or other waste management units are used to store, handle, or convey the wastewater between the equalization tank and the biological treatment process.
- (C) The equalization tank is equipped with a fixed roof and a closed vent system that routes emissions to a control device that meets the requirements of § 63.133(a)(2)(i) and § 63.133 (b)(1) through (b)(4) of this subpart.

(10) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), the requirement of paragraph (a)(3) of this section no longer applies. Instead, owners and operators must comply with the conditions specified in § 63.103(b)(3)(ii) of subpart F of this part.

(b) **Noncombustion treatment process—concentration limits.** This paragraph applies to performance tests that are conducted to demonstrate compliance of a noncombustion treatment process with the parts per million by weight wastewater stream concentration limits at the outlet of the treatment process. This compliance option is specified in § 63.138(b)(1) and § 63.138(c)(1). Wastewater samples shall be collected using sampling procedures which minimize loss of organic compounds during sample collection and analysis and maintain sample integrity per § 63.144(b)(5)(ii). Samples shall be collected and analyzed using the procedures specified in § 63.144 (b)(5)(i), (b)(5)(ii), and (b)(5)(iii) of this subpart. Samples may be grab samples or composite samples. Samples shall be taken at approximately equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs. Concentration measurements based on Method 305 may be adjusted by dividing each concentration by the compound-specific Fm factor listed in Table 34 of this subpart. Concentration measurements based on methods other than Method 305 may be adjusted by multiplying each concentration by the compound-specific Fm factor listed in table 34 of this subpart. (For wastewater streams that are Group 1 for both Table 8 and Table 9 compounds, compliance is demonstrated only if the sum of the concentrations of Table 9 compounds is less than 50 ppmw, and the concentration of each Table 8 compound is less than 10 ppmw.)

(c) **Noncombustion, nonbiological treatment process: Percent mass removal/destruction option.** This paragraph applies to performance tests that are conducted to demonstrate compliance of a noncombustion, nonbiological treatment process with the percent mass removal limits specified in § 63.138(e) (1) and (2) for Table 8 and/or Table 9 compounds. The owner or operator shall comply with the requirements specified in § 63.145 (c)(1) through (c)(6) of this subpart.

(1) **Concentration.** The concentration of Table 8 and/or Table 9 compounds entering and exiting the treatment process shall be determined as provided in this paragraph. Wastewater samples shall be collected using sampling procedures which minimize loss of organic compounds during sample collection and analysis and maintain sample integrity per § 63.144(b)(5)(ii). The method shall be an analytical method for wastewater which has that compound as a target analyte. Samples may be

grab samples or composite samples. Samples shall be taken at approximately equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs. Concentration measurements based on Method 305 shall be adjusted by dividing each concentration by the compound-specific Fm factor listed in Table 34 of this subpart. Concentration measurements based on methods other than Method 305 shall not adjust by the compound-specific Fm factor listed in Table 34 of this subpart.

- (2) **Flow rate.** The flow rate of the entering and exiting wastewater streams shall be determined using inlet and outlet flow measurement devices, respectively. Where the outlet flow is not greater than the inlet flow, a flow measurement device shall be used, and may be used at either the inlet or outlet. Flow rate measurements shall be taken at the same time as the concentration measurements.
- (3) **Calculation of mass flow rate—for noncombustion, nonbiological treatment processes.** The mass flow rates of Table 8 and/or Table 9 compounds entering and exiting the treatment process are calculated as follows.

$$QMW_a = \frac{\rho}{p * 10^6} \left(\sum_{k=1}^p Q_{a,k} C_{T,a,k} \right) \quad (\text{Eqn WW1})$$

$$QMW_b = \frac{\rho}{p * 10^6} \left(\sum_{k=1}^p Q_{b,k} C_{T,b,k} \right) \quad (\text{Eqn WW2})$$

Where:

QMW_a , QMW_b = Mass flow rate of Table 8 or Table 9 compounds, average of all runs, in wastewater entering (QMW_a) or exiting (QMW_b) the treatment process, kilograms per hour.

ρ = Density of the wastewater, kilograms per cubic meter.

$Q_{a,k}$, $Q_{b,k}$ = Volumetric flow rate of wastewater entering ($Q_{a,k}$) or exiting ($Q_{b,k}$) the treatment process during each run k, cubic meters per hour.

$C_{T,a,k}$, $C_{T,b,k}$ = Total concentration of Table 8 or Table 9 compounds in wastewater entering ($C_{T,a,k}$) or exiting ($C_{T,b,k}$) the treatment process during each run k, parts per million by weight.

p = Number of runs.

k = Identifier for a run.

10^6 = conversion factor, mg/kg

- (4) **Percent removal calculation for mass flow rate.** The percent mass removal across the treatment process shall be calculated as follows:

$$E = \frac{QMW_a - QMW_b}{QMW_a} \times 100 \quad (\text{Eqn WW3})$$

Where:

E = Removal or destruction efficiency of the treatment process, percent.

QMW_a, QMW_b = Mass flow rate of Table 8 or Table 9 compounds in wastewater entering (QMW_a) and exiting (QMW_b) the treatment process, kilograms per hour (as calculated using Equations WW1 and WW2).

- (5) **Calculation of flow-weighted average of Fr values.** If complying with § 63.138(e)(2), use Equation WW8 to calculate the flow-weighted average of the Fr values listed in Table 9 of this subpart. When the term “combustion” is used in Equation WW8, the term “treatment process” shall be used for the purposes of this paragraph.
- (6) **Compare mass removal efficiency to required efficiency.** Compare the mass removal efficiency (calculated in Equation WW3) to the required efficiency as specified in § 63.138(e) of this subpart. If complying with § 63.138(e)(1), compliance is demonstrated if the mass removal efficiency is 99 percent or greater. If complying with § 63.138(e)(2), compliance is demonstrated if the mass removal efficiency is greater than or equal to the flow-weighted average of the Fr values calculated in Equation WW8.
- (d) **Combustion treatment processes: percent mass removal/destruction option.** This paragraph applies to performance tests that are conducted to demonstrate compliance of a combustion treatment process with the percent mass destruction limits specified in § 63.138(e) (1) and (2) for Table 9 compounds, and/or § 63.138(e)(1) for Table 8 compounds. The owner or operator shall comply with the requirements specified in § 63.145 (d)(1) through (d)(9) of this subpart. (Wastewater streams that are Group 1 for both Table 8 and Table 9 compounds need only do the compliance demonstration for Table 9 compounds.)
 - (1) **Concentration in wastewater stream entering the combustion treatment process.** The concentration of Table 8 and/or Table 9 compounds entering the treatment process shall be determined as provided in this paragraph. Wastewater samples shall be collected using sampling procedures which minimize loss of organic compounds during sample collection and analysis and maintain sample integrity per § 63.144(b)(5)(ii). The method shall be an analytical method for wastewater which has that compound as a target analyte. Samples may be grab samples or composite samples. Samples shall be taken at approximately equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs. Concentration measurements based on Method 305 of appendix A of this part shall be adjusted by dividing each concentration by the compound-specific Fm factor listed in table 34 of this subpart. Concentration measurements based on methods other than Method 305 shall not adjust by the compound-specific Fm factor listed in table 34 of this subpart.
 - (2) **Flow rate of wastewater entering the combustion treatment process.** The flow rate of the wastewater stream entering the combustion treatment process shall be determined using an inlet flow meter. Flow rate measurements shall be taken at the same time as the concentration measurements.
 - (3) **Calculation of mass flow rate in wastewater stream entering combustion treatment processes.** The mass flow rate of Table 8 and/or Table 9 compounds entering the treatment process is calculated as follows:

$$QMW_a = \frac{\rho}{p * 10^6} \left(\sum_{k=1}^p Q_{a,k} * C_{T,a,k} \right) \quad (\text{Eqn WW4})$$

Where:

QMW_a = Mass flow rate of Table 8 or Table 9 compounds entering the combustion unit, kilograms per hour.

ρ = Density of the wastewater stream, kilograms per cubic meter.

$Q_{a,k}$ = Volumetric flow rate of wastewater entering the combustion unit during run k, cubic meters per hour.

$C_{T,a,k}$ = Total concentration of Table 8 or Table 9 compounds in the wastewater stream entering the combustion unit during run k, parts per million by weight.

p = Number of runs.

k = Identifier for a run.

- (4) **Concentration in vented gas stream exiting the combustion treatment process.** The concentration of table 8 and/or table 9 compounds exiting the combustion treatment process in any vented gas stream shall be determined as provided in this paragraph. Samples may be grab samples or composite samples. Samples shall be taken at approximately equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs. Concentration measurements shall be determined using Method 18 of appendix A-6 to 40 CFR part 60. ASTM D6420-18 (incorporated by reference, see § 63.14) may also be used in lieu of Method 18, if the target compounds are all known and are all listed in Section 1.1 of ASTM D6420-18 as measurable; ASTM D6420-18 must not be used for methane and ethane; and ASTM D6420-18 may not be used as a total VOC method. Alternatively, any other test method validated according to the procedures in Method 301 of appendix A to this part may be used.
- (5) **Volumetric flow rate of vented gas stream exiting the combustion treatment process.** The volumetric flow rate of the vented gas stream exiting the combustion treatment process shall be determined using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A, as appropriate. Volumetric flow rate measurements shall be taken at the same time as the concentration measurements.
- (6) **Calculation of mass flow rate of vented gas stream exiting combustion treatment processes.** The mass flow rate of Table 8 and/or Table 9 compounds in a vented gas stream exiting the combustion treatment process shall be calculated as follows:

(Eqn WW5) [Reserved]

$$QMG_b = K_2 \left(\sum_{i=1}^n CG_{b,i} MW_i \right) QG_b \quad (\text{Eqn WW6})$$

Where:

$CG_{a,i}$, $CG_{b,i}$ = Concentration of total organic compounds (TOC) (minus methane and ethane) or total organic hazardous air pollutants, in vented gas stream, entering ($CG_{a,i}$) and exiting ($CG_{b,i}$) the control device, dry basis, parts per million by volume.

QMG_a , QMG_b = Mass rate of TOC (minus methane and ethane) or total organic hazardous air pollutants, in vented gas stream, entering (QMG_a) and exiting (QMG_b) the control device, dry basis, kilograms per hour.

MW_i = Molecular weight of a component, kilogram/kilogram-mole.

QG_a , QG_b = Flow rate of gas stream entering (QG_a) and exiting (QG_b) the control device, dry standard cubic meters per hour.

K_2 = Constant, 41.57×10^{-9} (parts per million) $^{-1}$ (gram-mole per standard cubic meter) (kilogram/gram), where standard temperature (gram-mole per standard cubic meter) is 20 °Celsius.

i = Identifier for a compound.

n = Number of components in the sample.

- (7) **Destruction efficiency calculation.** The destruction efficiency of the combustion unit for Table 8 and/or Table 9 compounds shall be calculated as follows:

$$E = \frac{QMW_a - QMG_b}{QMW_a} * 100 \quad (\text{Eqn WW7})$$

Where:

E = Destruction efficiency of Table 8 or Table 9 compounds for the combustion unit, percent.

QMW_a = Mass flow rate of Table 8 or Table 9 compounds entering the combustion unit, kilograms per hour.

QMG_b = Mass flow rate of Table 8 or Table 9 compounds in vented gas stream exiting the combustion treatment process, kilograms per hour.

- (8) **Calculation of flow-weighted average of Fr values.** Use Equation WW8 to calculate the flow-weighted average of the Fr values listed in table 9 of this subpart.

$$Fr_{avg} = \left[\frac{\sum_{i=1}^n \sum_{k=1}^p Fr_i * C_{i,a,k} * Q_{a,k}}{\sum_{k=1}^p \sum_{i=1}^n C_{i,a,k} * Q_{a,k}} \right] * 100 \quad (\text{Eqn WW8})$$

Where:

Fr_{avg} = Flow-weighted average of the Fr values.

$C_{i,a,k}$ = Concentration of Table 8 and/or Table 9 compounds in wastewater stream entering the combustion unit, during run k, parts per million by weight.

$Q_{a,k}$ = Volumetric flow rate of wastewater entering the combustion unit during run k, cubic meters per hour.

Fr_i = Compound-specific Fr value listed in table 9 of this subpart.

(9) **Calculate flow-weighted average of Fr values and compare to mass destruction efficiency.** Compare the mass destruction efficiency (calculated in Equation WW 7) to the required efficiency as specified in § 63.138(e). If complying with § 63.138(e)(1), compliance is demonstrated if the mass destruction efficiency is 99 percent or greater. If complying with § 63.138(e)(2), compliance is demonstrated if the mass destruction efficiency is greater than or equal to the flow-weighted average of the Fr value calculated in Equation WW8.

(e) **Non-combustion treatment processes including closed biological treatment processes: RMR option.** This paragraph applies to performance tests for non-combustion treatment processes other than open biological treatment processes to demonstrate compliance with the mass removal provisions for Table 8 and/or Table 9 compounds. Compliance options for noncombustion treatment processes are specified in § 63.138(f) of this subpart. Compliance options for closed aerobic or anaerobic biological treatment processes are specified in § 63.138(f) and § 63.138(g) of this subpart. When complying with § 63.138(f), the owner or operator shall comply with the requirements specified in § 63.145(e)(1) through (e)(6) of this subpart. When complying with § 63.138(g), the owner or operator shall comply with the requirements specified in § 63.145(e)(1) through (e)(6) of this subpart. (Wastewater streams that are Group 1 for both Table 8 and Table 9 compounds need only do the compliance demonstration for Table 9 compounds.)

(1) **Concentration in wastewater stream.** The concentration of Table 8 and/or Table 9 compounds shall be determined as provided in this paragraph. Concentration measurements to determine RMR shall be taken at the point of determination or downstream of the point of determination with adjustment for concentration change made according to § 63.144(b)(6) of this subpart. Concentration measurements to determine AMR shall be taken at the inlet and outlet to the treatment process and as provided in § 63.145(a)(7) for a series of treatment processes. Wastewater samples shall be collected using sampling procedures which minimize loss of organic compounds during sample collection and analysis and maintain sample integrity per § 63.144(b)(5)(ii). The method shall be an analytical method for wastewater which has that compound as a target analyte. Samples may be grab samples or composite samples. Samples shall be taken at approximately equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs. Concentration measurements based on Method 305 shall be adjusted by dividing each concentration by the compound-specific Fm factor listed in table 34 of this subpart. Concentration measurements based on methods other than Method 305 shall not adjust by the compound-specific Fm factor listed in table 34 of this subpart.

(2) **Flow rate.** Flow rate measurements to determine RMR shall be taken at the point of determination or downstream of the point of determination with adjustment for flow rate change made according to § 63.144(c)(4) of this subpart. Flow rate measurements to determine AMR shall be taken at the inlet and outlet to the treatment process and as provided in § 63.145(a)(7) for a series of treatment processes. Flow rate shall be determined using inlet and outlet flow measurement devices. Where the outlet flow is not greater than the inlet flow, a flow measurement device shall be used, and may be used at either the inlet or outlet. Flow rate measurements shall be taken at the same time as the concentration measurements.

(3) *Calculation of RMR for non-combustion treatment processes including closed biological treatment processes.* When using § 63.138(f) to comply, the required mass removal of Table 8 and/or Table 9 compounds for each Group 1 wastewater stream shall be calculated as specified in paragraph (e)(3)(i) of this section. When using § 63.138(g) to comply, the required mass removal shall be calculated as specified in paragraph (e)(3)(ii) of this section.

(i) When using § 63.138(f) to comply, the required mass removal of Table 8 and/or Table 9 compounds for each Group 1 wastewater stream shall be calculated using Equation WW9.

$$RMR = \frac{\rho}{10^9} Q \sum_{i=1}^n (C_i * Fr_i) \quad (\text{Eqn WW9})$$

Where:

RMR = Required mass removal for treatment process or series of treatment processes, kilograms per hour.

ρ = Density of the Group 1 wastewater stream, kilograms per cubic meter.

Q = Volumetric flow rate of wastewater stream at the point of determination, liters per hour.

i = Identifier for a compound.

n = Number of Table 8 or Table 9 compounds in stream.

C_i = Concentration of Table 8 or Table 9 compounds at the point of determination, parts per million by weight.

Fr_i = Fraction removal value of a Table 8 or Table 9 compound. Fr values are listed in table 9 of this subpart.

10^9 = Conversion factor, mg/kg * l/m³.

(ii) When using § 63.138(g) to comply, the required mass removal is 95 percent of the mass flow rate for all Group 1 and Group 2 wastewater streams combined for treatment. The required mass removal of Table 8 and/or Table 9 compounds for all Group 1 and Group 2 wastewater streams combined for treatment when complying with § 63.138(g) shall be calculated using the following equation:

$$RMR = \frac{0.95\rho}{10^9} Q \sum_{i=1}^n (C_i) \quad (\text{Eqn WW9a})$$

Where:

RMR = Required mass removal for treatment process or series of treatment processes, kilograms per hour.

ρ = Density of the Group 1 wastewater stream, kilograms per cubic meter.

Q = Volumetric flow rate of wastewater stream at the point of determination, liters per hour.

i = Identifier for a compound.

n = Number of Table 8 or Table 9 compounds in stream.

C_i = Concentration of Table 8 or Table 9 compounds at the point of determination, parts per million by weight.

10⁹ = Conversion factor, mg/kg * l/m³

(4)

- (i) The required mass removal is calculated by summing the required mass removal for each Group 1 wastewater stream to be combined for treatment when complying with § 63.138(f).
- (ii) The required mass removal is calculated by summing the required mass removal for all Group 1 and Group 2 wastewater streams combined for treatment when complying with § 63.138(g).

(5) *The AMR calculation procedure for non-combustion treatment processes including closed biological treatment processes.* The AMR shall be calculated as follows:

$$AMR = (QMW_a - QMW_b) \quad (\text{Eqn WW10})$$

Where:

AMR = Actual mass removal of Table 8 or Table 9 compounds achieved by treatment process or series of treatment processes, kilograms per hour.

QMW_a = Mass flow rate of Table 8 or Table 9 compounds in wastewater entering the treatment process or first treatment process in a series of treatment processes, kilograms per hour.

QMW_b = Mass flow rate of Table 8 or Table 9 compounds in wastewater exiting the last treatment process in a series of treatment processes, kilograms per hour.

- (6) *Compare RMR to AMR.* When complying with § 63.138(f), compare the RMR calculated in Equation WW9 to the AMR calculated in Equation WW10. Compliance is demonstrated if the AMR is greater than or equal to the RMR. When complying with § 63.138(g), compare the RMR calculated in Equation WW-9a to the AMR calculated in Equation WW10. Compliance is demonstrated if the AMR is greater than or equal to 95-percent mass removal.
- (f) *Open or closed aerobic biological treatment processes: Required mass removal (RMR) option.* This paragraph applies to the use of performance tests that are conducted for open or closed aerobic biological treatment processes to demonstrate compliance with the mass removal provisions for Table 8 and/or Table 9 compounds. These compliance options are specified in § 63.138(f) of this subpart. The owner or operator shall comply with the requirements specified in § 63.145 (f)(1) through (f)(6) of this subpart. Some compounds may not require a performance test. Refer to § 63.145(h) and table 36 of this subpart to determine which compounds may be exempt from the requirements of this paragraph.
 - (1) *Concentration in wastewater stream.* The concentration of Table 8 and/or Table 9 compounds shall be determined as provided in this paragraph. Concentration measurements to determine RMR shall be taken at the point of determination or downstream of the point of determination with adjustment for concentration change made according to § 63.144(b)(6) of this subpart. Concentration

measurements to determine AMR shall be taken at the inlet and outlet to the treatment process and as provided in § 63.145(a)(7) for a series of treatment processes. Wastewater samples shall be collected using sampling procedures which minimize loss of organic compounds during sample collection and analysis and maintain sample integrity per § 63.144(b)(5)(ii). The method shall be an analytical method for wastewater which has that compound as a target analyte. Samples may be grab samples or composite samples. Samples shall be taken at approximately equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs. Concentration measurements based on Method 305 shall be adjusted by dividing each concentration by the compound-specific Fm factor listed in table 34 of this subpart. Concentration measurements based on methods other than Method 305 shall not adjust by the compound-specific Fm factor listed in table 34 of this subpart.

- (2) **Flow rate.** Flow rate measurements to determine RMR shall be taken at the point of determination or downstream of the point of determination with adjustment for flow rate change made according to § 63.144(c)(4) of this subpart. Flow rate measurements to determine AMR shall be taken at the inlet and outlet to the treatment process and as provided in § 63.145(a)(7) for a series of treatment processes. Flow rate shall be determined using inlet and outlet flow measurement devices. Where the outlet flow is not greater than the inlet flow, a flow measurement device shall be used, and may be used at either the inlet or outlet. Flow rate measurements shall be taken at the same time as the concentration measurements.
- (3) **Calculation of RMR for open or closed aerobic biological treatment processes.** The required mass removal of Table 8 and/or Table 9 compounds for each Group 1 wastewater stream shall be calculated using the following equation:

$$RMR = \frac{\rho}{10^9} Q \sum_{i=1}^n (C_i * Fr_i) \quad (\text{Eqn WW11})$$

Where:

RMR = Required mass removal for treatment process or series of treatment processes, kilograms per hour.

ρ = Density of the Group 1 wastewater stream, kilograms per cubic meter.

Q = Volumetric flow rate of wastewater stream at the point of determination, liters per hour.

i = Identifier for a compound.

n = Number of Table 8 or Table 9 compounds in stream.

C_i = Concentration of Table 8 or Table 9 compounds at the point of determination, parts per million by weight.

Fr_i = Fraction removal value of a Table 8 or Table 9 compound. Fr values are listed in table 9 of this subpart.

10^9 = Conversion factor, mg/kg * l/m³.

- (4) The required mass removal is calculated by adding together the required mass removal for each Group 1 wastewater stream to be combined for treatment.

(5) **Actual mass removal calculation procedure for open or closed aerobic biological treatment processes.**

The actual mass removal (AMR) shall be calculated using Equation WW12 as specified in paragraph (f)(5)(i) of this section when the performance test is performed across the open or closed aerobic biological treatment process only. If compliance is being demonstrated in accordance with § 63.145(a)(7)(i), the AMR for the series shall be calculated using Equation WW13 in § 63.145(f)(5)(ii). (This equation is for situations where treatment is performed in a series of treatment processes connected by hard-piping.) If compliance is being demonstrated in accordance with § 63.145(a)(7)(ii), the AMR for the biological treatment process shall be calculated using Equation WW12 in § 63.145(f)(5)(i). The AMR for the biological treatment process used in a series of treatment processes calculated using Equation WW12 shall be added to the AMR determined for each of the other individual treatment processes in the series of treatment processes.

- (i) Calculate AMR for the open or closed aerobic biological treatment process as follows:

$$AMR = QMW_a * F_{bio} \quad (\text{Eqn WW12})$$

Where:

AMR = Actual mass removal of Table 8 or Table 9 compounds achieved by open or closed biological treatment process, kilograms per hour.

QMW_a = Mass flow rate of Table 8 or Table 9 compounds in wastewater entering the treatment process, kilograms per hour.

F_{bio} = Site-specific fraction of Table 8 or Table 9 compounds biodegraded. F_{bio} shall be determined as specified in § 63.145(h) and appendix C of this subpart.

- (ii) Calculate AMR across a series of treatment units where the last treatment unit is an open or closed aerobic biological treatment process as follows:

$$AMR = QMW_a - (QMW_b)(1 - F_{bio}) \quad (\text{Eqn WW13})$$

Where:

AMR = Actual mass removal of Table 8 or Table 9 compounds achieved by a series of treatment processes, kilograms per hour.

QMW_a = Mass flow rate of Table 8 or Table 9 compounds in wastewater entering the first treatment process in a series of treatment processes, kilograms per hour.

QMW_b = Mass flow rate of Table 8 or Table 9 compounds in wastewater exiting the last treatment process in a series of treatment processes prior to the biological treatment process, kilograms per hour.

F_{bio} = Site-specific fraction of Table 8 or Table 9 compounds biodegraded. F_{bio} shall be determined as specified in § 63.145(h) and appendix C of this subpart.

- (6) **Compare RMR to AMR.** Compare the RMR calculated in Equation WW11 to the AMR calculated in either Equation WW12 or WW13, as applicable. Compliance is demonstrated if the AMR is greater than or equal to the RMR.

- (g) **Open or closed aerobic biological treatment processes: 95-percent mass removal option.** This paragraph applies to performance tests that are conducted for open or closed aerobic biological treatment processes to demonstrate compliance with the 95-percent mass removal provisions for Table 8 and/or Table 9 compounds. This compliance option is specified in § 63.138(g) of this subpart. The RMR for this option is 95-percent mass removal. The owner or operator shall comply with the requirements specified in § 63.145(g)(1) to determine AMR, § 63.145 (e)(3)(ii) and (e)(4)(ii) to determine RMR, and (g)(2) of this subpart to determine whether compliance has been demonstrated. Some compounds may not require a performance test. Refer to § 63.145(h) and table 36 of this subpart to determine which compounds may be exempt from the requirements of this paragraph. (Wastewater streams that are Group 1 for both Table 8 and Table 9 compounds need only do the compliance demonstration for Table 9 compounds.)
- (1) The owner or operator shall comply with the requirements specified in paragraphs (f)(1), (f)(2), and (f)(5) of this section to determine AMR. References to Group 1 wastewater streams shall be deemed Group 1 and Group 2 wastewater streams for the purposes of this paragraph.
- (2) **Compare RMR to AMR.** Compliance is demonstrated if the AMR is greater than or equal to RMR.
- (h) **Site-specific fraction biodegraded (F_{bio}).** The compounds listed in table 9 of this subpart are divided into two sets for the purpose of determining whether F_{bio} must be determined, and if F_{bio} must be determined, which procedures may be used to determine compound-specific kinetic parameters. These sets are designated as lists 1 and 2 in table 36 of this subpart.
- (1) **Performance test exemption.** If a biological treatment process meets the requirements specified in paragraphs (h)(1)(i) and (h)(1)(ii) of this section, the owner or operator is not required to determine F_{bio} and is exempt from the applicable performance test requirements specified in § 63.138 of this subpart.
- (i) The biological treatment process meets the definition of “enhanced biological treatment process” in § 63.111 of this subpart.
- (ii) At least 99 percent by weight of all compounds on table 36 of this subpart that are present in the aggregate of all wastewater streams using the biological treatment process to comply with § 63.138 of this subpart are compounds on list 1 of table 36 of this subpart.
- (2) **F_{bio} determination.** If a biological treatment process does not meet the requirement specified in paragraph (h)(1)(i) of this section, the owner or operator shall determine F_{bio} for the biological treatment process using the procedures in appendix C to part 63, and paragraph (h)(2)(ii) of this section. If a biological treatment process meets the requirements of paragraph (h)(1)(i) of this section but does not meet the requirement specified in paragraph (h)(1)(ii) of this section, the owner or operator shall determine F_{bio} for the biological treatment process using the procedures in appendix C to part 63, and paragraph (h)(2)(i) of this section.
- (i) **Enhanced biological treatment processes.** If the biological treatment process meets the definition of “enhanced biological treatment process” in § 63.111 of this subpart and the wastewater streams include one or more compounds on list 2 of table 36 of this subpart that do not meet the criteria in paragraph (h)(1)(ii) of this section, the owner or operator shall determine f_{bio} for the list 2 compounds using any of the procedures specified in appendix C of 40 CFR part 63. (The symbol “ f_{bio} ” represents the site specific fraction of an individual Table 8 or Table 9 compound that is biodegraded.) The owner or operator shall calculate f_{bio} for the list 1 compounds using the defaults for first order biodegradation rate constants (K_1) in table 37 of subpart G and follow the procedure explained in form III of appendix C, 40 CFR part 63, or any of the procedures specified in appendix C, 40 CFR part 63.

(ii) **Biological treatment processes that are not enhanced biological treatment processes.** For biological treatment processes that do not meet the definition for “enhanced biological treatment process” in § 63.111 of this subpart, the owner or operator shall determine the f_{bio} for the list 1 and 2 compounds using any of the procedures in appendix C to part 63, except procedure 3 (inlet and outlet concentration measurements). (The symbol “ f_{bio} ” represents the site specific fraction of an individual Table 8 or Table 9 compound that is biodegraded.)

(i) **Performance tests for control devices other than flares.** This paragraph applies to performance tests that are conducted to demonstrate compliance of a control device with the efficiency limits specified in § 63.139(c). If complying with the 95-percent reduction efficiency requirement, comply with the requirements specified in paragraphs (i)(1) through (i)(9) of this section. If complying with the 20 ppm by volume requirement, comply with the requirements specified in paragraphs (i)(1) through (6) and (9) of this section. The 20 ppm by volume limit or 95-percent reduction efficiency requirement shall be measured as either total organic hazardous air pollutants or as TOC minus methane and ethane. Performance tests must be conducted according to the schedule in § 63.103(b)(1) of subpart F of this part.

(1) **Sampling sites.** Sampling sites shall be selected using Method 1 or 1A of 40 CFR part 60, appendix A, as appropriate. For determination of compliance with the 95 percent reduction requirement, sampling sites shall be located at the inlet and the outlet of the control device. For determination of compliance with the 20 parts per million by volume limit, the sampling site shall be located at the outlet of the control device.

(2) **Concentration in gas stream entering or exiting the control device.** The concentration of total organic hazardous air pollutants or TOC in a gas stream shall be determined as provided in this paragraph. Samples may be grab samples or composite samples (i.e., integrated samples). Samples shall be taken at approximately equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs. Concentration measurements shall be determined using Method 18 of appendix A-6 to 40 CFR part 60. ASTM D6420-18 (incorporated by reference, see § 63.14) may also be used in lieu of Method 18, if the target compounds are all known and are all listed in Section 1.1 of ASTM D6420-18 as measurable; ASTM D6420-18 must not be used for methane and ethane; and ASTM D6420-18 may not be used as a total VOC method. Alternatively, any other test method validated according to the procedures in Method 301 of appendix A to this part may be used.

(3) **Volumetric flow rate of gas stream entering or exiting the control device.** The volumetric flow rate of the gas stream shall be determined using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A, as appropriate. Volumetric flow rate measurements shall be taken at the same time as the concentration measurements.

(4) **Calculation of TOC concentration.** The TOC concentration (CG_T) is the sum of the concentrations of the individual components. If compliance is being determined based on TOC, the owner or operator shall compute TOC for each run using the following equation:

$$CG_T = \frac{1}{m} \sum_{j=1}^m \left(\sum_{i=1}^n CGS_{i,j} \right) \quad (\text{Eqn WW14})$$

Where:

CG_T = Total concentration of TOC (minus methane and ethane) in vented gas stream, average of samples, dry basis, parts per million by volume.

CGS^i_j = Concentration of sample components in vented gas stream for sample j, dry basis, parts per million by volume.

i = Identifier for a compound.

n = Number of components in the sample.

j = Identifier for a sample.

m = Number of samples in the sample run.

(5) **Calculation of total organic hazardous air pollutants concentration.** The owner or operator determining compliance based on total organic hazardous air pollutants concentration (C_{HAP}) shall compute C_{HAP} according to the Equation WW14, except that only Table 9 compounds shall be summed.

(6) **Percent oxygen correction for combustion control devices.** If the control device is a combustion device, comply with the requirements specified in paragraph (i)(6)(i) of this section to determine oxygen concentration, and in paragraph (i)(6)(ii) of this section to calculate the percent oxygen correction.

(i) **Oxygen concentration.** The concentration of TOC or total organic hazardous air pollutants shall be corrected to 3 percent oxygen if the control device is a combustion device. Method 3A of appendix A-2 to 40 CFR part 60 or the manual method in ANSI/ASME PTC 19.10-1981 (incorporated by reference, see § 63.14) shall be used to determine the actual oxygen concentration (%O_{2d}). The samples shall be taken during the same time that the TOC (minus methane or ethane) or total organic hazardous air pollutants samples are taken.

(ii) **3 percent oxygen calculation.** The concentration corrected to 3 percent oxygen (CG_C), when required, shall be computed using the following equation:

$$CG_C = CG_T \left(\frac{17.9}{20.9 - \%O_{2d}} \right) \quad (\text{Eqn WW15})$$

Where:

CG_C = Concentration of TOC or organic hazardous air pollutants corrected to 3 percent oxygen, dry basis, parts per million by volume.

CG_T = Total concentration of TOC (minus methane and ethane) in vented gas stream, average of samples, dry basis, parts per million by volume.

%O_{2d} = Concentration of oxygen measured in vented gas stream, dry basis, percent by volume.

- (7) **Mass rate calculation.** The mass rate of either TOC (minus methane and ethane) or total organic hazardous air pollutants shall be calculated using the following equations. Where the mass rate of TOC is being calculated, all organic compounds (minus methane and ethane) measured by methods specified in paragraph (i)(2) of this section are summed using Equations WW16 and WW17. Where the mass rate of total organic hazardous air pollutants is being calculated, only Table 9 compounds shall be summed using Equations WW16 and WW17.

$$QMG_a = K_2 \left(\sum_{i=1}^n CG_{a,i} MW_i \right) QG_a \quad (\text{Eqn WW16})$$

$$QMG_b = K_2 \left(\sum_{i=1}^n CG_{b,i} MW_i \right) QG_b \quad (\text{Eqn WW17})$$

Where:

$CG_{a,i}$, $CG_{b,i}$ = Concentration of TOC (minus methane and ethane) or total organic hazardous air pollutants, in vented gas stream, entering ($CG_{a,i}$) and exiting ($CG_{b,i}$) the control device, dry basis, parts per million by volume.

QMG_a , QMG_b = Mass rate of TOC (minus methane and ethane) or total organic hazardous air pollutants, in vented gas stream, entering (QMG_a) and exiting (QMG_b) the control device, dry basis, kilograms per hour.

MW_i = Molecular weight of a component, kilogram/kilogram-mole.

QG_a , QG_b = Flow rate of gas stream entering (QG_a) and exiting (QG_b) the control device, dry standard cubic meters per hour.

K_2 = Constant, 41.57×10^{-9} (parts per million)⁻¹ (gram-mole per standard cubic meter) (kilogram/gram), where standard temperature (gram-mole per standard cubic meter) is 20 °Celsius.

i = Identifier for a compound.

n = Number of components in the sample.

- (8) **Percent reduction calculation.** The percent reduction in TOC (minus methane and ethane) or total organic hazardous air pollutants shall be calculated as follows:

$$E = \frac{QMG_a - QMG_b}{QMG_a} (100\%) \quad (\text{Eqn WW18})$$

Where:

E = Destruction efficiency of control device, percent.

QMG_a , QMG_b = Mass rate of TOC (minus methane and ethane) or total organic hazardous air pollutants, in vented gas stream entering and exiting (QMG_b) the control device, dry basis, kilograms per hour.

- (9) **Compare mass destruction efficiency to required efficiency.** If complying with the 95 percent reduction efficiency requirement, compliance is demonstrated if the mass destruction efficiency (calculated in Equation WW18) is 95 percent or greater. If complying with the 20 parts per million by volume limit in § 63.139 (c)(1)(ii) of this subpart, compliance is demonstrated if the outlet total organic compound concentration, less methane and ethane, or total organic hazardous air pollutants concentration is 20 parts per million by volume, or less. For combustion control devices, the concentration shall be calculated on a dry basis, corrected to 3 percent oxygen.
- (j) Except as specified in paragraph (a) of § 63.108, when a flare is used to comply with § 63.139(c), the owner or operator shall comply with paragraphs (j)(1) through (3) of this section. The owner or operator is not required to conduct a performance test to determine percent emission reduction or outlet organic HAP or TOC concentration.
- (1) Conduct a visible emission test using the techniques specified in § 63.11(b)(4).
- (2) Determine the net heating value of the gas being combusted using the techniques specified in § 63.11(b)(6).
- (3) Determine the exit velocity using the techniques specified in either § 63.11(b)(7)(i) (and § 63.11(b)(7)(iii), where applicable) or § 63.11(b)(8), as appropriate.

[62 FR 2765, Jan. 17, 1997, as amended at 63 FR 67793, Dec. 9, 1998; 64 FR 20192, Apr. 26, 1999; 66 FR 6933, Jan. 22, 2001; 89 FR 43205, May 16, 2024]

§ 63.146 Process wastewater provisions—reporting.

- (a) For each waste management unit, treatment process, or control device used to comply with §§ 63.138 (b)(1), (c)(1), (d), (e), (f), or (g) of this subpart for which the owner or operator seeks to monitor a parameter other than those specified in table 11, table 12, or table 13 of this subpart, the owner or operator shall submit a request for approval to monitor alternative parameters according to the procedures specified in § 63.151(f) or (g) of this subpart.
- (b) The owner or operator shall submit the information specified in paragraphs (b)(1) through (b)(9) of this section as part of the Notification of Compliance Status required by § 63.152(b) of this subpart.
- (1) **Requirements for Group 2 wastewater streams.** This paragraph does not apply to Group 2 wastewater streams that are used to comply with § 63.138(g). For Group 2 wastewater streams, the owner or operator shall include the information specified in paragraphs (b)(1)(i) through (iv) of this section in the Notification of Compliance Status Report. This information may be submitted in any form. Table 15 of this subpart is an example.
- (i) Process unit identification and description of the process unit.
- (ii) Stream identification code.
- (iii) For existing sources, concentration of table 9 compound(s) in parts per million, by weight. For new sources, concentration of table 8 and/or table 9 compound(s) in parts per million, by weight. Include documentation of the methodology used to determine concentration.
- (iv) Flow rate in liter per minute.
- (2) For each new and existing source, the owner or operator shall submit the information specified in table 15 of this subpart for Table 8 and/or Table 9 compounds.

- (3) [Reserved]
- (4) For each treatment process identified in table 15 of this subpart that receives, manages, or treats a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream, the owner or operator shall submit the information specified in table 17 of this subpart.
- (5) For each waste management unit identified in table 15 of this subpart that receives or manages a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream, the owner or operator shall submit the information specified in table 18 of this subpart.
- (6) For each residual removed from a Group 1 wastewater stream, the owner or operator shall report the information specified in table 19 of this subpart.
- (7) For each control device used to comply with §§ 63.133 through 63.139 of this subpart, the owner or operator shall report the information specified in paragraphs (b)(7)(i) and (b)(7)(ii) of this section.
 - (i) Except as specified in paragraph (a) of § 63.108, for each flare, the owner or operator shall submit the information specified in paragraphs (b)(7)(i)(A) through (b)(7)(i)(C) of this section.
 - (A) Flare design (i.e., steam-assisted, air-assisted, or non-assisted);
 - (B) All visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the compliance determination required by § 63.139(c)(3) of this subpart; and
 - (C) Reports of the times and durations of all periods during the compliance determination when the pilot flame is absent or the monitor is not operating.
 - (ii) For each control device other than a flare, the owner or operator shall submit the information specified in paragraph (b)(7)(ii)(A) of this section and in either paragraph (b)(7)(ii)(B) or (b)(7)(ii)(C) of this section.
 - (A) The information on parameter ranges specified in § 63.152(b)(2) of this subpart for the applicable parameters specified in table 13 of this subpart, unless the parameter range has already been established in the operating permit; and either
 - (B) The design evaluation specified in § 63.139(d)(2) of this subpart; or
 - (C) Results of the performance test specified in § 63.139(d)(1) of this subpart. Performance test results shall include operating ranges of key process and control parameters during the performance test; the value of each parameter being monitored in accordance with § 63.143 of this subpart; and applicable supporting calculations. If the performance test report is submitted electronically through the EPA's CEDRI in accordance with § 63.152(h), the process unit(s) tested, the pollutant(s) tested, and the date that such performance test was conducted may be submitted in the notification of compliance status report in lieu of the performance test results. The performance test results must be submitted to CEDRI by the date the notification of compliance status report is submitted.
- (8) For each treatment process used to comply with § 63.138(b)(1), (c)(1), (d), (e), (f), or (g) of this subpart, the owner or operator shall submit the information specified in paragraphs (b)(8)(i) and (b)(8)(ii) of this section.

- (i) For Items 1 and 2 in table 12 of this subpart, the owner or operator shall submit the information specified in paragraphs (b)(8)(i)(A) and (b)(8)(i)(B) of this section. An owner or operator using the design steam stripper compliance option specified § 63.138(d) of this subpart does not have to submit the information specified in paragraph (b)(8)(i)(A) or (b)(8)(i)(B) of this section. However, the monitoring requirements specified in Item 2 of table 12 of this subpart still apply.
 - (A) The information on parameter ranges specified in § 63.152(b)(2) of this subpart for the parameters approved by the Administrator, unless the parameter range has already been established in the operating permit.
 - (B) Results of the initial measurements of the parameters approved by the Administrator and any applicable supporting calculations.
 - (ii) For Item 3 in table 12 of this subpart, the owner or operator shall submit the information on parameter ranges specified in § 63.152(b)(2) of this subpart for the parameters specified in Item 3 of table 12 of this subpart, unless the parameter range has already been established in the operating permit.
- (9) For each waste management unit or treatment process used to comply with § 63.138(b)(1), (c)(1), (e), (f), or (g), the owner or operator shall submit the information specified in either paragraph (b)(9)(i) or (ii) of this section.
- (i) The design evaluation and supporting documentation specified in § 63.138(j)(1) of this subpart.
 - (ii) Results of the performance test specified in § 63.138(j)(2) of this subpart. Performance test results shall include operating ranges of key process and control parameters during the performance test; the value of each parameter being monitored in accordance with § 63.143 of this subpart; and applicable supporting calculations. If the performance test report is submitted electronically through the EPA's CEDRI in accordance with § 63.152(h), the process unit(s) tested, the pollutant(s) tested, and the date that such performance test was conducted may be submitted in the notification of compliance status report in lieu of the performance test results. The performance test results must be submitted to CEDRI by the date the notification of compliance status report is submitted.
- (c) For each waste management unit that receives, manages, or treats a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream, the owner or operator shall submit as part of the next Periodic Report required by § 63.152(c) of this subpart the results of each inspection required by § 63.143(a) of this subpart in which a control equipment failure was identified. Control equipment failure is defined for each waste management unit in §§ 63.133 through 63.137 of this subpart. Each Periodic Report shall include the date of the inspection, identification of each waste management unit in which a control equipment failure was detected, description of the failure, and description of the nature of and date the repair was made.
- (d) Except as provided in paragraph (f) of this section, for each treatment process used to comply with § 63.138(b)(1), (c)(1), (d), (e), (f), or (g), the owner or operator shall submit as part of the next Periodic Report required by § 63.152(c) the information specified in paragraphs (d)(1), (2), and (3) of this section for the monitoring required by § 63.143(b), (c), and (d).
- (1) For Item 1 in table 12, the owner or operator shall submit the results of measurements that indicate that the biological treatment unit is outside the range established in the Notification of Compliance Status or operating permit. Include the identification of the biological treatment unit, the parameter that was out of range and the date that the parameter is out of range.

- (2) For Item 2 in table 12, the owner or operator shall submit the monitoring results for each operating day during which the daily average value of a continuously monitored parameter is outside the range established in the Notification of Compliance Status or operating permit. Include the identification of the treatment process, the parameter that was out of range, and the date the parameter was out of range.
- (3) For Item 3 in table 12 of this subpart, the owner or operator shall submit the monitoring results for each operating day during which the daily average value of any monitored parameter approved in accordance with § 63.151 (f) was outside the range established in the Notification of Compliance Status or operating permit. Include the identification of the treatment process, the parameter that was out of range, and the date the parameter was out of range.
- (e) Except as provided in paragraph (f) of this section, for each control device used to comply with §§ 63.133 through 63.139, the owner or operator shall submit as part of the next Periodic Report required by § 63.152(c) the information specified in either paragraph (e)(1) or (e)(2) of this section.
 - (1) The information specified in table 20 of this subpart, including the date of each occurrence, or
 - (2) If the owner or operator elects to comply with § 63.143(e)(2) of this subpart, i.e., an organic monitoring device installed at the outlet of the control device, the owner or operator shall submit the date and the monitoring results for each operating day during which the daily average concentration level or reading is outside the range established in the Notification of Compliance Status or operating permit.
- (f) Where the owner or operator obtains approval to use a treatment process or control device other than one for which monitoring requirements are specified in § 63.143 of this subpart, or to monitor parameters other than those specified in table 12 or 13 of this subpart, the Administrator will specify appropriate reporting requirements.
- (g) If an extension is utilized in accordance with § 63.133(e)(2) or § 63.133(h) of this subpart, the owner or operator shall include in the next periodic report the information specified in § 63.133 (e)(2) or § 63.133(h).

[62 FR 2774, Jan. 17, 1997, as amended at 64 FR 20192, Apr. 26, 1999; 66 FR 6933, Jan. 22, 2001; 89 FR 43206, May 16, 2024]

§ 63.147 Process wastewater provisions—recordkeeping.

- (a) The owner or operator transferring a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream in accordance with § 63.132(g) of this subpart shall keep a record of the notice sent to the treatment operator stating that the wastewater stream or residual contains organic hazardous air pollutants which are required to be managed and treated in accordance with the provisions of this subpart.
- (b) The owner or operator shall keep in a readily accessible location the records specified in paragraphs (b)(1) through (8) of the section.
 - (1) A record that each waste management unit inspection required by §§ 63.133 through 63.137 of this subpart was performed.
 - (2) A record that each inspection for control devices required by § 63.139 of this subpart was performed.

- (3) A record of the results of each seal gap measurement required by §§ 63.133(d) and 63.137(c) of this subpart. The records shall include the date of the measurement, the raw data obtained in the measurement, and the calculations described in § 63.120(b)(2), (3), and (4) of this subpart.
- (4) For Item 1 and Item 3 of table 12 of this subpart, the owner or operator shall keep the records approved by the Administrator.
- (5) Except as provided in paragraph (e) of this section, continuous records of the monitored parameters specified in Item 2 of table 12 and table 13 of this subpart, and in § 63.143(e)(2) of this subpart.
- (6) Documentation of a decision to use an extension, as specified in § 63.133(e)(2) or (h) of this subpart, which shall include a description of the failure, documentation that alternate storage capacity is unavailable, and specification of a schedule of actions that will ensure that the control equipment will be repaired or the vessel will be emptied as soon as practical.
- (7) Documentation of a decision to use a delay of repair due to unavailability of parts, as specified in § 63.140(c), shall include a description of the failure, the reason additional time was necessary (including a statement of why replacement parts were not kept on site and when the manufacturer promised delivery), and the date when repair was completed.
- (8) **Requirements for Group 2 wastewater streams.** This paragraph (b)(8) does not apply to Group 2 wastewater streams that are used to comply with § 63.138(g). For all other Group 2 wastewater streams, the owner or operator shall keep in a readily accessible location the records specified in paragraphs (b)(8)(i) through (iv) of this section.
 - (i) Process unit identification and description of the process unit.
 - (ii) Stream identification code.
 - (iii) For existing sources, concentration of table 9 compound(s) in parts per million, by weight. For new sources, concentration of table 8 and/or table 9 compound(s) in parts per million, by weight. Include documentation of the methodology used to determine concentration.
 - (iv) Flow rate in liter per minute.
- (c) For each boiler or process heater used to comply with §§ 63.133 through 63.139 of this subpart, the owner or operator shall keep a record of any changes in the location at which the vent stream is introduced into the flame zone as required in § 63.139(c)(1) of this subpart.
- (d) The owner or operator shall keep records of the daily average value of each continuously monitored parameter for each operating day as specified in § 63.152(f), except as provided in paragraphs (d)(1) through (4) of this section.
 - (1) For flares, except as specified in paragraph (a) of § 63.108, records of the times and duration of all periods during which the pilot flame is absent shall be kept rather than daily averages.
 - (2) **Regenerative carbon adsorbers.** Except as specified in paragraph (d)(4) of this section, for regenerative carbon adsorbers, the owner or operator shall keep the records specified in paragraphs (d)(2)(i) and (ii) of this section instead of daily averages.
 - (i) Records of the total regeneration stream mass flow for each carbon bed regeneration cycle.
 - (ii) Records of the temperature of the carbon bed after each regeneration cycle.

- (3) **Non-regenerative carbon adsorbers.** Except as specified in paragraph (d)(4) of this section, for non-regenerative carbon adsorbers using organic monitoring equipment, the owner or operator shall keep the records specified in paragraph (d)(3)(i) of this section instead of daily averages. For non-regenerative carbon adsorbers replacing the carbon adsorption system with fresh carbon at a regular predetermined time interval that is less than the carbon replacement interval that is determined by the maximum design flow rate and organic concentration in the gas stream vented to the carbon adsorption system, the owner or operator shall keep the records specified in paragraph (d)(3)(ii) of this section instead of daily averages.

(i)

- (A) Record of how the monitoring frequency, as specified in table 13 of this subpart, was determined.
- (B) Records of when organic compound concentration of adsorber exhaust was monitored.
- (C) Records of when the carbon was replaced.

(ii)

- (A) Record of how the carbon replacement interval, as specified in table 13 of this subpart, was determined.
- (B) Records of when the carbon was replaced.

- (4) For each nonregenerative adsorber and regenerative adsorber that is regenerated offsite subject to the requirements in § 63.139(d)(5), the owner or operator must keep the applicable records specified in (d)(4)(i) through (d)(4)(iii) of this section.

- (i) Breakthrough limit and bed life established according to § 63.139(d)(5)(i).
- (ii) Each outlet HAP or TOC concentration measured according to §§ 63.139(d)(5)(ii) and (d)(5)(iii).
- (iii) Date and time you last replaced the adsorbent.

- (e) Where the owner or operator obtains approval to use a control device other than one for which monitoring requirements are specified in § 63.143 of this subpart, or to monitor parameters other than those specified in table 12 or table 13 of this subpart, the Administrator will specify appropriate recordkeeping requirements.

- (f) If the owner or operator uses process knowledge to determine the annual average concentration of a wastewater stream as specified in § 63.144(b)(3) of this subpart and/or uses process knowledge to determine the annual average flow rate as specified in § 63.144(c)(1) of this subpart, and determines that the wastewater stream is not a Group 1 wastewater stream, the owner or operator shall keep in a readily accessible location the documentation of how process knowledge was used to determine the annual average concentration and/or the annual average flow rate of the wastewater stream.

[62 FR 2775, Jan. 17, 1997, as amended at 64 FR 20192, Apr. 26, 1999; 66 FR 6933, Jan. 22, 2001; 89 FR 43206, May 16, 2024]

§ 63.148 Leak inspection provisions.

- (a) Except as provided in paragraph (k) of this section, for each vapor collection system, closed vent system, fixed roof, cover, or enclosure required to comply with this section, the owner or operator shall comply with the requirements of paragraphs (b) through (j) of this section.

- (b) Except as provided in paragraphs (g) and (h) of this section, each vapor collection system and closed vent system shall be inspected according to the procedures and schedule specified in paragraphs (b)(1) and (b)(2) of this section and each fixed roof, cover, and enclosure shall be inspected according to the procedures and schedule specified in paragraph (b)(3) of this section.
 - (1) If the vapor collection system or closed vent system is constructed of hard-piping, the owner or operator shall:
 - (i) Conduct an initial inspection according to the procedures in paragraph (c) of this section, and
 - (ii) Conduct annual visual inspections for visible, audible, or olfactory indications of leaks.
 - (2) If the vapor collection system or closed vent system is constructed of ductwork, the owner or operator shall:
 - (i) Conduct an initial inspection according to the procedures in paragraph (c) of this section, and
 - (ii) Conduct annual inspections according to the procedures in paragraph (c) of this section.
 - (iii) Conduct annual visual inspections for visible, audible, or olfactory indications of leaks.
 - (3) For each fixed roof, cover, and enclosure, the owner or operator shall conduct initial visual inspections and semi-annual visual inspections for visible, audible, or olfactory indications of leaks as specified in §§ 63.133 through 63.137 of this subpart.
- (c) Each vapor collection system and closed vent system shall be inspected according to the procedures specified in paragraphs (c)(1) through (c)(5) of this section.
 - (1) Inspections shall be conducted in accordance with Method 21 of 40 CFR part 60, appendix A.
 - (2)
 - (i) Except as provided in paragraph (c)(2)(ii) of this section, the detection instrument shall meet the performance criteria of Method 21 of 40 CFR part 60, appendix A, except the instrument response factor criteria in section 3.1.2(a) of Method 21 shall be for the average composition of the process fluid not each individual volatile organic compound in the stream. For process streams that contain nitrogen, air, or other inerts which are not organic hazardous air pollutants or volatile organic compounds, the average stream response factor shall be calculated on an inert-free basis.
 - (ii) If no instrument is available at the plant site that will meet the performance criteria specified in paragraph (c)(2)(i) of this section, the instrument readings may be adjusted by multiplying by the average response factor of the process fluid, calculated on an inert-free basis as described in paragraph (c)(2)(i) of this section.
 - (3) The detection instrument shall be calibrated before use on each day of its use by the procedures specified in Method 21 of 40 CFR part 60, appendix A.
 - (4) Calibration gases shall be as follows:
 - (i) Zero air (less than 10 parts per million hydrocarbon in air); and

- (ii) Mixtures of methane in air at a concentration less than 10,000 parts per million. A calibration gas other than methane in air may be used if the instrument does not respond to methane or if the instrument does not meet the performance criteria specified in paragraph (c)(2)(i) of this section. In such cases, the calibration gas may be a mixture of one or more of the compounds to be measured in air.
- (5) An owner or operator may elect to adjust or not adjust instrument readings for background. If an owner or operator elects to not adjust readings for background, all such instrument readings shall be compared directly to the applicable leak definition to determine whether there is a leak. If an owner or operator elects to adjust instrument readings for background, the owner or operator shall measure background concentration using the procedures in §§ 63.180(b) and (c) of subpart H of this part. The owner or operator shall subtract background reading from the maximum concentration indicated by the instrument.
- (6) The arithmetic difference between the maximum concentration indicated by the instrument and the background level shall be compared with 500 parts per million for determining compliance.
- (d) Leaks, as indicated by an instrument reading greater than 500 parts per million above background or by visual inspections, shall be repaired as soon as practicable, except as provided in paragraph (e) of this section.
 - (1) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.
 - (2) Repair shall be completed no later than 15 calendar days after the leak is detected, except as provided in paragraph (d)(3) of this section.
 - (3) For leaks found in vapor collection systems used for transfer operations, repairs shall be completed no later than 15 calendar days after the leak is detected or at the beginning of the next transfer loading operation, whichever is later.
- (e) Delay of repair of a vapor collection system, closed vent system, fixed roof, cover, or enclosure for which leaks have been detected is allowed if the repair is technically infeasible without a shutdown, as defined in § 63.101 of subpart F of this part, or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next shutdown.
- (f) For each vapor collection system or closed vent system that contains bypass lines that could divert a vent stream away from the control device and to the atmosphere, the owner or operator shall comply with the provisions of either paragraph (f)(1) or (f)(2), and (f)(4) of this section, except as provided in paragraph (f)(3) of this section.
 - (1) Install, calibrate, maintain, and operate a flow indicator that determines whether vent stream flow is present at least once every 15 minutes. Records shall be generated as specified in § 63.118(a)(3) of this subpart. The flow indicator shall be installed at the entrance to any bypass line; or
 - (2) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure the valve is maintained in the closed position and the vent stream is not diverted through the bypass line.
 - (3) Except as specified in paragraph (f)(4) of this section, equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and pressure relief valves needed for safety purposes are not subject to this paragraph.

- (4) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10):
 - (i) The use of a bypass line at any time on a closed vent system to divert emissions (subject to the emission suppression requirements specified in §§ 63.133 through 63.137) to the atmosphere or to a control device not meeting the requirements specified in this subpart is an emissions standards violation.
 - (ii) Paragraph (f)(3) of this section no longer applies. Instead, the exemptions specified in paragraphs (f)(4)(ii)(A) and (f)(4)(ii)(B) of this section apply.
 - (A) Except for pressure relief devices subject to § 63.165(e)(4), equipment such as low leg drains and equipment subject to the requirements of subpart H of this part are not subject to this paragraph (f) of this section.
 - (B) Open-ended valves or lines that use a cap, blind flange, plug, or second valve and follow the requirements specified in 40 CFR 60.482-6(a)(2), (b), and (c) or follow requirements codified in another regulation that are the same as 40 CFR 60.482-6(a)(2), (b), and (c) are not subject to this paragraph (f) of this section.
- (g) Any parts of the vapor collection system, closed vent system, fixed roof, cover, or enclosure that are designated, as described in paragraph (i)(1) of this section, as unsafe to inspect are exempt from the inspection requirements of paragraphs (b)(1), (b)(2), and (b)(3)(i) of this section if:
 - (1) The owner or operator determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with paragraphs (b)(1), (b)(2), or (b)(3)(i) of this section; and
 - (2) The owner or operator has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times.
- (h) Any parts of the vapor collection system, closed vent system, fixed roof, cover, or enclosure that are designated, as described in paragraph (i)(2) of this section, as difficult to inspect are exempt from the inspection requirements of paragraphs (b)(1), (b)(2), and (b)(3)(i) of this section if:
 - (1) The owner or operator determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface; and
 - (2) The owner or operator has a written plan that requires inspection of the equipment at least once every 5 years.
- (i) The owner or operator shall record the information specified in paragraphs (i)(1) through (i)(5) of this section.
 - (1) Identification of all parts of the vapor collection system, closed vent system, fixed roof, cover, or enclosure that are designated as unsafe to inspect, an explanation of why the equipment is unsafe to inspect, and the plan for inspecting the equipment.
 - (2) Identification of all parts of the vapor collection system, closed vent system, fixed roof, cover, or enclosure that are designated as difficult to inspect, an explanation of why the equipment is difficult to inspect, and the plan for inspecting the equipment.

- (3) For each vapor collection system or closed vent system that contains bypass lines that could divert a vent stream away from the control device and to the atmosphere, the owner or operator shall keep a record of the information specified in either paragraph (i)(3)(i) or (i)(3)(ii) of this section in addition to the information specified in paragraph (i)(3)(iii) of this section.
 - (i) Hourly records of whether the flow indicator specified under paragraph (f)(1) of this section was operating and whether a diversion was detected at any time during the hour, as well as records of the times of all periods when the vent stream is diverted from the control device or the flow indicator is not operating.
 - (ii) Where a seal mechanism is used to comply with paragraph (f)(2) of this section, hourly records of flow are not required. In such cases, the owner or operator shall record whether the monthly visual inspection of the seals or closure mechanisms has been done, and shall record the occurrence of all periods when the seal mechanism is broken, the bypass line valve position has changed, or the key for a lock-and-key type configuration has been checked out, and records of any car-seal that has broken.
 - (iii) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), the owner or operator must comply with this paragraph in addition to the requirements in paragraphs (i)(3)(i) or (i)(3)(ii) of this section. For each flow event from a bypass line subject to the requirements in paragraph (f) of this section, the owner or operator must maintain records sufficient to determine whether or not the detected flow included flow requiring control. For each flow event from a bypass line requiring control that is released either directly to the atmosphere or to a control device not meeting the requirements in this subpart, the owner or operator must include an estimate of the volume of gas, the concentration of organic HAP in the gas and the resulting emissions of organic HAP that bypassed the control device using process knowledge and engineering estimates.
- (4) For each inspection during which a leak is detected, a record of the information specified in paragraphs (i)(4)(i) through (i)(4)(viii) of this section.
 - (i) The instrument identification numbers; operator name or initials; and identification of the equipment.
 - (ii) The date the leak was detected and the date of the first attempt to repair the leak.
 - (iii) Maximum instrument reading measured by the method specified in paragraph (d) of this section after the leak is successfully repaired or determined to be nonreparable.
 - (iv) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.
 - (v) The name, initials, or other form of identification of the owner or operator (or designee) whose decision it was that repair could not be effected without a shutdown.
 - (vi) The expected date of successful repair of the leak if a leak is not repaired within 15 calendar days.
 - (vii) Dates of shutdowns that occur while the equipment is unrepaired.
 - (viii) The date of successful repair of the leak.

- (5) For each inspection conducted in accordance with paragraph (c) of this section during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.
- (6) For each visual inspection conducted in accordance with paragraph (b)(1)(ii) or (b)(3)(ii) of this section during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.
- (j) The owner or operator shall submit with the reports required by § 63.182(b) of subpart H of this part or with the reports required by § 63.152(c) of this subpart, the information specified in paragraphs (j)(1) through (3) of this section and if applicable, the information in paragraph (j)(4) of this section.
 - (1) The information specified in paragraph (i)(4) of this section;
 - (2) Reports of the times of all periods recorded under paragraph (i)(3)(i) of this section when the vent stream is diverted from the control device through a bypass line, including the start date, start time, and duration in hours; and
 - (3) Reports of all periods recorded under paragraph (i)(3)(ii) of this section in which the seal mechanism is broken, the bypass line valve position has changed, or the key to unlock the bypass line valve was checked out. Include the start date, start time, and duration in hours for each period.
 - (4) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), the owner or operator must comply with this paragraph in addition to the requirements in paragraphs (j)(1) through (3) of this section. For bypass lines subject to the requirements in paragraph (f) of this section, the Periodic Report must include the start date, start time, duration in hours, estimate of the volume of gas in standard cubic feet, the concentration of organic HAP in the gas in parts per million by volume and the resulting mass emissions of organic HAP in pounds that bypass a control device. For periods when the flow indicator is not operating, report the start date, start time, and duration in hours.
- (k) If a closed vent system subject to this section is also subject to § 63.172, the owner or operator shall comply with the provisions of § 63.172 and is exempt from the requirements of this section.

[59 FR 19468, Apr. 22, 1994, as amended at 60 FR 63628, Dec. 12, 1995; 62 FR 2775, Jan. 17, 1997; 64 FR 20192, Apr. 26, 1999; 89 FR 43206, May 16, 2024]

§ 63.149 Control requirements for certain liquid streams in open systems within a chemical manufacturing process unit.

- (a) The owner or operator shall comply with the provisions of table 35 of this subpart, for each item of equipment meeting all the criteria specified in paragraphs (b) through (d) and either paragraph (e)(1) or (e)(2) of this section.
- (b) The item of equipment is of a type identified in table 35 of this subpart;
- (c) The item of equipment is part of a chemical manufacturing process unit that meets the criteria of § 63.100(b) of subpart F of this part;
- (d) The item of equipment is controlled less stringently than in table 35 and is not listed in § 63.100(f) of subpart F of this part, and the item of equipment is not otherwise exempt from controls by the provisions of subparts A, F, G, or H of this part; and

(e) The item of equipment:

- (1) is a drain, drain hub, manhole, lift station, trench, pipe, or oil/water separator that conveys water with a total annual average concentration greater than or equal to 10,000 parts per million by weight of Table 9 compounds at any flowrate; or a total annual average concentration greater than or equal to 1,000 parts per million by weight of Table 9 compounds at an annual average flow rate greater than or equal to 10 liters per minute. At a chemical manufacturing process unit subject to the new source requirements of 40 CFR 63.100(l)(1) or 40 CFR 63.100(l)(2), the criteria of this paragraph are also met if the item of equipment conveys water with an annual average concentration greater than or equal to 10 parts per million by weight of any Table 8 compound at an annual average flow rate greater than or equal to 0.02 liter per minute, or
- (2) Is a tank that receives one or more streams that contain water with a total annual average concentration greater than or equal to 1,000 ppm (by weight) of Table 9 compounds at an annual average flowrate greater than or equal to 10 liters per minute. At a chemical manufacturing process unit subject to the new source requirements of 40 CFR 63.100(l)(1) or 40 CFR 63.100(l)(2), the criteria of this paragraph are also met if the tank receives one or more streams that contain water with an annual average concentration greater than or equal to 10 parts per million by weight of any Table 8 compound at an annual average flow rate greater than or equal to 0.02 liter per minute. The owner or operator of the source shall determine the characteristics of the stream as specified in paragraphs (e)(2)(i) and (ii) of this section.
 - (i) The characteristics of the stream being received shall be determined at the inlet to the tank.
 - (ii) The characteristics shall be determined according to the procedures in § 63.144 (b) and (c).

[62 FR 2776, Jan. 17, 1997]

§ 63.150 Emissions averaging provisions.

- (a) This section applies to owners or operators of existing sources who seek to comply with the emission standard in § 63.112(a) of this subpart by using emissions averaging according to § 63.112(f) of this subpart rather than following the provisions of §§ 63.113 through 63.148 of this subpart. Notwithstanding the definition of process vent in § 63.101 and the sampling site designation in § 63.115(a), for purposes of this section the location of a process vent shall be defined, and the characteristics of its gas stream shall be determined, consistent with paragraph (g)(2)(i) of this section.
- (b) Unless an operating permit application has been submitted, the owner or operator shall develop and submit for approval an Implementation Plan containing all of the information required in § 63.151(d) of this subpart for all points to be included in an emissions average. The Implementation Plan or operating permit application shall identify all emission points to be included in the emissions average. This must include any Group 1 emission points to which the reference control technology (defined in § 63.111 of this subpart) is not applied and all other emission points being controlled as part of the average.
- (c) The following emission points can be used to generate emissions averaging credits, if control was applied after November 15, 1990 and if sufficient information is available to determine the appropriate value of credits for the emission point:
 - (1) Group 2 emission points.

- (2) Group 1 emission points that are controlled by a technology that the Administrator or permitting authority agrees has a higher nominal efficiency than the reference control technology. Information on the nominal efficiencies for such technologies must be submitted and approved as provided in paragraph (i) of this section.
- (3) Emission points from which emissions are reduced by pollution prevention measures. Percent reductions for pollution prevention measures shall be determined as specified in paragraph (j) of this section.
 - (i) For a Group 1 emission point, the pollution prevention measure must reduce emissions more than the reference control technology would have had the reference control technology been applied to the emission point instead of the pollution prevention measure except as provided in paragraph (c)(3)(ii) of this section.
 - (ii) If a pollution prevention measure is used in conjunction with other controls for a Group 1 emission point, the pollution prevention measure alone does not have to reduce emissions more than the reference control technology, but the combination of the pollution prevention measure and other controls must reduce emissions more than the reference control technology would have had it been applied instead.
- (d) The following emission points cannot be used to generate emissions averaging credits:
 - (1) Emission points already controlled on or before November 15, 1990, unless the level of control is increased after November 15, 1990, in which case credit will be allowed only for the increase in control after November 15, 1990.
 - (2) Group 1 emission points that are controlled by a reference control technology, unless the reference control technology has been approved for use in a different manner and a higher nominal efficiency has been assigned according to the procedures in paragraph (i) of this section. For example, it is not allowable to claim that an internal floating roof meeting the specifications of § 63.119(b) of this subpart applied to a storage vessel is achieving greater than 95 percent control.
 - (3) Emission points on shut-down process units. Process units that are shut down cannot be used to generate credits or debits.
 - (4) Wastewater that is not process wastewater or wastewater streams treated in biological treatment units. These two types of wastewater cannot be used to generate credits or debits. For the purposes of this section, the terms wastewater and wastewater stream are used to mean process wastewater.
 - (5) Emission points controlled to comply with a State or Federal rule other than this subpart, unless the level of control has been increased after November 15, 1990 above what is required by the other State or Federal rule. Only the control above what is required by the other State or Federal rule will be credited. However, if an emission point has been used to generate emissions averaging credit in an approved emissions average, and the point is subsequently made subject to a State or Federal rule other than this subpart, the point can continue to generate emissions averaging credit for the purpose of complying with the previously approved average.
- (e) For all points included in an emissions average, the owner or operator shall:
 - (1) Calculate and record monthly debits for all Group 1 emission points that are controlled to a level less stringent than the reference control technology for those emission points. Equations in paragraph (g) of this section shall be used to calculate debits.

- (2) Calculate and record monthly credits for all Group 1 or Group 2 emission points that are overcontrolled to compensate for the debits. Equations in paragraph (h) of this section shall be used to calculate credits. Emission points and controls that meet the criteria of paragraph (c) of this section may be included in the credit calculation, whereas those described in paragraph (d) of this section shall not be included.
- (3) Demonstrate that annual credits calculated according to paragraph (h) of this section are greater than or equal to debits calculated for the same annual compliance period according to paragraph (g) of this section.
 - (i) The owner or operator may choose to include more than the required number of credit-generating emission points in an average in order to increase the likelihood of being in compliance.
 - (ii) The initial demonstration in the Implementation Plan or operating permit application that credit-generating emission points will be capable of generating sufficient credits to offset the debits from the debit-generating emission points must be made under representative operating conditions. After the compliance date, actual operating data will be used for all debit and credit calculations.
- (4) Demonstrate that debits calculated for a quarterly (3-month) period according to paragraph (g) of this section are not more than 1.30 times the credits for the same period calculated according to paragraph (h) of this section. Compliance for the quarter shall be determined based on the ratio of credits and debits from that quarter, with 30 percent more debits than credits allowed on a quarterly basis.
- (5) Record and report quarterly and annual credits and debits in the Periodic Reports as specified in § 63.152(c) of this subpart. Every fourth Periodic Report shall include a certification of compliance with the emissions averaging provisions as required by § 63.152(c)(5)(iv)(B) of this subpart.
- (f) Debits and credits shall be calculated in accordance with the methods and procedures specified in paragraphs (g) and (h) of this section, respectively, and shall not include emissions from the following:
 - (1) More than 20 individual Group 1 or Group 2 emission points. Where pollution prevention measures (as specified in paragraph (j)(1) of this section) are used to control emission points to be included in an emissions average, no more than 25 emission points may be included in the average. For example, if two emission points to be included in an emissions average are controlled by pollution prevention measures, the average may include up to 22 emission points.
 - (2) Periods of start-up, shutdown, and malfunction as described in the source's start-up, shutdown, and malfunction plan required by § 63.6(e)(3). For each source as defined in § 63.101, on and after July 15, 2027, this paragraph no longer applies.
 - (3) Periods of monitoring excursions as defined in § 63.152(c)(2)(ii)(A) of this subpart. For these periods, the calculation of monthly credits and debits shall be adjusted as specified in paragraphs (f)(3)(i) through (f)(3)(iii) of this section.
 - (i) No credits would be assigned to the credit-generating emission point.
 - (ii) Maximum debits would be assigned to the debit-generating emission point.
 - (iii) The owner or operator may demonstrate to the Administrator that full or partial credits or debits should be assigned using the procedures in paragraph (l) of this section.

- (g) Debits are generated by the difference between the actual emissions from a Group 1 emission point that is uncontrolled or is controlled to a level less stringent than the reference control technology, and the emissions allowed for the Group 1 emission point. Debits shall be calculated as follows:

- (1) The overall equation for calculating source-wide debits is:

$$\begin{aligned} \text{Debits} = & \sum_{i=1}^n \left(\text{EPV}_{i\text{ACTUAL}} - (0.02)\text{EPV}_{iu} \right) + \sum_{i=1}^n \left(\text{ES}_{i\text{ACTUAL}} \right. \\ & \left. - (0.05)\text{ES}_{iu} \right) + \sum_{i=1}^n \left(\text{ETR}_{i\text{ACTUAL}} - (0.02)\text{ETR}_{iu} \right) \\ & + \sum_{i=1}^n \left(\text{EWW}_{i\text{ACTUAL}} - \text{EWW}_{ic} \right) \end{aligned}$$

where:

Debits and all terms of the equation are in units of megagrams per month, and

$\text{EPV}_{i\text{ACTUAL}}$ = Emissions from each Group 1 process vent i that is uncontrolled or is controlled to a level less stringent than the reference control technology. This is calculated according to paragraph (g)(2) of this section.

$(0.02) \text{EPV}_{iu}$ = Emissions from each Group 1 vent i if the reference control technology had been applied to the uncontrolled emissions, calculated according to paragraph (g)(2) of this section.

$\text{ES}_{i\text{ACTUAL}}$ = Emissions from each Group 1 storage vessel i that is uncontrolled or is controlled to a level less stringent than the reference control technology. This is calculated according to paragraph (g)(3) of this section.

$(0.05) \text{ES}_{iu}$ = Emissions from each Group 1 storage vessel i if the reference control technology had been applied to the uncontrolled emissions, calculated according to paragraph (g)(3) of this section.

$\text{ETR}_{i\text{ACTUAL}}$ = Emissions from each Group 1 transfer rack i that is uncontrolled or is controlled to a level less stringent than the reference control technology. This is calculated according to paragraph (g)(4) of this section.

$(0.02) \text{ETR}_{iu}$ = Emissions from each Group 1 transfer rack i if the reference control technology had been applied to the uncontrolled emissions, calculated according to paragraph (g)(4) of this section.

$\text{EWW}_{i\text{ACTUAL}}$ = Emissions from each Group 1 wastewater stream i that is uncontrolled or is controlled to a level less stringent than the reference control technology. This is calculated according to paragraph (g)(5) of this section.

EWW_{ic} = Emissions from each Group 1 wastewater stream i if the reference control technology had been applied to the uncontrolled emissions. This is calculated according to paragraph (g)(5) of this section.

n = The number of emission points being included in the emissions average. The value of n is not necessarily the same for process vents, storage vessels, transfer racks, and wastewater.

- (2) Emissions from process vents shall be calculated according to paragraphs (g)(2)(i) through (iii) of this section.
- (i) The location of a process vent shall be defined, and the characteristics of its gas stream shall be determined at a point that meets the conditions in either paragraph (g)(2)(i)(A) or (B) of this section and the conditions in paragraphs (g)(2)(i)(C) through (E) of this section.
- (A) The point is after the final recovery device (if any recovery devices are present).
- (B) If a gas stream included in an emissions average is combined with one or more other gas streams after a final recovery device (if any recovery devices are present), then for each gas stream, the point is at a representative point after any final recovery device and as near as feasible to, but before, the point of combination of the gas streams.
- (C) The point is before any control device (for process vents, recovery devices shall not be considered control devices).
- (D) The point is before discharge to the atmosphere.
- (E) The measurement site for determination of the characteristics of the gas stream was selected using Method 1 or 1A of 40 CFR part 60, appendix A.
- (ii) The following equation shall be used for each process vent i to calculate EPV_{iu} :

$$EPV_{iu} = (2.494 \times 10^{-9}) Qh \left(\sum_{j=1}^n C_j M_j \right)$$

Where:

EPV_{iu} = Uncontrolled process vent emission rate from process vent i, megagrams per month.

Q = Vent stream flow rate, dry standard cubic meters per minute, measured using Method 2, 2A, 2C, or 2D of part 60, appendix A, as appropriate.

h = Monthly hours of operation during which positive flow is present in the vent, hours per month.

C_j = Concentration, parts per million by volume, dry basis, of organic HAP j as measured by Method 18 of part 60, appendix A, or ASTM D6420-18 (incorporated by reference, see § 63.14).

M_j = Molecular weight of organic HAP j, gram per gram-mole.

n = Number of organic HAP's.

- (A) The values of Q, C_j , and M_j shall be determined during a performance test conducted under representative operating conditions as specified in § 63.103(b)(3). The values of Q, C_j , and M_j shall be established in the Notification of Compliance Status and must be updated as provided in paragraph (g)(2)(ii)(B) of this section.

(iii) The following procedures and equations shall be used to calculate $EPV_{iACTUAL}$:

- (A) If the vent is not controlled by a control device or pollution prevention measure, $EPV_{iACTUAL} = EPV_{iu}$, where EPV_{iu} is calculated according to the procedures in paragraphs (g)(2)(i) and (g)(2)(ii) of this section.
- (B) If the vent is controlled using a control device or a pollution prevention measure achieving less than 98-percent reduction,

$$EPV_{iACTUAL} = EPV_{iu} \times \left(1 - \frac{\text{Percent reduction}}{100\%} \right)$$

- (1) The percent reduction shall be measured according to the procedures in § 63.116 of this subpart if a combustion control device is used. For a flare meeting the criteria in § 63.116(a) of this subpart, or a boiler or process heater meeting the criteria in § 63.116(b) of this subpart, the percent reduction shall be 98 percent. If a non-combustion control device is used, percent reduction shall be demonstrated by a performance test at the inlet and outlet of the device, or, if testing is not feasible, by a control design evaluation and documented engineering calculations.
- (2) For determining debits from Group 1 process vents, recovery devices shall not be considered control devices and cannot be assigned a percent reduction in calculating $EPV_{iACTUAL}$. The sampling site for measurement of uncontrolled emissions is after the final recovery device. However, as provided in § 63.113(a)(3), except as specified in § 63.113(a)(4), a Group 1 process vent may add sufficient recovery to raise the TRE index value above 1.0, thereby becoming a Group 2 process vent.
- (3) Procedures for calculating the percent reduction of pollution prevention measures are specified in paragraph (j) of this section.
- (3) Emissions from storage vessels shall be calculated as follows:
- (i) The following equation shall be used for each storage vessel i to calculate ES_{iu} :

$$ES_{iu} = \frac{L_B + L_W}{12}$$

where:

ES_{iu} = Uncontrolled emissions, defined as emissions from a fixed roof vessel having identical dimensions and vessel color as vessel i, megagrams per month.

L_B = Breathing loss emissions, megagrams per year, calculated according to paragraph (g)(3)(i)(A) of this section.

L_W = Working loss emissions, megagrams per year, calculated according to paragraph (g)(3)(i)(B) of this section.

12 = Constant, months per year.

(A) Breathing loss emissions shall be calculated using the following equation:

$$L_B = 1.02 \times 10^{-5} M_v \left(\frac{P}{P_A - P} \right) 0.68 D^{1.73} H^{0.51} \Delta T^{0.50} F_p C K_C$$

where:

M_v = Molecular weight of vapor in storage vessel, pound per pound-mole.

P_A = Average atmospheric pressure, pounds per square inch absolute.

P = True vapor pressure of the HAP at liquid storage temperature, pounds per square inch absolute. See table 21 of this subpart.

D = Tank diameter, feet.

H = Average vapor space height, feet. Use vessel-specific values or an assumed value of one-half the height.

ΔT = Average ambient diurnal temperature change, °F. A typical value of 20 °F may be used.

F_p = Paint factor, dimensionless, from table 22 of this subpart; use $F_p = 1$ for vessels located indoors.

C = Adjustment factor for small diameter tanks, dimensionless; use $C = 1$ for diameter ≥ 30 feet; use $C = 0.0771D - 0.0013D^2 - 0.1334$ for diameter < 30 feet.

K_C = Product factor, dimensionless. Use 1.0 for organic HAP's.

(B) Working losses shall be calculated using the following equation:

$$L_W = 1.089 \times 10^{-8} M_v (P)(V)(N) (K_N) (K_C)$$

where:

V = Tank capacity, gallon.

N = Number of turnovers per year.

K_N = Turnover factor, dimensionless, and

$$K_N = \frac{180 + N}{6N} \text{ for turnovers } > 36$$

$$K_N = 1 \text{ for turnovers } \leq 36.$$

M_v , P , and K_C as defined in paragraph (g)(3)(i)(A) of this section.

- (C) The owner or operator may elect to calculate ES_{iu} in accordance with the methods described in American Petroleum Institute Publication 2518, Evaporative Loss from Fixed-Roof Tanks (incorporated by reference as specified in § 63.14 of this part).
- (1) The owner or operator who elects to use these alternative methods must use them for all storage vessels included in the emissions average as debit or credit generating points.
- (2) The equations of paragraphs (g)(3)(i)(A) and (g)(3)(i)(B) of this section shall not be used in conjunction with the alternative methods provided under paragraph (g)(3)(i)(C) of this section.
- (ii) The following procedures and equations shall be used for each fixed roof storage vessel i that is not controlled with a floating roof to calculate $ES_{iACTUAL}$:
- (A) If the vessel is not controlled, $ES_{iACTUAL} = ES_{iu}$, where ES_{iu} is calculated according to the procedures in paragraph (g)(3)(i) of this section.
- (B) Except as provided in paragraph (g)(3)(ii)(C) of this section, if the vessel is controlled using a control device or pollution prevention measure achieving less than 95-percent reduction,

$$ES_{iACTUAL} = ES_{iu} * \left(\frac{1 - \text{Percent reduction}}{100} \right)$$

- (1) The percent reduction for a control device shall be determined through a design evaluation according to the procedures specified in § 63.120(d) of this subpart.
- (2) Procedures for calculating the percent reduction for pollution prevention measures are specified in paragraph (j) of this section.
- (C) If the vessel is controlled according to the provisions of § 63.119(e)(2) of this section whereby the control device is only required to achieve at least 90-percent reduction, the vessel shall not be considered to be generating debits.
- (iii) The following equation shall be used for each internal floating roof vessel i that does not meet the specifications of § 63.119(b) or (d) of this subpart to calculate $ES_{iACTUAL}$:

$$ES_{iACTUAL} = \frac{L_W + L_R + L_F + L_D}{12}$$

where:

L_W = Withdrawal loss emissions, megagrams per year, calculated according to paragraph (g)(3)(iii)(A) of this section.

L_R = Rim seal loss emissions, megagrams per year, calculated according to paragraph (g)(3)(iii)(B) of this section.

L_F = Fitting loss emissions, megagrams per year, calculated according to paragraph (g)(3)(iii)(C) of this section.

L_D = Deck seam loss emissions, megagrams per year, calculated according to paragraph (g)(3)(iii)(D) of this section.

12 = Constant, months per year.

(A) Withdrawal loss emissions shall be calculated using the following equation:

$$L_W = \frac{1.018 \times 10^{-5} Q C W_L}{D} \left[1 + \left(\frac{N_c F_c}{D} \right) \right]$$

where:

Q = Throughput, gallon per year; (gallon/turnover) * (turnovers per year).

C = Shell clingage factor, barrel per 1,000 square foot, see table 23 of this subpart.

WL = Average liquid density, pound per gallon.

D = Tank diameter, feet.

N_c = Number of columns, dimensionless, see table 24 of this subpart.

F_c = Effective column diameter, feet [column perimeter (feet) $\div$ 3.1416], see table 25 of this subpart.

(B) Rim seal loss emissions shall be calculated using the following equation:

$$L_R = \frac{K_s V^n P^* D M_v K_c}{2,205}$$

where:

M_v = Molecular weight of vapor in storage vessel, pound per pound-mole.

D = Tank diameter, feet.

K_c = Product factor, dimensionless; use 1.0 for organic HAP's.

K_s = Seal factor, pound-mole per [foot (miles per hour)ⁿ year], see table 26 of this subpart.

V = Average wind speed at the source, miles per hour. A value of 10 miles per hour may be assumed if source-specific data are not available.

n = Seal related wind speed exponent, dimensionless, see table 26 of this subpart.

2,205 = Constant, pounds per megagram.

P^* = Vapor pressure function, dimensionless, and

$$P^* = \frac{\frac{P}{P_A}}{\left[1 + \left(1 - \frac{P}{P_A}\right)0.5\right]^2}$$

where:

P_A = Average atmospheric pressure, pounds per square inch absolute.

P = True vapor pressure at liquid storage temperature, pounds per square inch absolute.

(C) Fitting loss emissions shall be calculated using the following equation:

$$L_F = \frac{F_f P^* M_v K_c}{2,205}$$

where:

F_f = The total deck fitting loss factor, pound-mole per year, and

where:

$$F_f = \sum_{i=1}^n (N_{F_i} K_{F_i}) = \left[(N_{F_1} K_{F_1}) + (N_{F_2} K_{F_2}) + \dots + (N_{F_n} K_{F_n}) \right]$$

N_{F_i} = Number of fittings of a particular type, dimensionless. N_{F_i} is determined for the specific tank or estimated from tables 24 and 27 of this subpart.

K_{F_i} = Deck fitting loss factor for a particular type fitting, pound-mole per year. K_{F_i} is determined for each fitting type from table 27 of this subpart.

n = Number of different types of fittings, dimensionless.

P^* , M_v , K_c , and 2,205 as defined in paragraph (g)(3)(iii)(B) of this section.

(D) Deck seam loss emissions shall be calculated using the following equation:

$$L_D = \frac{K_D S_D D^2 P^* M_v K_c}{2,205}$$

where:

K_D = Deck seam loss factor, pound-mole per foot per year, and

$K_D = 0.34$ for non-welded decks.

$K_D = 0$ for welded decks.

S_D = Deck seam length factor, feet per square foot, see table 28 of this subpart.

D , P^* , M_v , K_C , and 2,205 as defined in paragraph (g)(3)(iii)(B) of this section.

- (iv) The following equation shall be used for each external floating roof vessel i that does not meet the specifications of § 63.119(c) of this subpart to calculate $ES_{iACTUAL}$:

$$ES_{iACTUAL} = \frac{L_W + L_R + L_F}{12}$$

where:

L_W = Withdrawal loss emissions, megagrams per year, calculated according to paragraph (g)(3)(iv)(A) of this section.

L_R = Rim seal loss emissions, megagrams per year, calculated according to paragraph (g)(3)(iv)(B) of this section.

L_F = Fitting loss emissions, megagrams per year, calculated according to paragraph (g)(3)(iv)(C) of this section.

12 = Constant, months per year.

- (A) Withdrawal loss emissions shall be calculated using the following equation:

$$L_W = \frac{4.28 \times 10^{-4} Q C W_L}{D}$$

where:

Q = Throughput, gallons per year.

C = Shell clingage factor, barrel per 1,000 square foot, see table 23 of this subpart.

W_L = Average liquid density, pound per gallon.

D = Vessel diameter, feet.

- (B) Rim seal loss emissions shall be calculated using the following equation:

$$L_R = \frac{K_s V^N P^* D M_v K_c}{2,205}$$

where:

K_s = Seal factor, pound-mole per [foot (miles per hour)^N year], see table 29 of this subpart.

V = Average wind speed, miles per hour, at the source. A value of 10 miles per hour may be assumed if source-specific data are not available.

N = Seal wind speed exponent, dimensionless, see table 29 of this subpart.

P^* = Vapor pressure function, dimensionless, as defined in paragraph (g)(3)(iii)(B) of this section.

D = Vessel diameter, feet.

M_v = Molecular weight of the HAP, pound per pound-mole.

K_c = Product factor, dimensionless; use 1.0 for organic HAP's.

2,205 = Constant, pounds per megagram.

(C) Fitting loss emissions shall be calculated using the following equation:

$$L_F = \frac{F_F P^* M_v K_c}{2,205}$$

where:

F_F = The total deck fitting loss factor, pound-mole per year, and

$$F_F = \sum_{i=1}^n (N_{F_i} K_{F_i}) = \left[(N_{F_1} K_{F_1}) + (N_{F_2} K_{F_2}) + \dots + (N_{F_n} K_{F_n}) \right]$$

where:

N_{F_i} = Number of fittings of a particular type, dimensionless. N_{F_i} is determined for the specific tank or estimated from tables 30 through 32 of this subpart.

K_{F_i} = Deck fitting loss factor for a particular type fitting, pound-mole per year, and

$K_{F_i} = K_{F_{ai}} + K_{F_{bi}} V^{m_i}$, pound-mole per year, see table 30 of this subpart for the appropriate values of K_{Fa} , K_{Fb} , and m for each fitting type.

V, P*, M_v, K_c, and 2,205 as defined in paragraph (g)(3)(iv)(B) of this section.

(4) Emissions from transfer racks shall be calculated as follows:

(i) The following equation shall be used for each transfer rack i to calculate ETR_{iu}:

$$ETR_{iu} = (1.20 \times 10^{-7}) \frac{SPMG}{T}$$

where:

ETR_{iu} = Uncontrolled transfer HAP emission rate from transfer rack i, megagrams per month.

S = Saturation factor, dimensionless (see table 33 of this subpart).

P = Weighted average rack partial pressure of organic HAP's transferred at the rack during the month, kilopascals.

M = Weighted average molecular weight of organic HAP's transferred at the transfer rack during the month, gram per gram-mole.

G = Monthly volume of organic HAP's transferred, liters per month.

T = Weighted rack bulk liquid loading temperature during the month, Kelvin (°C + 273).

(ii) The following equation shall be used for each transfer rack i to calculate the weighted average rack partial pressure:

$$P = \frac{\sum_{j=1}^n (P_j)(G_j)}{G}$$

where:

P_j = Maximum true vapor pressure of individual organic HAP transferred at the rack, kilopascals.

G = Monthly volume of organic HAP transferred, liters per month, and

$$G = \sum_{j=1}^n G_j$$

G_j = Monthly volume of individual organic HAP transferred at the transfer rack, liters per month.

n = Number of organic HAP's transferred at the transfer rack.

- (iii) The following equation shall be used for each transfer rack i to calculate the weighted average rack molecular weight:

$$M = \frac{\sum_{j=1}^n (M_j)(G_j)}{G}$$

where:

M_j = Molecular weight of individual organic HAP transferred at the rack, gram per gram-mole.

G , G_j , and n as defined in paragraph (g)(4)(ii) of this section.

- (iv) The following equation shall be used for each transfer rack i to calculate the monthly weighted rack bulk liquid loading temperature:

$$T = \frac{\sum_{j=1}^n (T_j)(G_j)}{G}$$

where:

T_j = Average annual bulk temperature of individual organic HAP loaded at the transfer rack, Kelvin ($^{\circ}\text{C} + 273$).

G , G_j , and n as defined in paragraph (g)(4)(ii) of this section.

- (v) The following procedures and equations shall be used to calculate $\text{ETR}_{\text{ACTUAL}}$:

- (A) If the transfer rack is not controlled, $\text{ETR}_{\text{ACTUAL}} = \text{ETR}_{\text{IU}}$, where ETR_{IU} is calculated using the equations specified in paragraphs (g)(4)(i) through (g)(4)(iv) of this section.
- (B) If the transfer rack is controlled using a control device or a pollution prevention measure achieving less than the 98-percent reduction,

$$\text{ETR}_{\text{ACTUAL}} = \text{ETR}_{\text{IU}} \left(\frac{1 - \text{Percent reduction}}{100\%} \right)$$

- (1) The percent reduction for a control device shall be measured according to the procedures and test methods specified in § 63.128(a) of this subpart. For a flare meeting the criteria in § 63.128(b) of this subpart or a boiler or process heater meeting the criteria in § 63.128(c) of this subpart, the percent reduction shall be 98 percent. If testing is not feasible, percent reduction shall be determined through a design evaluation according to the procedures specified in § 63.128(h) of this subpart.

(2) Procedures for calculating the percent reduction for pollution prevention measures are specified in paragraph (j) of this section.

(5) Emissions from wastewater shall be calculated as follows:

(i) The following equation shall be used for each wastewater stream i to calculate EW_{ic} :

$$EW_{ic} = (6.0 * 10^{-8}) Q_i H_i \sum_{m=1}^s (1 - Fr_m) Fe_m HAP_{im} \\ + (0.05)(6.0 * 10^{-8}) Q_i H_i \sum_{m=1}^s (Fr_m HAP_{im})$$

where:

EW_{ic} = Monthly wastewater stream emission rate if wastewater stream i is controlled by the reference control technology, megagrams per month.

Q_i = Average flow rate for wastewater stream i , as determined by the procedure in § 63.144(c)(3), liters per minute.

H_i = Number of hours during the month that wastewater stream i was generated, hours per month.

s = Total number of table 9 HAP in wastewater stream i .

Fr_m = Fraction removed of table 9 HAP m in wastewater, from table 9, dimensionless.

Fe_m = Fraction emitted of table 9 HAP m in wastewater, from table 34, dimensionless.

HAP_{im} = Average concentration of table 9 HAP m in wastewater stream i , parts per million by weight.

(A) HAP_{im} shall be determined for the point of determination or, at a location downstream of the point of determination and adjusted according as specified in § 63.144(b)(6) of this subpart, by developing and using the sampling plan specified in § 63.144(b)(5)(ii) of this subpart. The samples collected may be analyzed by any of the methods specified in § 63.144(b)(5)(i)(B) through (b)(5)(i)(F) of this subpart. Concentration measurements based on Method 305 shall be adjusted by dividing each concentration by the compound-specific F_m factor listed on table 34 of this subpart. Concentration measurements other than Method 305 shall not be adjusted by the compound-specific F_m factor listed in table 34 of this subpart.

(B) Values for Q_i , HAP_{im} , and C_{im} shall be determined during a performance test conducted under representative conditions as specified in § 63.145(a)(3) and (a)(4) of this subpart. The average value obtained from three test runs shall be used. The values of Q_i , HAP_{im} , and C_{im} shall be established in the Notification of Compliance Status and must be updated as provided in paragraph (g)(5)(i)(C) of this section.

- (C) If there is a change to the process or operation such that the previously measured values of Q_i , HAP_{im} , and C_{im} are no longer representative, a new performance test shall be conducted to determine new representative values of Q_i , HAP_{im} , and C_{im} . These new values shall be used to calculate debits and credits from the time of the change forward, and the new values shall be reported in the next Periodic Report.
- (ii) The following equation shall be used to calculate $EW_{iACTUAL}$ for each wastewater stream i that is not managed according to the provisions for waste management units of §§ 63.133 through 63.137 of this subpart, as applicable, which specify equipment and work practices for suppressing and controlling vapors. Q_i , H_i , s , Fe_m , and HAP_{im} are as defined and determined according to paragraph (g)(5)(i) of this section.

$$EW_{iACTUAL} = (6.0 \times 10^{-8}) Q_i H_i \sum_{m=1}^s Fe_m HAP_{im}$$

Where:

$EW_{iACTUAL}$ = Monthly wastewater stream emission rate if wastewater stream i is uncontrolled or is controlled to a level less stringent than the reference control technology, megagrams per month.

- (iii) The following equation shall be used to calculate $EW_{iACTUAL}$ for each wastewater stream i that is managed according to the requirements of §§ 63.133 through 63.137 of this subpart, as applicable, and wastewater stream i is uncontrolled or is controlled to a level less stringent than the reference control technology (for the purposes of the wastewater emissions averaging provisions, the term control is used to mean treatment). Q_i , H_i , s , Fe_m , and HAP_{im} are as defined and determined according to paragraph (g)(5)(i) of this section.

$$EW_{iACTUAL} = (6.0 * 10^{-8}) Q_i H_i \sum_{m=1}^s [Fe_m HAP_{im} (1 - PR_{im})] + \left(1 - \frac{R_i}{100\%}\right) (6.0 * 10^{-8}) Q_i H_i \sum_{m=1}^s (HAP_{im} PR_{im})$$

Where:

$EW_{iACTUAL}$ = Monthly wastewater stream emission rate if wastewater stream i is uncontrolled or is controlled to a level less stringent than the reference control technology, megagrams per month.

PR_{im} = The efficiency of the treatment process, or series of treatment processes, which treat wastewater stream i , in reducing the emission potential of table 9 HAP m in wastewater, dimensionless, as calculated by:

$$PR_{im} = \frac{HAP_{im-in} - HAP_{im-out}}{HAP_{im-in}}$$

Where:

HAP_{im-in} = Average concentration of table 9 HAP m, parts per million by weight, as defined and determined according to paragraph (g)(5)(i) of this section, in the wastewater entering the first treatment process in the series.

HAP_{im-out} = Average concentration of table 9 HAP m, parts per million by weight, as defined and determined according to paragraph (g)(5)(i) of this section, in the wastewater exiting the last treatment process in the series.

R_i = Reduction efficiency of the device used to control any vapor streams emitted and collected from wastewater stream i during treatment, dimensionless, as determined according to the procedures in § 63.145(i) or (j) of this subpart.

(h) Credits are generated by the difference between emissions that are allowed for each Group 1 and Group 2 emission point and the actual emissions from a Group 1 or Group 2 emission point that has been controlled after November 15, 1990 to a level more stringent than what is required by this subpart or any other State or Federal rule or statute. Credits shall be calculated as follows:

(1) The overall equation for calculating source-wide credits is:

$$\begin{aligned} \text{Credits} = & D \sum_{i=1}^n ((0.02) EPV1_{iu} - EPV1_{iACTUAL}) + D \sum_{i=1}^m (EPV2_{iBASE} - EPV2_{iACTUAL}) + D \sum_{i=1}^n \\ & ((0.05) ES1_{iu} - ES1_{iACTUAL}) + D \sum_{i=1}^m (ES2_{iBASE} - ES2_{iACTUAL}) + D \sum_{i=1}^n ((0.02) ETR1_{iu} - ETR1_{iACTUAL}) \\ & + D \sum_{i=1}^m (ETR2_{iBASE} - ETR2_{iACTUAL}) + D \sum_{i=1}^n (EWW1_{ic} - EWW1_{iACTUAL}) + D \sum_{i=1}^m (EWW2_{iBASE} - EWW2_{iACTUAL}) \end{aligned}$$

where:

Credits and all terms of the equation are in units of megagrams per month, the baseline date is November 15, 1990, and:

D = Discount factor = 0.9 for all credit generating emission points except those controlled by a pollution prevention measure, which will not be discounted.

$EPV1_{iACTUAL}$ = Emissions for each Group 1 process vent i that is controlled to a level more stringent than the reference control technology, calculated according to paragraph (h)(2) of this section.

$(0.02) EPV1_{iu}$ = Emissions from each Group 1 process vent i if the reference control technology had been applied to the uncontrolled emissions. $EPV1_{iu}$ is calculated according to paragraph (h)(2) of this section.

$EPV2_{iACTUAL}$ = Emissions from each Group 2 process vent i that is controlled, calculated according to paragraph (h)(2) of this section.

$EPV2_{iBASE}$ = Emissions from each Group 2 process vent i at the baseline date, as calculated in paragraph (h)(2) of this section.

$ES1_{iACTUAL}$ = Emissions from each Group 1 storage vessel i that is controlled to a level more stringent than the reference control technology, calculated according to paragraph (h)(3) of this section.

(0.05) $ES1_{iu}$ = Emissions from each Group 1 storage vessel i if the reference control technology had been applied to the uncontrolled emissions. $ES1_{iu}$ is calculated according to paragraph (h)(3) of this section.

$ES2_{iACTUAL}$ = Emissions from each Group 2 storage vessel i that is controlled, calculated according to paragraph (h)(3) of this section.

$ES2_{iBASE}$ = Emissions from each Group 2 storage vessel i at the baseline date, as calculated in paragraph (h)(3) of this section.

$ETR1_{iACTUAL}$ = Emissions from each Group 1 transfer rack i that is controlled to a level more stringent than the reference control technology, calculated according to paragraph (h)(4) of this section.

(0.02) $ETR1_{iu}$ = Emissions from each Group 1 transfer rack i if the reference control technology had been applied to the uncontrolled emissions. $ETR1_{iu}$ is calculated according to paragraph (h)(4) of this section.

$ETR2_{iACTUAL}$ = Emissions from each Group 2 transfer rack i that are controlled, calculated according to paragraph (h)(4) of this section.

$ETR2_{iBASE}$ = Emissions from each Group 2 transfer rack i at the baseline date, as calculated in paragraph (h)(4) of this section.

$EW1_{iACTUAL}$ = Emissions from each Group 1 wastewater stream i that is controlled to a level more stringent than the reference control technology, calculated according to paragraph (h)(5) of this section.

$EW1_{ic}$ = Emissions from each Group 1 wastewater stream i if the reference control technology had been applied to the uncontrolled emissions, calculated according to paragraph (h)(5) of this section.

$EW2_{iACTUAL}$ = Emissions from each Group 2 wastewater stream i that is controlled, calculated according to paragraph (h)(5) of this section.

$EW2_{iBASE}$ = Emissions from each Group 2 wastewater stream i at the baseline date, calculated according to paragraph (h)(5) of this section.

n = Number of Group 1 emission points included in the emissions average. The value of n is not necessarily the same for process vents, storage vessels, transfer racks, and wastewater.

m = Number of Group 2 emission points included in the emissions average. The value of m is not necessarily the same for process vents, storage vessels, transfer racks, and wastewater.

- (i) For an emission point controlled using a reference control technology, the percent reduction for calculating credits shall be no greater than the nominal efficiency associated with the reference control technology, unless a higher nominal efficiency is assigned as specified in paragraph (h)(1)(ii) of this section.

- (ii) For an emission point controlled to a level more stringent than the reference control technology, the nominal efficiency for calculating credits shall be assigned as described in paragraph (i) of this section. A reference control technology may be approved for use in a different manner and assigned a higher nominal efficiency according to the procedures in paragraph (i) of this section.
 - (iii) For an emission point controlled using a pollution prevention measure, the nominal efficiency for calculating credits shall be as determined as described in paragraph (j) of this section.
- (2) Emissions from process vents shall be determined as follows:
- (i) Uncontrolled emissions from Group 1 process vents, $EPV1_{iu}$, shall be calculated according to the procedures and equation for EPV_{iu} in paragraphs (g)(2)(i) and (g)(2)(ii) of this section.
 - (ii) Actual emissions from Group 1 process vents controlled using a technology with an approved nominal efficiency greater than 98 percent or a pollution prevention measure achieving greater than 98 percent emission reduction, $EPV1_{iACTUAL}$, shall be calculated according to the following equation:

$$EPV1_{iACTUAL} = EPV1_{iu} \left(1 - \frac{\text{Nominal efficiency \%}}{100\%} \right)$$

- (iii) The following procedures shall be used to calculate actual emissions from Group 2 process vents, $EPV2_{iACTUAL}$:

- (A) For a Group 2 process vent controlled by a control device, a recovery device applied as a pollution prevention project, or a pollution prevention measure, if the control achieves a percent reduction less than or equal to 98 percent reduction,

$$EPV2_{iACTUAL} = EPV2_{iu} \times \left(1 - \frac{\text{Percent reduction}}{100\%} \right)$$

- (1) $EPV2_{iu}$ shall be calculated according to the equations and procedures for EPV_{iu} in paragraphs (g)(2)(i) and (g)(2)(ii) of this section, except as provided in paragraph (h)(2)(iii)(A)(3) of this section.
- (2) The percent reduction shall be calculated according to the procedures in paragraphs (g)(2)(iii)(B)(1) through (g)(2)(iii)(B)(3) of this section, except as provided in paragraph (h)(2)(iii)(A)(4) of this section.
- (3) If a recovery device was added as part of a pollution prevention project, $EPV2_{iu}$ shall be calculated prior to that recovery device. The equation for EPV_{iu} in paragraph (g)(2)(ii) of this section shall be used to calculate $EPV2_{iu}$; however, the sampling site for measurement of vent stream flow rate and organic HAP concentration shall be at the inlet of the recovery device.
- (4) If a recovery device was added as part of a pollution prevention project, the percent reduction shall be demonstrated by conducting a performance test at the inlet and outlet of that recovery device.

- (B) For a Group 2 process vent controlled using a technology with an approved nominal efficiency greater than 98 percent or a pollution prevention measure achieving greater than 98 percent reduction,

$$EPV2_{iACTUAL} = EPV2_{iu} \left(1 - \frac{\text{Nominal efficiency \%}}{100\%} \right)$$

- (iv) Emissions from Group 2 process vents at baseline, $EPV2_{iBASE}$, shall be calculated as follows:

- (A) If the process vent was uncontrolled on November 15, 1990, $EPV2_{iBASE} = EPV2_{iu}$ and shall be calculated according to the procedures and equation for EPV_{iu} in paragraphs (g)(2)(i) and (g)(2)(ii) of this section.

- (B) If the process vent was controlled on November 15, 1990,

$$EPV2_{iBASE} = EPV2_{iu} \left(1 - \frac{\text{Percent reduction \%}}{100\%} \right)$$

where $EPV2_{iu}$ is calculated according to the procedures and equation for EPV_{iu} in paragraphs (g)(2)(i) and (g)(2)(ii) of this section. The percent reduction shall be calculated according to the procedures specified in paragraphs (g)(2)(iii)(B)(1) through (g)(2)(iii)(B)(3) of this section.

- (C) If a recovery device was added to a process vent as part of a pollution prevention project initiated after November 15, 1990, $EPV2_{iBASE} = EPV2_{iu}$, where $EPV2_{iu}$ is calculated according to paragraph (h)(2)(iii)(A)(3) of this section.

- (3) Emissions from storage vessels shall be determined as follows:

- (i) Uncontrolled emissions from Group 1 storage vessels, $ES1_{iu}$, shall be calculated according to the equations and procedures for ES_{iu} in paragraph (g)(3)(i) of this section.
- (ii) Actual emissions from Group 1 storage vessels controlled using a technology with an approved nominal efficiency greater than 95 percent or a pollution prevention measure achieving greater than 95 percent emission reduction, $ES1_{iACTUAL}$, shall be calculated according to the following equation:

$$ES1_{iACTUAL} = ES1_{iu} \left(1 - \frac{\text{Nominal efficiency \%}}{100\%} \right)$$

- (iii) The following procedures shall be used to calculate actual emissions from Group 2 storage vessels, $ES2_{iACTUAL}$:

- (A) For a Group 2 storage vessel controlled using a control device or a pollution prevention measure (other than an internal or external floating roof) achieving a percent reduction less than or equal to 95-percent reduction,

$$ES2_{iACTUAL} = ES2_{iu} \times \left(1 - \frac{\text{Percent reduction}}{100\%} \right)$$

- (1) $ES2_{iu}$ is calculated according to the equations and procedures for ES_{iu} in paragraph (g)(3)(i) of this section.
- (2) The percent reduction shall be calculated according to the procedures in paragraphs (g)(3)(ii)(B)(1) and (g)(3)(ii)(B)(2) of this section.
- (3) If an internal or external floating roof meeting the specifications of § 63.119 (b), (c), or (d) of this subpart is used to control the vessel, the percent reduction shall be 95 percent.
- (B) If a Group 2 storage vessel is controlled with an internal or external floating roof not meeting the specifications of § 63.119 (b), (c), or (d) of this subpart, $ES2_{iACTUAL}$ shall be calculated as specified for $ES_{iACTUAL}$ in paragraph (g)(3)(iii) or (g)(3)(iv) of this section.
- (C) For a Group 2 storage vessel controlled using a technology with an approved nominal efficiency greater than 95 percent or a pollution prevention measure achieving greater than 95 percent reduction,

$$ES2_{iACTUAL} = ES2_{iu} \left(1 - \frac{\text{Nominal efficiency \%}}{100\%} \right)$$

(iv) Emissions from Group 2 storage vessels at baseline, $ES2_{iBASE}$, shall be calculated as follows:

- (A) If the fixed-roof vessel was uncontrolled on November 15, 1990, $ES2_{iBASE} = ES2_{iu}$ and shall be calculated according to the procedures and equations for ES_{iu} in paragraph (g)(3)(i) of this section.
- (B) If the storage vessel was controlled on November 15, 1990:
 - (1) The equations for $ES_{iACTUAL}$ in paragraph (g)(3)(iii) of this section shall be used to calculate $ES2_{iBASE}$ for vessels controlled with an internal floating roof that does not meet the specifications of § 63.119 (b) or (d) of this subpart.
 - (2) The equations for $ES_{iACTUAL}$ in paragraph (g)(3)(iv) of this section shall be used to calculate $ES2_{iBASE}$ for vessels controlled with an external floating roof that does not meet the specifications of § 63.119(c) of this subpart.
 - (3) The following equations shall be used to calculate $ES2_{iBASE}$ for vessels controlled with a control device,

$$ES2_{iBASE} = ES2_{iu} \left(1 - \frac{\text{Percent reduction \%}}{100\%} \right)$$

where $ES2_{iu}$ shall be calculated according to the equations for ES_{iu} in paragraph (g)(3)(i) of this section. The percent reduction shall be calculated according to the procedures in paragraphs (g)(3)(ii)(B)(1) and (g)(3)(ii)(B)(2) of this section.

(4) Emissions from transfer racks shall be determined as follows:

- (i) Uncontrolled emissions from Group 1 transfer racks, $ETR1_{iu}$, shall be calculated according to the procedures and equations for ETR_{iu} as described in paragraphs (g)(4)(i) through (g)(4)(iv) of this section.

- (ii) Actual emissions from Group 1 transfer racks controlled using a technology with an approved nominal efficiency greater than 98 percent or a pollution prevention measure achieving greater than 98 percent emission reduction, $ETR_{iACTUAL}$, shall be calculated according to the following equation:

$$ETR_{iACTUAL} = ETR_{iu} \left(1 - \frac{\text{Nominal efficiency}}{100\%} \right)$$

- (iii) The following procedures shall be used to calculate actual emissions from Group 2 transfer racks, $ETR_{iACTUAL}$:

- (A) For a Group 2 transfer rack controlled by a control device or a pollution prevention measure achieving a percent reduction less than or equal to 98 percent reduction,

$$ETR_{iACTUAL} = ETR_{iu} \left(1 - \frac{\text{Percent reduction}}{100\%} \right)$$

- (1) ETR_{iu} shall be calculated according to the equations and procedures for ETR_{iu} in paragraphs (g)(4)(i) through (g)(4)(iv) of this section.
- (2) The percent reduction shall be calculated according to the procedures in paragraph (g)(4)(v)(B)(1) and (g)(4)(v)(B)(2) of this section.
- (B) For a Group 2 transfer rack controlled using a technology with an approved nominal efficiency greater than 98 percent or a pollution prevention measure achieving greater than 98 percent reduction,

$$ETR_{iACTUAL} = ETR_{iu} \left(1 - \frac{\text{Nominal efficiency}}{100\%} \right)$$

- (iv) Emissions from Group 2 transfer racks at baseline, ETR_{iBASE} , shall be calculated as follows:

- (A) If the transfer rack was uncontrolled on November 15, 1990, $ETR_{iBASE} = ETR_{iu}$ and shall be calculated according to the procedures and equations for ETR_{iu} in paragraphs (g)(4)(i) through (g)(4)(iv) of this section.
- (B) If the transfer rack was controlled on November 15, 1990,

$$ETR_{iBASE} = ETR_{iu} \left(1 - \frac{\text{Percent reduction}}{100\%} \right)$$

where ETR_{iu} is calculated according to the procedures and equations for ETR_{iu} in paragraphs (g)(4)(i) through (g)(4)(iv) of this section. Percent reduction shall be calculated according to the procedures in paragraphs (g)(4)(v)(B)(1) and (g)(4)(v)(B)(2) of this section.

- (5) Emissions from wastewater shall be determined as follows:

- (i) EW_{ic} shall be calculated according to the equation for EW_{ic} in paragraph (g)(5)(i) of this section.

- (ii) EWW_{2iBASE} shall be calculated according to the equation for $EWW_{iACTUAL}$ in paragraph (g)(5)(ii) of this section for each Group 2 wastewater stream i , which on November 15, 1990, was not managed according to the requirements of §§ 63.133 through 63.137 of this subpart, as applicable.
- (iii) EWW_{2iBASE} shall be calculated according to the equation for $EWW_{iACTUAL}$ in paragraph (g)(5)(iii) of this section for each Group 2 wastewater stream i , which on November 15, 1990, was managed according to the requirements of §§ 63.133 through 63.137 of this subpart, as applicable, and was uncontrolled or controlled to a level less stringent than the reference control technology.
- (iv) For Group 2 wastewater streams that are managed according to the requirements of §§ 63.133 through 63.137 of this subpart, as applicable, $EWW_{2iACTUAL}$ shall be calculated as follows:
 - (A) $EWW_{2iACTUAL}$ shall be calculated according to the equation for $EWW_{iACTUAL}$ in paragraph (g)(5)(iii) of this section for each Group 2 wastewater stream i that is controlled to a level less stringent than, or equivalent to, the reference control technology.
 - (B) $EWW_{2iACTUAL}$ shall be calculated according to the procedures for calculating $EWW_{1iACTUAL}$ in paragraph (h)(5)(v) of this section for each Group 2 wastewater stream that is controlled to a level more stringent than the reference control technology.
- (v) The following equations for $EWW_{1iACTUAL}$ shall be used to calculate emissions from each Group 1 wastewater stream i that is managed according to the requirements of §§ 63.133 through 63.137 of this subpart, as applicable, and is controlled to a level more stringent than the reference control technology.
 - (A) If the Group 1 wastewater stream i is controlled using a treatment process or series of treatment processes with an approved nominal reduction efficiency in the concentration of table 9 HAP for stream i greater than that of the design steam stripper specified in § 63.138(d) of this subpart, and the control device used to reduce table 9 HAP emissions from the vapor stream(s) vented from the treatment process(es) achieves a percent reduction equal to 95 percent, the following equation shall be used. All terms in this equation are as defined and determined in paragraph (g)(5) of this section.

$$EWW_{1iACTUAL} = (6.0 * 10^{-8}) Q_i H_i \sum_{m=1}^s [Fe_m HAP_{im} (1 - PR_{im})] + 0.05 (6.0 * 10^{-8}) Q_i H_i \sum_{m=1}^s [HAP_{im} PR_{im}]$$

- (B) If the Group 1 wastewater stream i is not controlled using a treatment process or series of treatment processes with a nominal reduction efficiency in the table 9 HAP concentration greater than that of the design steam stripper specified in § 63.138(d) of this subpart, but the vapor stream(s) vented from the treatment process(es) are controlled using a device with an approved nominal efficiency greater than 95 percent, the following equation shall be used. All terms other than nominal efficiency are as defined and determined in paragraph (g)(5) of this section.

$$EWW1_{iACTUAL} = \left(6.0 * 10^{-8}\right) Q_i H_i \sum_{m=1}^s \left[Fe_m HAP_{im} (1 - Fr_m) \right] + \left(1 - \frac{\text{Nominal efficiency \%}}{100}\right) \left(6.0 * 10^{-8}\right) Q_i H_i \sum_{m=1}^s \left[HAP_{im} Fr_m \right]$$

- (C) If the Group 1 wastewater stream i is controlled using a treatment process or series of treatment processes with an approved nominal reduction efficiency in the table 9 HAP concentration greater than that of the design steam stripper specified in § 63.138(d) of this subpart, and the vapor stream(s) vented from the treatment process are controlled using a device with an approved nominal efficiency greater than 95 percent, the following equation shall be used. All terms other than nominal efficiency are as defined and determined in paragraph (g)(5) of this section.

$$EWW1_{iACTUAL} = \left(6.0 * 10^{-8}\right) Q_i H_i \sum_{m=1}^s \left[Fe_m HAP_{im} (1 - PR_{im}) \right] + \left(1 - \frac{\text{Nominal efficiency \%}}{100}\right) \left(6.0 * 10^{-8}\right) Q_i H_i \sum_{m=1}^s \left[HAP_{im} PR_{im} \right]$$

- (i) The following procedures shall be followed to establish nominal efficiencies. The procedures in paragraphs (i)(1) through (i)(6) of this section shall be followed for control technologies that are different in use or design from the reference control technologies and achieve greater percent reductions than the percent efficiencies assigned to the reference control technologies in § 63.111 of this subpart.
- (1) In those cases where the owner or operator is seeking permission to take credit for use of a control technology that is different in use or design from the reference control technology, and the different control technology will be used in more than three applications at a single plant-site, the owner or operator shall submit the information specified in paragraphs (i)(1)(i) through (i)(1)(iv) of this section to the Director of the EPA Office of Air Quality Planning and Standards in writing:
- (i) Emission stream characteristics of each emission point to which the control technology is or will be applied including the kind of emission point, flow, organic HAP concentration, and all other stream characteristics necessary to design the control technology or determine its performance.
 - (ii) Description of the control technology including design specifications.
 - (iii) Documentation demonstrating to the Administrator's satisfaction the control efficiency of the control technology. This may include performance test data collected using an appropriate EPA method or any other method validated according to Method 301 of appendix A of this part. If it is infeasible to obtain test data, documentation may include a design evaluation and calculations. The engineering basis of the calculation procedures and all inputs and assumptions made in the calculations shall be documented.
 - (iv) A description of the parameter or parameters to be monitored to ensure that the control technology will be operated in conformance with its design and an explanation of the criteria used for selection of that parameter (or parameters).

- (2) The Administrator shall determine within 120 calendar days whether an application presents sufficient information to determine nominal efficiency. The Administrator reserves the right to request specific data in addition to the items listed in paragraph (i)(1) of this section.
- (3) The Administrator shall determine within 120 calendar days of the submittal of sufficient data whether a control technology shall have a nominal efficiency and the level of that nominal efficiency. If, in the Administrator's judgment, the control technology achieves a level of emission reduction greater than the reference control technology for a particular kind of emission point, the Administrator will publish a FEDERAL REGISTER notice establishing a nominal efficiency for the control technology.
- (4) The Administrator may condition permission to take emission credits for use of the control technology on requirements that may be necessary to ensure operation and maintenance to achieve the specified nominal efficiency.
- (5) In those cases where the owner or operator is seeking permission to take credit for use of a control technology that is different in use or design from the reference control technology and the different control technology will be used in no more than three applications at a single plant site, the information listed in paragraphs (i)(1)(i) through (i)(1)(iv) can be submitted to the permitting authority for the source for approval instead of the Administrator.
 - (i) In these instances, use and conditions for use of the control technology can be approved by the permitting authority as part of an operating permit application or modification. The permitting authority shall follow the procedures specified in paragraphs (i)(2) through (i)(4) of this section except that, in these instances, a FEDERAL REGISTER notice is not required to establish the nominal efficiency for the different technology.
 - (ii) If, in reviewing the application, the permitting authority believes the control technology has broad applicability for use by other sources, the permitting authority shall submit the information provided in the application to the Director of the EPA Office of Air Quality Planning and Standards. The Administrator shall review the technology for broad applicability and may publish a FEDERAL REGISTER notice; however, this review shall not affect the permitting authority's approval of the nominal efficiency of the control technology for the specific application.
- (6) If, in reviewing an application for a control technology for an emission point, the Administrator or permitting authority determines the control technology is not different in use or design from the reference control technology, the Administrator or permitting authority shall deny the application.
- (j) The following procedures shall be used for calculating the efficiency (percent reduction) of pollution prevention measures:
 - (1) A pollution prevention measure is any practice which meets the criteria of paragraphs (j)(1)(i) and (j)(1)(ii) of this section.
 - (i) A pollution prevention measure is any practice that results in a lesser quantity of organic HAP emissions per unit of product released to the atmosphere prior to out-of-process recycling, treatment, or control of emissions, while the same product is produced.

- (ii) Pollution prevention measures may include: substitution of feedstocks that reduce HAP emissions; alterations to the production process to reduce the volume of materials released to the environment; equipment modifications; housekeeping measures; and in-process recycling that returns waste materials directly to production as raw materials. Production cutbacks do not qualify as pollution prevention.
- (2) The emission reduction efficiency of pollution prevention measures implemented after November 15, 1990, can be used in calculating the actual emissions from an emission point in the debit and credit equations in paragraphs (g) and (h) of this section. When the term "organic HAP" is used in § 63.150(j)(2) in reference to wastewater emission points, the term "table 9 HAP" shall apply for the purposes of this paragraph.
 - (i) For pollution prevention measures, the percent reduction used in the equations in paragraphs (g)(2) through (g)(5) of this section and paragraphs (h)(2) through (h)(5) of this section is the percent difference between the monthly organic HAP emissions for each emission point after the pollution prevention measure for the most recent month versus monthly emissions from the same emission point before the pollution prevention measure, adjusted by the volume of product produced during the two monthly periods.
 - (ii) The following equation shall be used to calculate the percent reduction of a pollution prevention measure for each emission point.

$$\text{Percent reduction} = \frac{E_B - \frac{(E_{pp} \times P_B)}{P_{pp}}}{E_B} \times 100\%$$

where:

Percent reduction = Efficiency of pollution prevention measure (percent organic HAP reduction).

E_B = Monthly emissions before the pollution prevention measure, megagrams per month, determined as specified in paragraphs (j)(2)(ii)(A), (j)(2)(ii)(B), and (j)(2)(ii)(C) of this section.

E_{pp} = Monthly emissions after the pollution prevention measure, megagrams per month, as determined for the most recent month, determined as specified in paragraphs (j)(2)(ii)(D) or (j)(2)(ii)(E) of this section.

P_B = Monthly production before the pollution prevention measure, megagrams per month, during the same period over which E_B is calculated.

P_{pp} = Monthly production after the pollution prevention measure, megagrams per month, as determined for the most recent month.

- (A) The monthly emissions before the pollution prevention measure, E_B , shall be determined in a manner consistent with the equations and procedures in paragraphs (g)(2), (g)(3), and (g)(4) of this section for process vents, storage vessels, and transfer operations.
- (B) For wastewater, E_B shall be calculated as follows:

$$E_B = \sum_{i=1}^n \left[(6.0 * 10^{-8}) Q_{Bi} H_{Bi} \sum_{m=1}^s Fe_m HAP_{Bim} \right]$$

Where:

n = Number of wastewater streams.

Q_{Bi} = Average flow rate for wastewater stream i before the pollution prevention measure, defined and determined according to paragraph (g)(5)(i) of this section, liters per minute, before implementation of the pollution prevention measure.

H_{Bi} = Number of hours per month that wastewater stream i was discharged before the pollution prevention measure, hours per month.

s = Total number of table 9 HAP in wastewater stream i .

Fe_m = Fraction emitted of table 9 HAP m in wastewater of this subpart, dimensionless.

HAP_{Bim} = Average concentration of table 9 HAP m in wastewater stream i , defined and determined according to paragraph (g)(5)(i) of this section, before the pollution prevention measure, parts per million by weight, as measured before the implementation of the pollution measure.

- (C) If the pollution prevention measure was implemented prior to April 22, 1994, records may be used to determine E_B .
- (D) The monthly emissions after the pollution prevention measure, E_{pp} , may be determined during a performance test or by a design evaluation and documented engineering calculations. Once an emissions-to-production ratio has been established, the ratio can be used to estimate monthly emissions from monthly production records.
- (E) For wastewater, E_{pp} shall be calculated using the following equation:

$$E_{pp} = \sum_{i=1}^n \left[(6.0 * 10^{-8}) Q_{ppi} H_{ppi} \sum_{m=1}^s Fe_m HAP_{ppim} \right]$$

where n , Q_{ppi} , H_{ppi} , s , Fe_m , and HAP_{ppim} are defined and determined as described in paragraph (j)(2)(ii)(B) of this section except that Q_{ppi} , H_{ppi} , and HAP_{ppim} shall be determined after the pollution prevention measure has been implemented.

- (iii) All equations, calculations, test procedures, test results, and other information used to determine the percent reduction achieved by a pollution prevention measure for each emission point shall be fully documented.
- (iv) The same pollution prevention measure may reduce emissions from multiple emission points. In such cases, the percent reduction in emissions for each emission point must be calculated.

- (v) For the purposes of the equations in paragraphs (h)(2) through (h)(5) of this section, used to calculate credits for emission points controlled more stringently than the reference control technology, the nominal efficiency of a pollution prevention measure is equivalent to the percent reduction of the pollution prevention measure. When a pollution prevention measure is used, the owner or operator of a source is not required to apply to the Administrator for a nominal efficiency and is not subject to paragraph (i) of this section.
- (k) The owner or operator must demonstrate that the emissions from the emission points proposed to be included in the average will not result in greater hazard or, at the option of the operating permit authority, greater risk to human health or the environment than if the emission points were controlled according to the provisions in §§ 63.113 through 63.148.
 - (1) This demonstration of hazard or risk equivalency shall be made to the satisfaction of the operating permit authority.
 - (i) The Administrator may require owners and operators to use specific methodologies and procedures for making a hazard or risk determination.
 - (ii) The demonstration and approval of hazard or risk equivalency shall be made according to any guidance that the Administrator makes available for use.
 - (2) Owners and operators shall provide documentation demonstrating the hazard or risk equivalency of their proposed emissions average in their operating permit application or in their Implementation Plan if an operating permit application has not yet been submitted.
 - (3) An emissions averaging plan that does not demonstrate hazard or risk equivalency to the satisfaction of the Administrator shall not be approved. The Administrator may require such adjustments to the emissions averaging plan as are necessary in order to ensure that the average will not result in greater hazard or risk to human health or the environment than would result if the emission points were controlled according to §§ 63.113 through 63.148 of this subpart.
 - (4) A hazard or risk equivalency demonstration must:
 - (i) Be a quantitative, bona fide chemical hazard or risk assessment;
 - (ii) Account for differences in chemical hazard or risk to human health or the environment; and
 - (iii) Meet any requirements set by the Administrator for such demonstrations.
- (l) For periods of excursions, an owner or operator may request that the provisions of paragraphs (l)(1) through (l)(4) of this section be followed instead of the procedures in paragraphs (f)(3)(i) and (f)(3)(ii) of this section.
 - (1) The owner or operator shall notify the Administrator of excursions in the Periodic Reports as required in § 63.152 of this subpart.
 - (2) The owner or operator shall demonstrate that other types of monitoring data or engineering calculations are appropriate to establish that the control device for the emission point was operating in such a fashion to warrant assigning full or partial credits and debits. This demonstration shall be made to the Administrator's satisfaction, and the Administrator may establish procedures of demonstrating compliance that are acceptable.

- (3) The owner or operator shall provide documentation of the excursion and the other type of monitoring data or engineering calculations to be used to demonstrate that the control device for the emission point was operating in such a fashion to warrant assigning full or partial credits and debits.
- (4) The Administrator may assign full or partial credit and debits upon review of the information provided.
- (m) For each Group 1 or Group 2 emission point included in an emissions average, the owner or operator shall perform testing, monitoring, recordkeeping, and reporting equivalent to that required for Group 1 emission points complying with §§ 63.113 through 63.148 of this subpart. The specific requirements for process vents, storage vessels, transfer racks, and wastewater are identified in paragraphs (m)(1) through (m)(6) of this section.
 - (1) The source shall implement the following testing, monitoring, recordkeeping, and reporting procedures for each process vent equipped with a flare, incinerator, boiler, or process heater.
 - (i) Determine, consistent with paragraph (g)(2)(i) of this section, whether the process vent is Group 1 or Group 2 according to the procedures in § 63.115.
 - (ii) Conduct performance tests to determine percent reduction as specified in § 63.116 of this subpart;
 - (iii) Monitor the operating parameters, keep records, and submit reports specified in § 63.114, § 63.117(a), and § 63.118 (a), (f), and (g) of this subpart, as appropriate for the specific control device.
 - (2) The source shall implement the following procedures for each process vent equipped with a carbon adsorber, absorber, or condenser but not equipped with a control device:
 - (i) Except as specified in § 63.113(a)(4), determine, consistent with paragraph (g)(2)(i) of this section, the flow rate, organic HAP concentration, and TRE index value using the methods specified in § 63.115;
 - (ii) Monitor the operating parameters, keep records, and submit reports specified in § 63.114, § 63.117(a), and § 63.118(b), (f), and (g) of this subpart, as appropriate for the specific recovery device.
 - (3) The source shall implement the following procedures for each storage vessel controlled with an internal floating roof, external roof, or a closed vent system with a control device, as appropriate to the control technique:
 - (i) Perform the monitoring or inspection procedures in § 63.120 of this subpart,
 - (ii) Perform the reporting and recordkeeping procedures in §§ 63.122 and 63.123 of this subpart, and
 - (iii) For closed vent systems with control devices, conduct an initial design evaluation and submit an operating plan as specified in § 63.120(d) and § 63.122(a)(2) and (b) of this subpart.
 - (4) The source shall implement the following procedures for each transfer rack controlled with a vapor balancing system, or a vapor collection system and an incinerator, flare, boiler, process heater, adsorber, condenser, or absorber, as appropriate to the control technique:
 - (i) The monitoring and inspection procedures in § 63.127 of this subpart,

- (ii) The testing and compliance procedures in § 63.128 of this subpart, and
 - (iii) The reporting and recordkeeping procedures in § 63.129 and § 63.130 of this subpart.
- (5) The source shall implement the following procedures for wastewater emission points, as appropriate to the control techniques:
 - (i) For wastewater treatment processes, conduct tests as specified in § 63.138(j) of this subpart.
 - (ii) Conduct inspections and monitoring as specified in § 63.143 of this subpart.
 - (iii) A recordkeeping program as specified in § 63.147 of this subpart.
 - (iv) A reporting program as specified in § 63.146 of this subpart.
- (6) If an emission point in an emissions average is controlled using a pollution prevention measure or a device or technique for which no monitoring parameters or inspection procedures are specified in § 63.114, § 63.120, § 63.127, or § 63.143 of this subpart, the owner or operator shall submit the information specified in § 63.151(f) of this subpart in the Implementation Plan or operating permit application.
- (n) Records of all information required to calculate emission debits and credits shall be retained for five years.
- (o) Initial Notifications, Implementation Plans, Notifications of Compliance Status, Periodic Reports, and other reports shall be submitted as required by § 63.151 and § 63.152 of this subpart.

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§ 63.151 Initial notification.

- (a) Each owner or operator of a source subject to this subpart shall submit the reports listed in paragraphs (a)(1) through (a)(5) of this section. Owners or operators requesting an extension of compliance shall also submit the report listed in paragraph (a)(6) of this section.
 - (1) An Initial Notification described in paragraph (b) of this section, and
 - (2) An Implementation Plan for new sources subject to this subpart or for emission points to be included in an emissions average, unless an operating permit application has been submitted prior to the date the Implementation Plan is due and the owner or operator has elected to include the information specified in § 63.152(e) in that application. The submittal date and contents of the Implementation Plan are specified in paragraphs (c) and (d) of this section.
 - (3) A Notification of Compliance Status described in § 63.152 of this subpart,
 - (4) Periodic Reports described in § 63.152 of this subpart, and
 - (5) Other reports described in § 63.152 of this subpart.
 - (6) Pursuant to section 112(i)(3)(B) of the Act, an owner or operator may request an extension allowing the existing source up to 1 additional year to comply with section 112(d) standards.
 - (i) For purposes of this subpart, a request for an extension shall be submitted to the permitting authority as part of the operating permit application or as part of the Initial Notification or as a separate submittal. Requests for extensions shall be submitted no later than 120 days prior to

the compliance dates specified in § 63.100(k)(2), § 63.100(l)(4), and § 63.100(m) of subpart F of this part, except as provided for in paragraph (a)(6)(iv) of this section. The dates specified in § 63.6(i) of subpart A of this part for submittal of requests for extensions shall not apply to sources subject to this subpart G.

- (ii) A request for an extension of compliance must include the data described in § 63.6(i)(6)(i) (A), (B), and (D) of subpart A of this part.
- (iii) The requirements in § 63.6(i)(8) through (i)(14) of subpart A will govern the review and approval of requests for extensions of compliance with this subpart.
- (iv) An owner or operator may submit a compliance extension request after the date specified in paragraph (a)(6)(i) of this section provided the need for the compliance extension arose after that date and before the otherwise applicable compliance date, and the need arose due to circumstances beyond reasonable control of the owner or operator. This request shall include, in addition to the information in paragraph (a)(6)(ii) of this section, a statement of the reasons additional time is needed and the date when the owner or operator first learned of the problem.

(7) The reporting requirements for storage vessels are located in § 63.122 of this subpart.

(b) Each owner or operator of an existing or new source subject to subpart G shall submit a written Initial Notification to the Administrator, containing the information described in paragraph (b)(1) of this section, according to the schedule in paragraph (b)(2) of this section. The Initial Notification provisions in § 63.9(b)(2), (b)(3), and (b)(6) of subpart A shall not apply to owners or operators of sources subject to subpart G.

(1) The Initial Notification shall include the following information:

- (i) The name and address of the owner or operator;
- (ii) The address (physical location) of the affected source;
- (iii) An identification of the kinds of emission points within the source that are subject to this subpart;
- (iv) An identification of the chemical manufacturing processes subject to subpart G; and
- (v) A statement of whether the source can achieve compliance by the relevant compliance date specified in § 63.100 of subpart F.

(2) The Initial Notification shall be submitted according to the schedule in paragraph (b)(2)(i), (b)(2)(ii), or (b)(2)(iii) of this section, as applicable.

- (i) For an existing source, the Initial Notification shall be submitted within 120 calendar days after the date of promulgation, or no later than 120 days after the source becomes subject to this subpart, whichever is later.
- (ii) For a new source that has an initial start-up 90 calendar days after the date of promulgation of this subpart or later, the application for approval of construction or reconstruction required by § 63.5(d) of subpart A shall be submitted in lieu of the Initial Notification. The application shall be submitted as soon as practicable before construction or reconstruction is planned to commence (but it need not be sooner than 90 calendar days after the date of promulgation of

this subpart). For a new source that reclassifies to major source status after January 19, 2021 and greater than 90 days after the initial start-up, the source shall submit the initial notification required by § 63.9(b) no later than 120 days after the source becomes subject to this subpart.

(iii) For a new source that has an initial start-up prior to 90 calendar days after the date of promulgation, the Initial Notification shall be submitted within 90 calendar days after the date of promulgation of this subpart, or no later than 120 days after the source becomes subject to this subpart, whichever is later. The application for approval of construction or reconstruction described in § 63.5(d) of subpart A is not required for these sources.

(c) Each owner or operator of an existing source with emission points that will be included in an emissions average or new source subject to this subpart must submit an Implementation Plan to the Administrator by the dates specified in paragraphs (c)(1) and (c)(2) of this section, unless an operating permit application accompanied by the information specified in § 63.152(e) of this subpart has been submitted. The Implementation Plan for emissions averaging is subject to Administrator approval.

(1) Each owner or operator of an existing source subject to this subpart who elects to comply with § 63.112 of this subpart by using emissions averaging for any emission points, and who has not submitted an operating permit application accompanied by the information specified in § 63.152(e) of this subpart at least 18 months prior to the compliance dates specified in § 63.100 of subpart F of this part, shall develop an Implementation Plan for emissions averaging. For existing sources, the Implementation Plan for those emission points to be included in an emissions average shall be submitted no later than 18 months prior to the compliance dates in § 63.100 of subpart F of this part.

(2) Each owner or operator of a new source shall submit an Implementation Plan by the date specified in paragraphs (c)(2)(i) or (c)(2)(ii) of this section, as applicable, unless an operating permit application containing the information in paragraph (e) of this section has been submitted by that date.

(i) For a new source that has an initial start-up 90 calendar days after the date of promulgation of this subpart or later, the Implementation Plan shall be submitted with the application for approval of construction or reconstruction by the date specified in paragraph (b)(2)(ii) of this section.

(ii) For a new source that has an initial start-up prior to 90 calendar days after the date of promulgation, the Implementation Plan shall be submitted within 90 calendar days after the date of promulgation of this subpart.

(3) The Administrator shall determine within 120 calendar days whether the Implementation Plan submitted by sources using emissions averaging presents sufficient information. The Administrator shall either approve the Implementation Plan, request changes, or request that the owner or operator submit additional information. Once the Administrator receives sufficient information, the Administrator shall approve, disapprove, or request changes to the plan within 120 calendar days.

(d) Each owner or operator required to submit an Implementation Plan for emissions averaging shall include in the plan, for all emission points included in the emissions average, the information listed in paragraphs (d)(1) through (d)(8) of this section.

(1) The identification of all emission points in the planned emissions average and notation of whether each point is a Group 1 or Group 2 emission point as defined in § 63.111 of this subpart.

- (2) The projected emission debits and credits for each emission point and the sum for the emission points involved in the average calculated according to § 63.150 of this subpart. The projected credits must be greater than the projected debits, as required under § 63.150(e)(3) of this subpart.
- (3) The specific control technology or pollution prevention measure that will be used for each emission point included in the average and date of application or expected date of application.
- (4) The specific identification of each emission point affected by a pollution prevention measure. To be considered a pollution prevention measure, the criteria in § 63.150(j)(1) of this subpart must be met. If the same pollution prevention measure reduces or eliminates emissions from multiple emission points in the average, the owner or operator must identify each of these emission points.
- (5) A statement that the compliance demonstration, monitoring, inspection, recordkeeping, and reporting provisions in § 63.150(m), (n), and (o) of this subpart that are applicable to each emission point in the emissions average will be implemented beginning on the date of compliance.
- (6) Documentation of the information listed in paragraph (d)(6)(i) through (d)(6)(v) of this section for each process vent, storage vessel, or transfer rack included in the average.
 - (i) The values of the parameters used to determine whether the emission point is Group 1 or Group 2. Except as specified in § 63.113(a)(4), where TRE index value is used for process vent group determination, the estimated or measured values of the parameters used in the TRE equation in § 63.115(d) (flow rate, organic HAP emission rate, TOC emission rate, and net heating value) and the resulting TRE index value shall be submitted.
 - (ii) The estimated values of all parameters needed for input to the emission debit and credit calculations in § 63.150 (g) and (h) of this subpart. These parameter values, or as appropriate, limited ranges for the parameter values, shall be specified in the source's Implementation Plan (or operating permit) as enforceable operating conditions. Changes to these parameters must be reported as required by paragraph (i)(2)(ii) of this section.
 - (iii) The estimated percent reduction if a control technology achieving a lower percent reduction than the efficiency of the reference control technology, as defined in § 63.111 of this subpart, is or will be applied to the emission point.
 - (iv) The anticipated nominal efficiency if a control technology achieving a greater percent emission reduction than the efficiency of the reference control technology is or will be applied to the emission point. The procedures in § 63.150(i) of this subpart shall be followed to apply for a nominal efficiency.
 - (v) The operating plan required in § 63.122(a)(2) and (b) for each storage vessel controlled with a closed vent system with a control device other than a flare.
- (7) The information specified in § 63.151(f) of this subpart shall be included in the Implementation Plan for:
 - (i) Each process vent or transfer rack controlled by a pollution prevention measure or control technique for which monitoring parameters or inspection procedures are not specified in § 63.114, § 63.126(b)(3), or § 63.127 of this subpart, and
 - (ii) Each storage vessel controlled by pollution prevention or a control technique other than an internal or external floating roof or a closed vent system with a control device.

- (8) Documentation of the information listed in paragraph (d)(8)(i) through (d)(8)(iv) for each process wastewater stream included in the average.
 - (i) The information used to determine whether the wastewater stream is a Group 1 or Group 2 wastewater stream.
 - (ii) The estimated values of all parameters needed for input to the wastewater emission credit and debit calculations in § 63.150 (g)(5) and (h)(5) of this subpart.
 - (iii) The estimated percent reduction if:
 - (A) A control technology that achieves an emission reduction less than or equal to the emission reduction achieved by the design steam stripper, as specified in § 63.138(g) of this subpart, is or will be applied to the wastewater stream, or
 - (B) A control technology achieving less than or equal to 95 percent emission reduction is or will be applied to the vapor stream(s) vented and collected from the treatment processes, or
 - (C) A pollution prevention measure is or will be applied.
 - (iv) The anticipated nominal efficiency if the owner or operator plans to apply for a nominal efficiency under § 63.150(i) of this subpart. A nominal efficiency shall be applied for if:
 - (A) A control technology is or will be applied to the wastewater stream and achieves an emission reduction greater than the emission reduction achieved by the design steam stripper as specified in § 63.138(g) of this subpart, or
 - (B) A control technology achieving greater than 95 percent emission reduction is or will be applied to the vapor stream(s) vented and collected from the treatment processes.
 - (v) For each pollution prevention measure, treatment process, or control device used to reduce air emissions of organic HAP's from wastewater and for which no monitoring parameters or inspection procedures are specified in § 63.143 of this subpart, the information specified in § 63.151(f) of this subpart shall be included in the Implementation Plan.
- (e) An owner or operator expressly referred to this paragraph shall report, in an Implementation Plan, operating permit application, or as otherwise specified by the permitting authority, the information listed in paragraphs (e)(1) through (e)(5) of this section.
 - (1) A list designating each emission point complying with §§ 63.113 through 63.149 and whether each emission point is Group 1 or Group 2, as defined in § 63.111. For each process vent within the source, provide the information listed in paragraphs (e)(1)(i) through (iv) of this section.
 - (i) The chemical manufacturing process unit(s) that is the origin of all or part of the vent stream that exits the process vent.
 - (ii) The type(s) of unit operations (i.e., an air oxidation reactor, distillation unit, or reactor) that creates the vent stream that exits the process vent.
 - (iii) For a Group 2 process vent, the last recovery device, if any.
 - (iv) For a Group 1 process vent, the control device, or other equipment used for compliance.
 - (2) The control technology or method of compliance that will be applied to each Group 1 emission point.

- (3) A statement that the compliance demonstration, monitoring, inspection, recordkeeping, and reporting provisions in §§ 63.113 through 63.149 of this subpart that are applicable to each emission point will be implemented beginning on the date of compliance.
 - (4) The operating plan required in § 63.122(a)(2) and (b) of this subpart for each storage vessel controlled with a closed vent system with a control device other than a flare.
 - (5) The monitoring information in § 63.151(f) of this subpart if, for any emission point, the owner or operator of a source seeks to comply through use of a control technique other than those for which monitoring parameters are specified in § 63.114 for process vents, § 63.127 for transfer, and § 63.143 for process wastewater.
- (f) The owner or operator who has been directed by any section of this subpart that expressly references this paragraph to set unique monitoring parameters or who requests approval to monitor a different parameter than those listed in § 63.114 for process vents, § 63.127 for transfer, or § 63.143 for process wastewater of this subpart shall submit the information specified in paragraphs (f)(1), (f)(2), and (f)(3) of this section with the operating permit application or as otherwise specified by the permitting authority.
- (1) A description of the parameter(s) to be monitored to ensure the control technology or pollution prevention measure is operated in conformance with its design and achieves the specified emission limit, percent reduction, or nominal efficiency, and an explanation of the criteria used to select the parameter(s).
 - (2) A description of the methods and procedures that will be used to demonstrate that the parameter indicates proper operation of the control device, the schedule for this demonstration, and a statement that the owner or operator will establish a range for the monitored parameter as part of the Notification of Compliance Status report required in § 63.152(b) of this subpart, unless this information has already been included in the operating permit application.
 - (3) The frequency and content of monitoring, recording, and reporting if monitoring and recording is not continuous, or if reports of daily average values when the monitored parameter value is outside the range established in the operating permit or Notification of Compliance Status will not be included in Periodic Reports required under § 63.152(c) of this subpart. The rationale for the proposed monitoring, recording, and reporting system shall be included.
- (g) An owner or operator may request approval to use alternatives to the continuous operating parameter monitoring and recordkeeping provisions listed in §§ 63.114, 63.117, and 63.118 for process vents, §§ 63.127, 63.129, and 63.130 for transfer operations, and §§ 63.143, 63.146, and 63.147 for wastewater.
- (1) Requests shall be included in the operating permit application or as otherwise specified by the permitting authority and shall contain the information specified in paragraphs (g)(3) through (g)(5) of this section, as applicable.
 - (2) The provisions in § 63.8(f)(5)(i) of subpart A shall govern the review and approval of requests.
 - (3) An owner or operator of a source that does not have an automated monitoring and recording system capable of measuring parameter values at least once every 15 minutes and generating continuous records may request approval to use a non-automated system with less frequent monitoring.
 - (i) The requested system shall include manual reading and recording of the value of the relevant operating parameter no less frequently than once per hour. Daily average values shall be calculated from these hourly values and recorded.

(ii) The request shall contain:

- (A) A description of the planned monitoring and recordkeeping system;
- (B) Documentation that the source does not have an automated monitoring and recording system;
- (C) Justification for requesting an alternative monitoring and recordkeeping system; and
- (D) Demonstration to the Administrator's satisfaction that the proposed monitoring frequency is sufficient to represent control device operating conditions considering typical variability of the specific process and control device operating parameter being monitored.

(4) An owner or operator may request approval to use an automated data compression recording system that does not record monitored operating parameter values at a set frequency (for example once every 15 minutes) but records all values that meet set criteria for variation from previously recorded values.

(i) The requested system shall be designed to:

- (A) Measure the operating parameter value at least once every 15 minutes.
- (B) Record at least four values each hour during periods of operation.
- (C) Record the date and time when monitors are turned off or on.
- (D) Recognize unchanging data that may indicate the monitor is not functioning properly, alert the operator, and record the incident.
- (E) Compute daily average values of the monitored operating parameter based on recorded data.
- (F) If the daily average is not an excursion, as defined in § 63.152(c)(2)(ii), the data for that operating day may be converted to hourly average values and the four or more individual records for each hour in the operating day may be discarded.

(ii) The request shall contain a description of the monitoring system and data compression recording system, including the criteria used to determine which monitored values are recorded and retained, the method for calculating daily averages, and a demonstration that the system meets all criteria in paragraph (g)(4)(i) of this section.

(5) An owner or operator may request approval to use other alternative monitoring systems according to the procedures specified in § 63.8(f) of subpart A of this part.

(h) The owner or operator required to prepare an Implementation Plan, or otherwise required to submit a report, under paragraph (c), (d), or (e) of this section shall also submit a supplement for any additional alternative controls or operating scenarios that may be used to achieve compliance.

(i) The owner or operator of a source required to submit an Implementation Plan for emissions averaging under paragraphs (c) and (d) of this section shall also submit written updates of the Implementation Plan to the Administrator for approval under the circumstances described in paragraphs (i)(1) and (i)(2) of this section unless the relevant information has been included and submitted in an operating permit application or amendment.

- (1) The owner or operator who plans to make a change listed in paragraph (i)(1)(i) or (i)(1)(ii) of this section shall submit an Implementation Plan update at least 120 calendar days prior to making the change.
 - (i) Whenever an owner or operator elects to achieve compliance with the emissions averaging provisions in § 63.150 of this subpart by using a control technique other than that specified in the Implementation Plan or plans to monitor a different parameter or operate a control device in a manner other than that specified in the Implementation Plan.
 - (ii) Whenever an emission point or a chemical manufacturing process unit is added to an existing source and is planned to be included in an emissions average, or whenever an emission point not included in the emissions average described in the Implementation Plan is to be added to an emissions average. The information in paragraph (d) of this section shall be updated to include the additional emission point.
 - (2) The owner or operator who has made a change listed in paragraph (i)(2)(i) or (i)(2)(ii) of this section shall submit an Implementation Plan update within 90 calendar days after the information regarding the change is known to the source. The update may be submitted in the next quarterly Periodic Report if the change is made after the date the Notification of Compliance status is due.
 - (i) Whenever a process change is made such that the group status of any emission point in an emissions average changes.
 - (ii) Whenever a value of a parameter in the emission credit or debit equations in § 63.150(g) or (h) changes such that it is outside the range specified in the Implementation Plan and causes a decrease in the projected credits or an increase in the projected debits.
 - (3) The Administrator shall approve or request changes to the Implementation Plan update within 120 calendar days of receipt of sufficient information regarding the change for emission points included in emissions averages.
- (j) The owner or operator of a source subject to this subpart, for emission points that are not included in an emissions average, shall report to the Administrator under the circumstances described in paragraphs (j)(1), (j)(2), and (j)(3) of this section unless the relevant information has been included and submitted in an operating permit application or amendment, or as otherwise specified by the permitting authority. The information shall be submitted within 180 calendar days after the change is made or the information regarding the change is known to the source. The update may be submitted in the next Periodic Report if the change is made after the date the Notification of Compliance Status is due.
- (1) Whenever a deliberate change is made such that the group status of any emission point changes. The information submitted shall include a compliance schedule as specified in § 63.100 of subpart F of this part if the emission point becomes Group 1.
 - (2) Whenever an owner or operator elects to achieve compliance with this subpart by using a control technique other than that previously reported to the Administrator or to the permitting authority, or plans to monitor a different parameter, or operate a control device in a manner other than that previously reported.
 - (3) Whenever an emission point or a chemical manufacturing process unit is added to a source, written information specified under paragraphs (e)(1) through (e)(5) of this section, containing information on the new emission point(s) shall be submitted to the EPA regional office where the source is located.

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§ 63.152 General reporting and continuous records.

- (a) The owner or operator of a source subject to this subpart shall submit the reports listed in paragraphs (a)(1) through (a)(5) of this section and keep continuous records of monitored parameters as specified in paragraph (f) of this section. Owners or operators requesting an extension of compliance shall also submit the report described in § 63.151(a)(6) of this subpart.
 - (1) An Initial Notification described in § 63.151(b) of this subpart.
 - (2) An Implementation Plan described in § 63.151(c), (d), and (e) of this subpart for existing sources with emission points that are included in an emissions average or for new sources.
 - (3) A Notification of Compliance Status described in paragraph (b) of this section.
 - (4) Periodic Reports described in paragraph (c) of this section.
 - (5) Other reports described in paragraphs (d) and (e) of this section.
- (b) Each owner or operator of a source subject to this subpart shall submit a Notification of Compliance Status within 150 calendar days after the compliance dates specified in § 63.100 of subpart F of this part.
 - (1) The notification shall include the results of any emission point group determinations, performance tests, inspections, continuous monitoring system performance evaluations, values of monitored parameters established during performance tests, and any other information used to demonstrate compliance or required to be included in the Notification of Compliance Status under § 63.110 (h) for regulatory overlaps, under § 63.117 for process vents, § 63.122 for storage vessels, § 63.129 for transfer operations, § 63.146 for process wastewater, and § 63.150 for emission points included in an emissions average.
 - (i) For performance tests and group determinations that are based on measurements, the Notification of Compliance Status shall include one complete test report for each test method used for a particular kind of emission point. For additional tests performed for the same kind of emission point using the same method, the results and any other information required in § 63.117 for process vents, § 63.129 for transfer, and § 63.146 for process wastewater shall be submitted, but a complete test report is not required. If the performance test report is submitted electronically through the EPA's CEDRI in accordance with paragraph (h) of this section, the process unit(s) tested, the pollutant(s) tested, and the date that such performance test was conducted may be submitted in the notification of compliance status report in lieu of the performance test results. The performance test results must be submitted to CEDRI by the date the notification of compliance status report is submitted.
 - (ii) A complete test report shall include a brief process description, sampling site description, description of sampling and analysis procedures and any modifications to standard procedures, quality assurance procedures, record of operating conditions during the test, record of preparation of standards, record of calibrations, raw data sheets for field sampling, raw data sheets for field and laboratory analyses, documentation of calculations, and any other information required by the test method.

- (2) For each monitored parameter for which a range is required to be established under § 63.114 for process vents, § 63.127 for transfer, § 63.143 for process wastewater, § 63.150(m) for emission points in emissions averages, or § 63.151(f), or § 63.152(e), the Notification of Compliance Status shall include the information in paragraphs (b)(2)(i), (b)(2)(ii), and (b)(2)(iii) of this section, unless the range and the operating day definition have been established in the operating permit. The recordkeeping and reporting requirements applicable to storage vessels are located in §§ 63.122 and 63.123.
 - (i) The specific range of the monitored parameter(s) for each emission point;
 - (ii) The rationale for the specific range for each parameter for each emission point, including any data and calculations used to develop the range and a description of why the range indicates proper operation of the control device.
 - (A) If a performance test is required by this subpart for a control device, the range shall be based on the parameter values measured during the performance test and may be supplemented by engineering assessments and/or manufacturer's recommendations. Performance testing is not required to be conducted over the entire range of permitted parameter values.
 - (B) If a performance test is not required by this subpart for a control device, the range may be based solely on engineering assessments and/or manufacturer's recommendations.
 - (iii) A definition of the source's operating day for purposes of determining daily average values of monitored parameters. The definition shall specify the times at which an operating day begins and ends.
- (3) For emission points included in an emissions average, the Notification of Compliance Status shall include the values of all parameters needed for input to the emission credit and debit equations in § 63.150 (g) and (h), calculated or measured according to the procedures in § 63.150 (g) and (h) of this subpart, and the resulting calculation of credits and debits for the first quarter of the year. The first quarter begins on the compliance date specified in § 63.100 of subpart F.
- (4) If any emission point is subject to this subpart and to other standards as specified in § 63.110 of this subpart and if the provisions of § 63.110 of this subpart allow the owner or operator to choose which testing, monitoring, reporting, and recordkeeping provisions will be followed, then the Notification of Compliance Status shall indicate which rule's requirements will be followed for testing, monitoring, reporting, and recordkeeping.
- (5) An owner or operator who transfers a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream for treatment pursuant to § 63.132(g) shall include in the Notification of Compliance Status the name and location of the transferee and a description of the Group 1 wastewater stream or residual sent to the treatment facility.
- (6) An owner or operator complying with § 63.113(i) shall include in the Notification of Compliance Status, or where applicable, a supplement to the Notification of Compliance Status, the name and location of the transferee, and the identification of the Group 1 process vent.
- (7) For flares subject to the requirements in § 63.108, owners and operators must also submit the information in this paragraph in a supplement to the Notification of Compliance Status within 150 days after the first applicable compliance date for flare monitoring. The supplement to the Notification of Compliance Status must include flare design (e.g., steam-assisted, air-assisted, non-

assisted, or pressure-assisted multi-point); all visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the initial visible emissions demonstration required by § 63.670(h) of subpart CC of this part, as applicable; and all periods during the compliance determination when the pilot flame or flare flame is absent.

- (8) For process vents and storage vessels subject to the requirements of § 63.124, owners and operators must also submit the information in this paragraph in a supplement to the Notification of Compliance Status within 150 days after the first applicable compliance date. The supplement to the Notification of Compliance Status must identify all process vents and storage vessels that are in ethylene oxide service as defined in § 63.101, the method(s) used to control ethylene oxide emissions from each process vent and storage vessel (i.e., use of a flare, scrubber, or other control device) and the information specified in paragraphs (b)(8)(i) and (b)(8)(ii) of this section, as applicable.
 - (i) For process vents, all uncontrolled, undiluted ethylene oxide concentration measurements, and the calculations used to determine the total uncontrolled ethylene oxide mass emission rate for the sum of all vent gas streams; and
 - (ii) For storage vessels, include the concentration of ethylene oxide of the fluid stored in each storage vessel.
 - (9) For adsorbers subject to the requirements of §§ 63.114(a)(5)(v), 63.120(d)(1)(iii), 63.127(b)(4), and 63.139(d)(5), you must also submit the information listed in paragraphs (b)(9)(i) and (ii) of this section in a supplement to the Notification of Compliance Status within 150 days after the first applicable compliance date.
 - (i) Whether the adsorber cannot be regenerated or is a regenerative adsorber(s) that is regenerated offsite.
 - (ii) The breakthrough limit and adsorber bed life established during the initial performance test or design evaluation of the adsorber.
 - (10) For Group 2 process vents subject to the requirements in § 63.113(l), owners and operators must also submit the information in this paragraph in a supplement to the Notification of Compliance Status within 150 days after the first applicable compliance date. The supplement to the Notification of Compliance Status must identify each Group 2 process vent and include the data and calculations specified in § 63.115(g) that are used to demonstrate that the total organic HAP mass flow rate of each vent stream is less than 1.0 pound per hour.
- (c) The owner or operator of a source subject to this subpart shall submit Periodic Reports. On and after July 15, 2027 or once the reporting template for this subpart has been available on the CEDRI website for 1 year, whichever date is later, owners and operators must submit all subsequent reports following the procedure specified in § 63.9(k), except any medium submitted through mail must be sent to the attention of the Hazardous Organic Chemical Manufacturing Sector Lead. Owners and operators must use the appropriate electronic report template on the CEDRI website (<https://www.epa.gov/electronic-reporting-air-emissions/cedri>) for this subpart. The date report templates become available will be listed on the CEDRI website. Unless the Administrator or delegated state agency or other authority has approved a different schedule for submission of reports under § 63.9(i) and § 63.10(a), the report must be submitted by the deadline specified in this subpart, regardless of the method in which the report is submitted.

- (1) Except as specified under paragraphs (c)(5) and (c)(6) of this section, a report containing the information in paragraphs (c)(2), (c)(3), (c)(4), and (c)(7) of this section shall be submitted semiannually no later than 60 calendar days after the end of each 6-month period. The first report shall be submitted no later than 8 months after the date the Notification of Compliance Status is due and shall cover the 6-month period beginning on the date the Notification of Compliance Status is due. All periodic reports must contain the company name and address (including county), as well as the beginning and ending dates of the reporting period.
- (2) Except as provided in paragraph (c)(2)(iv) of this section, for an owner or operator of a source complying with the provisions of §§ 63.113 through 63.147 for any emission points, Periodic Reports shall include all information specified in §§ 63.117 and 63.118 for process vents, § 63.122 for storage vessels, §§ 63.129 and 63.130 for transfer operations, and § 63.146 for process wastewater, including reports of each excursion (*i.e.*, each period when a monitored parameter is outside the established range and periods of insufficient monitoring data) using the procedures described in paragraphs (c)(2)(i) through (c)(2)(iv) of this section.
 - (i) Report the affected sources or equipment, the monitored parameter that was exceeded and the date of each excursion.
 - (ii) The parameter monitoring data for Group 1 emission points and emission points included in emissions averages that are required to perform continuous monitoring shall be used to determine compliance with the required operating conditions for the monitored control devices or recovery devices. For each excursion as specified in paragraphs (c)(2)(ii)(A) through (c)(2)(ii)(E) of this section, or paragraph (g)(2)(iv) of this section, except for excused excursions described therein, the owner or operator shall be deemed to have failed to have applied the control in a manner that achieves the required operating conditions and must report the information specified in paragraph (c)(2)(ii)(F) of this section.
 - (A) An excursion means any of the three cases listed in paragraph (c)(2)(ii)(A)(1), (c)(2)(ii)(A)(2), or (c)(2)(ii)(A)(3) of this section. For a control device or recovery device where multiple parameters are monitored, if one or more of the parameters meets the excursion criteria in paragraph (c)(2)(ii)(A)(1), (c)(2)(ii)(A)(2), or (c)(2)(ii)(A)(3) of this section, this is considered a single excursion for the control device or recovery device.
 - (1) When the daily average value of one or more monitored parameters is outside the permitted range.
 - (2) When the period of control device or recovery device operation is 4 hours or greater in an operating day and monitoring data are insufficient to constitute a valid hour of data for at least 75 percent of the operating hours.
 - (3) When the period of control device or recovery device operation is less than 4 hours in an operating day and more than one of the hours during the period of operation does not constitute a valid hour of data due to insufficient monitoring data.
 - (4) Monitoring data are insufficient to constitute a valid hour of data, as used in paragraphs (c)(2)(ii)(A)(2) and (c)(2)(ii)(A)(3) of this section, if measured values are unavailable for any of the 15-minute periods within the hour. For data compression systems approved under § 63.151(g)(4), monitoring data are insufficient to calculate a valid hour of data if there are less than 4 data values recorded during the hour.

- (B) The number of excused excursions for each control device or recovery device for each semiannual period is specified in paragraphs (c)(2)(ii)(B)(1) through (c)(2)(ii)(B)(6) of this section. This paragraph applies to sources required to submit Periodic Reports semiannually or quarterly. The first semiannual period is the 6-month period starting the date the Notification of Compliance Status is due.
 - (1) For the first semiannual period—six excused excursions.
 - (2) For the second semiannual period—five excused excursions.
 - (3) For the third semiannual period—four excused excursions.
 - (4) For the fourth semiannual period—three excused excursions.
 - (5) For the fifth semiannual period—two excused excursions.
 - (6) For the sixth and all subsequent semiannual periods—one excused excursion.
- (C) A monitored parameter that is outside its established range or monitoring data that are not collected are excursions. However, if the conditions in paragraph (c)(2)(ii)(C)(1) or (c)(2)(ii)(C)(2) of this section are met, these excursions are not violations and do not count toward the number of excused excursions for determining compliance.
 - (1) **Periods of startup, shutdown, or malfunction.** During periods of startup, shutdown, or malfunction when the source is operated during such periods in accordance with § 63.102(a)(4). For each source as defined in § 63.101, on and after July 15, 2027, this paragraph no longer applies.
 - (2) **Periods of nonoperation.** During periods of nonoperation of the chemical manufacturing process unit, or portion thereof, that results in cessation of the emissions to which the monitoring applies.
- (D) Nothing in paragraph (c)(2)(ii) of this section shall be construed to allow or excuse a monitoring parameter excursion caused by any activity that violates other applicable provisions of subpart A, F, or G of this part.
- (E) Paragraph (c)(2)(ii) of this section, except paragraph (c)(2)(ii)(C) of this section, shall apply only to emission points and control devices or recovery devices for which continuous monitoring is required by §§ 63.113 through 63.150.
- (F) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), for each excursion that is not an excused excursion, the report must include a list of the affected sources or equipment, the monitored parameter for which there was an excursion, the date of the excursion, an estimate of the quantity in pounds of each regulated pollutant emitted over any emission limit, a description of the method used to estimate the emissions, the cause of the excursion (including unknown cause, if applicable), as applicable, and the corrective action taken.
- (iii) Periodic Reports shall include the daily average values of monitored parameters for both excused and unexcused excursions, as defined in paragraph (c)(2)(ii)(A) of this section. For excursions caused by lack of monitoring data, the affected equipment or source, the monitored parameter, the start date and duration in hours of periods when monitoring data were not collected shall be specified.

- (iv) The provisions of paragraphs (c)(2) of this section, and (c)(2)(i) through (iii) of this section, do not apply to any storage vessel for which the owner or operator is not required, by the applicable monitoring plan established under § 63.120(d)(2), to keep continuous records. If continuous records are required, the owner or operator shall specify, in the monitoring plan, whether the provisions of paragraphs (c)(2) of this section, and (c)(2)(i) through (iii) of this section apply.
- (3) Except as specified in paragraph (c)(3)(iii) of this section, if any performance tests are reported in a Periodic Report, the following information shall be included:
- (i) One complete test report shall be submitted for each test method used for a particular kind of emission point tested. A complete test report shall contain the information specified in paragraph (b)(1)(ii) of this section.
 - (ii) For additional tests performed for the same kind of emission point using the same method, results and any other information required in § 63.117 for process vents, § 63.129 for transfer, and § 63.146 for process wastewater shall be submitted, but a complete test report is not required.
 - (iii) If the performance test report is submitted electronically through the EPA's CEDRI in accordance with paragraph (h) of this section, the process unit(s) tested, the pollutant(s) tested, and the date that such performance test was conducted may be submitted in the Periodic Report in lieu of the performance test results. The performance test results must be submitted to CEDRI by the date the Periodic Report is submitted.
- (4) Periodic Reports shall include the information in paragraphs (c)(4)(i) through (iv) of this section, as applicable:
- (i) For process vents, reports of process changes as required under § 63.118(g), (h), (i), and (j),
 - (ii) Any supplements required under § 63.151(i) and (j),
 - (iii) Notification if any Group 2 emission point becomes a Group 1 emission point, including a compliance schedule as required in § 63.100, and
 - (iv) For gas streams sent for disposal pursuant to § 63.113(i) or for process wastewater streams sent for treatment pursuant to § 63.132(g), reports of changes in the identity of the transferee.
- (5) The owner or operator of a source shall submit quarterly reports for all emission points included in an emissions average.
- (i) The quarterly reports shall be submitted no later than 60 calendar days after the end of each quarter. The first report shall be submitted with the Notification of Compliance Status no later than 5 months after the compliance date specified in § 63.100.
 - (ii) The quarterly reports shall include the information specified in this paragraph for all emission points included in an emissions average.
 - (A) The credits and debits calculated each month during the quarter;
 - (B) A demonstration that debits calculated for the quarter are not more than 1.30 times the credits calculated for the quarter, as required under § 63.150(e)(4).

- (C) The values of any inputs to the credit and debit equations in § 63.150(g) and (h) that change from month to month during the quarter or that have changed since the previous quarter;
 - (D) Results of any performance tests conducted during the reporting period including one complete report for each test method used for a particular kind of emission point as described in paragraph (c)(3) of this section. If the performance test report is submitted electronically through the EPA's CEDRI in accordance with paragraph (h) of this section, the process unit(s) tested, the pollutant(s) tested, and the date that such performance test was conducted may be submitted in the Periodic Report in lieu of the performance test results. The performance test results must be submitted to CEDRI by the date the Periodic Report is submitted.;
 - (E) Reports of daily average values of monitored parameters for both excused and unexcused excursions as defined in paragraph (c)(2)(ii)(A) of this section. For excursions caused by lack of monitoring data, the duration of periods when monitoring data were not collected shall be specified. Include the affected sources or equipment, monitored parameter, and the date for each excursion.
- (iii) Paragraphs (c)(2)(i) through (iii) of this section shall govern the use of monitoring data to determine compliance for Group 1 and Group 2 points included in emissions averages. For storage vessels to which the provisions of paragraphs (c)(2)(i) through (iii) of this section do not apply (as specified in paragraph (c)(2)(iv) of this section), the owner or operator is required to comply with the provisions of the applicable monitoring plan, and monitoring records may be used to determine compliance.
- (iv) Every fourth quarterly report shall include the following:
- (A) A demonstration that annual credits are greater than or equal to annual debits as required by § 63.150(e)(3); and
 - (B) A certification of compliance with all the emissions averaging provisions in § 63.150.
- (6) The owner or operator of a source shall submit reports quarterly for particular emission points not included in an emissions average under the circumstances described in paragraphs (c)(6)(i) through (v) of this section.
- (i) The owner or operator of a source subject to this subpart shall submit quarterly reports for a period of one year for an emission point that is not included in an emissions average if:
 - (A) The emission point has more excursions, as defined in paragraph (c)(2)(ii) of this section, than the number of excused excursions allowed under paragraph (c)(2)(ii)(B) of this section for a semiannual reporting period; and
 - (B) The Administrator requests the owner or operator to submit quarterly reports for the emission point.
 - (ii) The quarterly reports shall include all information in paragraphs (c)(2), (3), and (4) of this section applicable to the emission point(s) for which quarterly reporting is required under paragraph (c)(6)(i) of this section. Information applicable to other emission points within the source shall be submitted in the semiannual reports required under paragraph (c)(1) of this section.

- (iii) Quarterly reports shall be submitted no later than 60 calendar days after the end of each quarter.
 - (iv) After quarterly reports have been submitted for an emission point for one year, the owner or operator may return to semiannual reporting for the emission point unless the Administrator requests the owner or operator to continue to submit quarterly reports.
 - (v) Paragraphs (c)(2)(i) through (iii) of this section shall govern the use of monitoring data to determine compliance for Group 1 emission points. For storage vessels to which the provisions of paragraphs (c)(2)(i) through (iii) of this section do not apply (as specified in paragraph (c)(2)(iv) of this section), the owner or operator is required to comply with the provisions of the applicable monitoring plan, and monitoring records may be used to determine compliance.
- (7) The information specified in § 63.108(l)(2) of subpart F of this part.
- (d) Other reports shall be submitted as specified in subpart A of this part or in §§ 63.113 through 63.151 of this subpart. These reports are:
- (1) Reports of start-up, shutdown, and malfunction required by § 63.10(d)(5). The start-up, shutdown and malfunction reports may be submitted on the same schedule as the Periodic Reports required under paragraph (c) of this section instead of the schedule specified in § 63.10(d)(5). For each source as defined in § 63.101, on and after July 15, 2027, this paragraph no longer applies.
 - (2) For storage vessels, the notifications of inspections required by § 63.122 (h)(1) and (h)(2) of this subpart.
 - (3) For owners or operators of sources required to request approval for a nominal control efficiency for use in calculating credits for an emissions average, the information specified in § 63.150(i) of this subpart.
 - (4) If an owner or operator transfers for disposal a gas stream that has the characteristics specified in § 63.107(b) through (h) or meets the criteria specified in § 63.107(i) to an off-site location or an on-site location not owned or operated by the owner or operator of the source and the vent stream was not included in the information submitted with the Notification of Compliance Status or a previous periodic report, the owner or operator shall submit a supplemental report. The supplemental report shall be submitted no later than July 23, 2001 or with the next periodic report, whichever is later. The report shall provide the information listed in paragraphs (d)(4)(i) through (iv) of this section.
 - (i) The chemical manufacturing process unit(s) that is the origin of all or part of the vent stream that exits the process vent.
 - (ii) The type(s) of unit operations (i.e., an air oxidation reactor, distillation unit, or reactor) that creates the vent stream that exits the process vent.
 - (iii) For a Group 2 process vent, the last recovery device, if any.
 - (iv) For a Group 1 process vent, the identity of the transferee.
- (e) An owner or operator subject to this subpart shall submit the information specified in paragraphs (e)(1) through (e)(4) of this section with the operating permit application or as otherwise specified by the permitting authority. The owner or operator shall submit written updates as amendments to the operating permit application on the schedule and under the circumstances described in § 63.151(j) of this subpart. Notwithstanding, if the owner or operator has an operating permit under 40 CFR part 70 or 71, the owner or operator shall follow the schedule and format required by the permitting authority.

- (1) The information specified in § 63.151 (f) or (g) of this subpart for any emission points for which the owner or operator requests approval to monitor a unique parameter or use an alternative monitoring and recording system, and
 - (2) The information specified in § 63.151(d) of this subpart for points included in an emissions average.
 - (3) The information specified in § 63.151(e) of this subpart for points not included in an emissions average.
 - (4) The information specified in § 63.151(h) as applicable.
- (f) Owners or operators required to keep continuous records by §§ 63.118, 63.130, 63.147, 63.150, or other sections of this subpart shall keep records as specified in paragraphs (f)(1) through (f)(7) of this section, unless an alternative recordkeeping system has been requested and approved under § 63.151(f) or (g) or § 63.152(e) or under § 63.8(f), and except as provided in paragraph (c)(2)(ii)(C) of this section or in paragraph (g) of this section. If a monitoring plan for storage vessels pursuant to § 63.120(d)(2)(i) requires continuous records, the monitoring plan shall specify which provisions, if any, of paragraphs (f)(1) through (f)(7) of this section apply. Any records required to be maintained by this part that are submitted electronically via the EPA's CEDRI may be maintained in electronic format. This ability to maintain electronic copies does not affect the requirement for facilities to make records, data, and reports available upon request to a delegated air agency or the EPA as part of an on-site compliance evaluation.
- (1) The monitoring system shall measure data values at least once every 15 minutes.
 - (2) The owner or operator shall record either:
 - (i) Each measured data value; or
 - (ii) Block average values for 15-minute or shorter periods calculated from all measured data values during each period or at least one measured data value per minute if measured more frequently than once per minute.
 - (3) If the daily average value of a monitored parameter for a given operating day is within the range established in the Notification of Compliance Status or operating permit, the owner or operator shall either:
 - (i) Retain block hourly average values for that operating day for 5 years and discard, at or after the end of that operating day, the 15-minute or more frequent average values and readings recorded under paragraph (f)(2) of this section; or
 - (ii) Retain the data recorded in paragraph (f)(2) of this section for 5 years.
 - (4) If the daily average value of a monitored parameter for a given operating day is outside the range established in the Notification of Compliance Status or operating permit, the owner or operator shall retain the data recorded that operating day under paragraph (f)(2) of this section for 5 years.
 - (5) Daily average values of each continuously monitored parameter shall be calculated for each operating day, and retained for 5 years, except as specified in paragraphs (f)(6) and (f)(7) of this section.

- (i) The daily average shall be calculated as the average of all values for a monitored parameter recorded during the operating day. The average shall cover a 24-hour period if operation is continuous, or the number of hours of operation per operating day if operation is not continuous.
 - (ii) The operating day shall be the period defined in the operating permit or the Notification of Compliance Status. It may be from midnight to midnight or another daily period.
- (6) If all recorded values for a monitored parameter during an operating day are within the range established in the Notification of Compliance Status or operating permit, the owner or operator may record that all values were within the range and retain this record for 5 years rather than calculating and recording a daily average for that operating day. For these operating days, the records required in paragraph (f)(3) of this section shall also be retained for 5 years.
- (7) Except as specified in paragraph (f)(7)(vi) of this section monitoring data recorded during periods identified in paragraphs (f)(7)(i) through (f)(7)(v) of this section shall not be included in any average computed under this subpart. Records shall be kept of the times and durations of all such periods and any other periods during process or control device operation when monitors are not operating.
- (i) Monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments;
 - (ii) Start-ups;
 - (iii) Shutdowns;
 - (iv) Malfunctions;
 - (v) Periods of non-operation of the chemical manufacturing process unit (or portion thereof), resulting in cessation of the emissions to which the monitoring applies.
 - (vi) For each source as defined in § 63.101, on and after July 15, 2027, paragraphs (f)(7)(ii) through (f)(7)(iv) no longer apply.
- (g) For any parameter with respect to any item of equipment, the owner or operator may implement the recordkeeping requirements in paragraph (g)(1) or (g)(2) of this section as alternatives to the continuous operating parameter monitoring and recordkeeping provisions listed in §§ 63.114, 63.117, and 63.118 for process vents, §§ 63.127, 63.129, and 63.130 for transfer operations, §§ 63.143, 63.146, and 63.147 for wastewater, and/or § 63.152(f), except that § 63.152(f)(7) shall apply. The owner or operator shall retain each record required by paragraph (g)(1) or (g)(2) of this section as provided in § 63.103(c) of subpart F of this part, except as provided otherwise in paragraph (g)(1) or (g)(2) of this section.
- (1) The owner or operator may retain only the daily average value, and is not required to retain more frequent monitored operating parameter values, for a monitored parameter with respect to an item of equipment, if the requirements of paragraphs (g)(1)(i) through (vi) of this section are met. An owner or operator electing to comply with the requirements of paragraph (g)(1) of this section shall notify the Administrator in the Notification of Compliance Status or, if the Notification of Compliance Status has already been submitted, in the periodic report immediately preceding implementation of the requirements of paragraph (g)(1) of this section.
- (i) The monitoring system is capable of detecting unrealistic or impossible data during periods of operation other than startups, shutdowns, or malfunctions (e.g., a temperature reading of -200 °C on a boiler), and will alert the operator by alarm or other means. The owner or operator shall

record the occurrence. All instances of the alarm or other alert in an operating day constitute a single occurrence. For each source as defined in § 63.101, on and after July 15, 2027, the phrase “other than startups, shutdowns, or malfunctions (e.g., a temperature reading of -200 °C on a boiler),” in this paragraph no longer applies.

- (ii) The monitoring system generates, updated at least hourly throughout each operating day, a running average of the monitoring values that have been obtained during that operating day, and the capability to observe this average is readily available to the Administrator on-site during the operating day. The owner or operator shall record the occurrence of any period meeting the criteria in paragraphs (g)(1)(ii)(A) through (C) of this section. All instances in an operating day constitute a single occurrence.
 - (A) The running average is above the maximum or below the minimum established limits;
 - (B) The running average is based on at least 6 1-hour average values; and
 - (C) The running average reflects a period of operation other than a startup, shutdown, or malfunction. For each source as defined in § 63.101, on and after July 15, 2027, the phrase “other than a startup, shutdown, or malfunction” in this paragraph no longer applies.
- (iii) The monitoring system is capable of detecting unchanging data during periods of operation other than startups, shutdowns, or malfunctions, except in circumstances where the presence of unchanging data is the expected operating condition based on past experience (e.g., pH in some scrubbers), and will alert the operator by alarm or other means. The owner or operator shall record the occurrence. All instances of the alarm or other alert in an operating day constitute a single occurrence. For each source as defined in § 63.101, on and after July 15, 2027, the phrase “other than startups, shutdowns, or malfunctions” in this paragraph no longer applies.
- (iv) The monitoring system will alert the owner or operator by an alarm or other means, if the running average parameter value calculated under paragraph (g)(1)(ii) of this section reaches a set point that is appropriately related to the established limit for the parameter that is being monitored.
- (v) The owner or operator shall verify the proper functioning of the monitoring system, including its ability to comply with the requirements of paragraph (g)(1) of this section, at the times specified in paragraphs (g)(1)(v)(A) through (C) of this section. The owner or operator shall document that the required verifications occurred.
 - (A) Upon initial installation.
 - (B) Annually after initial installation.
 - (C) After any change to the programming or equipment constituting the monitoring system, which might reasonably be expected to alter the monitoring system's ability to comply with the requirements of this section.
- (vi) The owner or operator shall retain the records identified in paragraphs (g)(1)(vi)(A) through (C) of this section.
 - (A) Identification of each parameter, for each item of equipment, for which the owner or operator has elected to comply with the requirements of paragraph (g) of this section.

- (B) A description of the applicable monitoring system(s), and of how compliance will be achieved with each requirement of paragraph (g)(1)(i) through (g)(1)(v) of this section. The description shall include monitoring equipment manufacturer(s) and model number(s) and the pollutant or parameter monitored, and identify the location and format (e.g., on-line storage; log entries) for each required record. If the description changes, the owner or operator shall retain both the current and the most recent superseded description. The description, and the most recent superseded description, shall be retained as provided in § 63.103(c) of subpart F of this part, except as provided in paragraph (g)(1)(vi)(D) of this section.
 - (C) A description, and the date, of any change to the monitoring system that would reasonably be expected to affect its ability to comply with the requirements of paragraph (g)(1) of this section.
 - (D) Owners and operators subject to paragraph (g)(1)(vi)(B) of this section shall retain the current description of the monitoring system as long as the description is current, but not less than 5 years from the date of its creation. The current description shall, at all times, be retained on-site or be accessible from a central location by computer or other means that provides access within 2 hours after a request. The owner or operator shall retain the most recent superseded description at least until 5 years from the date of its creation. The superseded description shall be retained on-site (or accessible from a central location by computer that provides access within 2 hours after a request) at least 6 months after its creation. Thereafter, the superseded description may be stored off-site.
- (2) If an owner or operator has elected to implement the requirements of paragraph (g)(1) of this section, and a period of 6 consecutive months has passed without an excursion as defined in paragraph (g)(2)(iv) of this section, the owner or operator is no longer required to record the daily average value for that parameter for that unit of equipment, for any operating day when the daily average value is less than the maximum, or greater than the minimum established limit. With approval by the Administrator, monitoring data generated prior to the compliance date of this subpart shall be credited toward the period of 6 consecutive months, if the parameter limit and the monitoring was required and/or approved by the Administrator.
- (i) If the owner or operator elects not to retain the daily average values, the owner or operator shall notify the Administrator in the next periodic report. The notification shall identify the parameter and unit of equipment.
 - (ii) If, on any operating day after the owner or operator has ceased recording daily averages as provided in paragraph (g)(2) of this section, there is an excursion as defined in paragraph (g)(2)(iv) of this section, the owner or operator shall immediately resume retaining the daily average value for each day, and shall notify the Administrator in the next periodic report. The owner or operator shall continue to retain each daily average value until another period of 6 consecutive months has passed without an excursion as defined in paragraph (g)(2)(iv) of this section.
 - (iii) The owner or operator shall retain the records specified in paragraphs (g)(1) (i), (ii), (iii), (iv), (v), and (vi) of this section. For any calendar week, if compliance with paragraphs (g)(1) (i), (ii), (iii), and (iv) of this section does not result in retention of a record of at least one occurrence or measured parameter value, the owner or operator shall record and retain at least one parameter

value during a period of operation other than a startup, shutdown, or malfunction. For each source as defined in § 63.101, on and after July 15, 2027, the phrase “other than a startup, shutdown, or malfunction” in this paragraph no longer applies.

(iv) For purposes of paragraph (g) of this section, an excursion means that the daily average value of monitoring data for a parameter is greater than the maximum, or less than the minimum established value, except as provided in paragraphs (g)(2)(iv)(A) and (B) of this section.

(A) The daily average value during any startup, shutdown, or malfunction shall not be considered an excursion for purposes of this paragraph (g)(2), if the owner or operator operates the source during such periods in accordance with § 63.102(a)(4). For each source as defined in § 63.101, on and after July 15, 2027, this paragraph no longer applies.

(B) An excused excursion, as described in § 63.152(c)(2)(ii)(B) and (C), shall not be considered an excursion for purposes of this paragraph (g)(2).

(h) Beginning no later than July 15, 2024, owners and operators must submit performance test reports in accordance with this paragraph. Unless otherwise specified in this subpart, within 60 days after the date of completing each performance test required by this subpart, owners and operators must submit the results of the performance test following the procedures specified in § 63.9(k). Data collected using test methods supported by the EPA's Electronic Reporting Tool (ERT) as listed on the EPA's ERT website (<https://www.epa.gov/electronic-reporting-air-emissions/electronic-reporting-tool-ert>) at the time of the test must be submitted in a file format generated through the use of the EPA's ERT. Alternatively, owners and operators may submit an electronic file consistent with the extensible markup language (XML) schema listed on the EPA's ERT website. Data collected using test methods that are not supported by the EPA's ERT as listed on the EPA's ERT website at the time of the test must be included as an attachment in the ERT or alternate electronic file.

[59 FR 19468, Apr. 22, 1994, as amended at 60 FR 63629, Dec. 12, 1995; 61 FR 64577, Dec. 5, 1996; 62 FR 2776, Jan. 17, 1997; 64 FR 20195, Apr. 26, 1999; 66 FR 6934, Jan. 22, 2001; 71 FR 20456, Apr. 20, 2006; 89 FR 43208, May 16, 2024]

§ 63.153 Implementation and enforcement.

(a) This subpart can be implemented and enforced by the U.S. EPA, or a delegated authority such as the applicable State, local, or Tribal agency. If the U.S. EPA Administrator has delegated authority to a State, local, or Tribal agency, then that agency, in addition to the U.S. EPA, has the authority to implement and enforce this subpart. Contact the applicable U.S. EPA Regional Office to find out if implementation and enforcement of this subpart is delegated to a State, local, or Tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or Tribal agency under subpart E of this part, the authorities contained in paragraph (c) of this section are retained by the Administrator of U.S. EPA and cannot be transferred to the State, local, or Tribal agency.

(c) The authorities that cannot be delegated to State, local, or Tribal agencies are as specified in paragraphs (c)(1) through (5) of this section.

(1) Approval of alternatives to the requirements in §§ 63.110, 63.112 through 63.113, 63.119, 63.126, 63.132 through 63.140, 63.148 through 63.149, and 63.150(i)(1) through (4). Follow the requirements in § 63.121 to request permission to use an alternative means of emission limitation for storage vessels. Where these standards reference another subpart, the cited provisions will be

delegated according to the delegation provisions of the referenced subpart. Where these standards reference another subpart and modify the requirements, the requirements shall be modified as described in this subpart. Delegation of the modified requirements will also occur according to the delegation provisions of the referenced subpart.

- (2) Approval of major alternatives to test methods under § 63.7(e)(2)(ii) and (f), as defined in § 63.90, and as required in this subpart.
- (3) Approval of major alternatives to monitoring under § 63.8(f), as defined in § 63.90, and as required in this subpart.
- (4) Approval of major alternatives to recordkeeping and reporting under § 63.10(f), as defined in § 63.90, and as required in this subpart.
- (5) Approval of an alternative to any electronic reporting to the EPA required by this subpart.

[68 FR 37344, June 23, 2003, as amended at 89 FR 43212, May 16, 2024]

Table 1 to Subpart G of Part 63—Process Vents—Coefficients for Total Resource Effectiveness for Existing Source Nonhalogenated and Halogenated Vent Streams

Type of Stream	Control Device Basis	Values of Coefficients			
		a	b	c	d
Nonhalogenated	Flare	1.935	3.660×10^{-1}	-7.687×10^{-3}	-7.333×10^{-4}
	Thermal Incinerator 0 Percent Heat Recovery	1.492	6.267×10^{-2}	3.177×10^{-2}	-1.159×10^{-3}
	Thermal Incinerator 70 Percent Heat Recovery	2.519	1.183×10^{-2}	1.300×10^{-2}	4.790×10^{-2}
Halogenated	Thermal Incinerator and Scrubber	3.995	5.200×10^{-2}	-1.769×10^{-3}	9.700×10^{-4}

Table 1A to Subpart G of Part 63—Applicable 40 CFR Part 63 General Provisions

40 CFR part 63, subpart A, provisions applicable to subpart G
§ 63.1(a)(1), (a)(2), (a)(3), (a)(13), (a)(14), (b)(2) and (c)(4)
§ 63.2
§ 63.5(a)(1), (a)(2), (b), (d)(1)(ii), (d)(3)(i), (d)(3)(iii) through (d)(3)(vi), (d)(4), (e), (f)(1), and (f)(2)
§ 63.6(a), (b)(3), (c)(5), (i)(1), (i)(2), (i)(4)(i)(A), (i)(5) through (i)(14), (i)(16) and (j)
^a The notifications specified in § 63.9(b)(4)(i) and (b)(5) shall be submitted at the times specified in 40 CFR part 65.

40 CFR part 63, subpart A, provisions applicable to subpart G
§ 63.9(a)(2), (b)(4)(i), ^a (b)(4)(ii), (b)(4)(iii), (b)(5), ^a (c), (d), (j), and (k).
§ 63.10(d)(4)
§ 63.11 (c), (d), and (e)
§ 63.12(b)
^a The notifications specified in § 63.9(b)(4)(i) and (b)(5) shall be submitted at the times specified in 40 CFR part 65.

[59 FR 19468, Apr. 22, 1994, as amended at 73 FR 78213, Dec. 22, 2008; 85 FR 73887, Nov. 19, 2020]

Table 2 to Subpart G of Part 63—Process Vents—Coefficients for Total Resource Effectiveness for New Source Nonhalogenated and Halogenated Vent Streams

Type of stream	Control device basis	Values of Coefficients			
		a	b	c	d
Nonhalogenated	Flare	0.5276	0.0998	2.096×10^{-3}	2.000×10^{-4}
	Thermal Incinerator 0 Percent Heat Recovery	0.4068	0.0171	8.664×10^{-3}	3.162×10^{-4}
	Thermal Incinerator 70 Percent Heat Recovery	0.6868	3.209×10^{-3}	3.546×10^{-3}	1.306×10^{-2}
Halogenated	Thermal Incinerator and Scrubber	1.0895	1.417×10^{-2}	4.822×10^{-4}	2.645×10^{-4}

Table 3 to Subpart G of Part 63—Process Vents—Process Vents—Monitoring, Recordkeeping, and Reporting Requirements for Control Devices and Recapture Devices

TABLE 3 TO SUBPART G OF PART 63—PROCESS VENTS—MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS FOR CONTROL DEVICES AND RECAPTURE DEVICES

Control or recapture device	Parameters to be monitored ^a	Recordkeeping and reporting requirements for monitored parameters
Thermal incinerator, other than a thermal oxidizer used to comply with § 63.124	Firebox temperature ^b [63.114(a)(1)(i)]	1. Continuous records.^c 2. Record and report the firebox temperature averaged over the full period of the performance test—NCS.^d 3. Record the daily average firebox temperature for each operating day.^e 4. Report all daily average temperatures that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected f—PR.^g
Thermal oxidizer used to comply with § 63.124	Combustion chamber temperature [63.124(b)(5)(i)]	1. Continuous records.^c 2. Record and report the combustion chamber temperature averaged over the full period of the performance test—NCS.^d 3. Record each 1-hour block average firebox temperature for each operating day. 4. Report all 1-hour block temperatures that are outside the

^a Regulatory citations are listed in brackets.

^b Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

^c "Continuous records" is defined in § 63.111 of this subpart.

^d NCS = Notification of Compliance Status described in § 63.152 of this subpart.

^e The daily average is the average of all recorded parameter values for the operating day. If all recorded values during an operating day are within the range established in the NCS or operating permit, a statement to this effect can be recorded instead of the daily average.

^f The periodic reports shall include the duration of periods when monitoring data is not collected for each excursion as defined in § 63.152(c)(2)(ii)(A) of this subpart.

^g PR = Periodic Reports described in § 63.152 of this subpart.

^h Alternatively, these devices may comply with the organic monitoring device provisions listed at this table under "All recapture devices."

Control or recapture device	Parameters to be monitored ^a	Recordkeeping and reporting requirements for monitored parameters
Thermal oxidizer used to comply with § 63.124 (Continued)	Flue gas flow rate [63.124(b)(5)(ii)]	range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected ^f —PR. ^g 1. Continuous records. ^c 2. Record and report the flue gas flow rate averaged over the full period of the performance test—NCS. ^d 3. Record each 1-hour block average flue gas flow rate for each operating day. 4. Report all 1-hour block flue gas flow rates that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected ^f —PR. ^g
Catalytic incinerator	Temperature upstream and downstream of the catalyst bed [63.114(a)(1)(ii)]	1. Continuous records. ^c 2. Record and report the upstream and downstream temperatures and the temperature difference across the catalyst bed averaged over the full period of the performance test—NCS. ^d 3. Record the daily average upstream temperature and temperature difference across the catalyst bed for each operating day. ^e 4. Report all daily average upstream temperatures that are outside the range established in the NCS or operating permit—PR. 5. Report all daily average temperature differences across the catalyst bed that are outside the range established in the NCS or operating permit—PR. ^g

^a Regulatory citations are listed in brackets.

^b Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

^c "Continuous records" is defined in § 63.111 of this subpart.

^d NCS = Notification of Compliance Status described in § 63.152 of this subpart.

^e The daily average is the average of all recorded parameter values for the operating day. If all recorded values during an operating day are within the range established in the NCS or operating permit, a statement to this effect can be recorded instead of the daily average.

^f The periodic reports shall include the duration of periods when monitoring data is not collected for each excursion as defined in § 63.152(c)(2)(ii)(A) of this subpart.

^g PR = Periodic Reports described in § 63.152 of this subpart.

^h Alternatively, these devices may comply with the organic monitoring device provisions listed at this table under "All recapture devices."

Control or recapture device	Parameters to be monitored ^a	Recordkeeping and reporting requirements for monitored parameters
Flare (if meeting the requirements of § 63.11(b))	Presence of a flame at the pilot light [§ 63.114(a)(2)]	6. Report all operating days when insufficient monitoring data are collected.^f 1. Hourly records of whether the monitor was continuously operating and whether the pilot flame was continuously present during each hour. 2. Record and report the presence of a flame at the pilot light over the full period of the compliance determination—NCS.^d 3. Record the times and durations of all periods when all pilot flames are absent or the monitor is not operating. 4. Report the times and durations of all periods when all pilot flames of a flare are absent—PR.^g
Flare (if meeting the requirements of § 63.108)	The parameters are specified in § 63.108	1. Records as specified in § 63.108(m) of subpart F of this part. 2. Report information as specified in § 63.108(l) of subpart F of this part—PR.^g
Boiler or process heater with a design heat input capacity less than 44 megawatts and vent stream is not introduced with or as the	Firebox temperature ^b [§ 63.114(a)(3)]	1. Continuous records.^c 2. Record and report the firebox temperature averaged over the full period of the performance test—NCS.^d 3. Record the daily average firebox temperature for each operating day.^e

^a Regulatory citations are listed in brackets.

^b Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

^c "Continuous records" is defined in § 63.111 of this subpart.

^d NCS = Notification of Compliance Status described in § 63.152 of this subpart.

^e The daily average is the average of all recorded parameter values for the operating day. If all recorded values during an operating day are within the range established in the NCS or operating permit, a statement to this effect can be recorded instead of the daily average.

^f The periodic reports shall include the duration of periods when monitoring data is not collected for each excursion as defined in § 63.152(c)(2)(ii)(A) of this subpart.

^g PR = Periodic Reports described in § 63.152 of this subpart.

^h Alternatively, these devices may comply with the organic monitoring device provisions listed at this table under "All recapture devices."

Control or recapture device	Parameters to be monitored ^a	Recordkeeping and reporting requirements for monitored parameters
primary fuel		4. Report all daily average firebox temperatures that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected ^f —PR. ^g
Scrubber for halogenated vent streams (Note: Controlled by a combustion device other than a flare)	pH of scrubber effluent [§ 63.114(a)(4)(i)], and	1. Continuous records. ^c 2. Record and report the pH of the scrubber effluent averaged over the full period of the performance test—NCS. ^d
Scrubber for halogenated vent streams (Note: Controlled by a combustion device other than a flare) (Continued)	Scrubber liquid and gas flow rates [§ 63.114(a)(4)(ii)]	3. Record the daily average pH of the scrubber effluent for each operating day. ^e 4. Report all daily average pH values of the scrubber effluent that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected ^f —PR. ^g 1. Continuous records of scrubber liquid flow rate. ^c 2. Record and report the scrubber liquid/gas ratio averaged over the full period of the performance test—NCS. ^d

^a Regulatory citations are listed in brackets.

^b Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

^c "Continuous records" is defined in § 63.111 of this subpart.

^d NCS = Notification of Compliance Status described in § 63.152 of this subpart.

^e The daily average is the average of all recorded parameter values for the operating day. If all recorded values during an operating day are within the range established in the NCS or operating permit, a statement to this effect can be recorded instead of the daily average.

^f The periodic reports shall include the duration of periods when monitoring data is not collected for each excursion as defined in § 63.152(c)(2)(ii)(A) of this subpart.

^g PR = Periodic Reports described in § 63.152 of this subpart.

^h Alternatively, these devices may comply with the organic monitoring device provisions listed at this table under "All recapture devices."

Control or recapture device	Parameters to be monitored ^a	Recordkeeping and reporting requirements for monitored parameters
All control devices	Presence of flow diverted to the atmosphere from the control device [§ 63.114(d)(1)] or	3. Record the daily average scrubber liquid/gas ratio for each operating day.^e 4. Report all daily average scrubber liquid/gas ratios that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected ^f—PR. ^g 1. Hourly records of whether the flow indicator was operating and whether diversion was detected at any time during each hour. 2. Record and report the times and durations of all periods when the vent stream is diverted through a bypass line or the monitor is not operating—PR.^g 3. For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), record and report the start date, start time, duration in hours, estimate of the volume of gas in standard cubic feet, the concentration of organic HAP in the gas in parts per million by volume and the resulting mass emissions of organic HAP in pounds that bypass a control device. For periods when the flow indicator is not operating, report the start date, start time, and duration in hours—PR.^g
All control devices (Continued)	Monthly inspections of sealed valves [§ 63.114(d)(2)]	1. Records that monthly inspections were performed. 2. Record and report all monthly inspections that show the valves are moved to the diverting position or the seal has been changed—PR.^g 3. For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), record and report the start date, start time, duration in hours,

^a Regulatory citations are listed in brackets.

^b Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

^c "Continuous records" is defined in § 63.111 of this subpart.

^d NCS = Notification of Compliance Status described in § 63.152 of this subpart.

^e The daily average is the average of all recorded parameter values for the operating day. If all recorded values during an operating day are within the range established in the NCS or operating permit, a statement to this effect can be recorded instead of the daily average.

^f The periodic reports shall include the duration of periods when monitoring data is not collected for each excursion as defined in § 63.152(c)(2)(ii)(A) of this subpart.

^g PR = Periodic Reports described in § 63.152 of this subpart.

^h Alternatively, these devices may comply with the organic monitoring device provisions listed at this table under "All recapture devices."

Control or recapture device	Parameters to be monitored ^a	Recordkeeping and reporting requirements for monitored parameters
All recapture devices (as an alternative to the below for absorbers, condensers, and carbon adsorbers)	Concentration level or reading indicated by an organic monitoring device at the outlet of the recovery device [§ 63.114(a)(5)(i)]	estimate of the volume of gas in standard cubic feet, the concentration of organic HAP in the gas in parts per million by volume and the resulting mass emissions of organic HAP in pounds that bypass a control device. For periods when the flow indicator is not operating, report the start date, start time, and duration in hours—PR.^g 1. Continuous records.^c 2. Record and report the concentration level or reading averaged over the full period of the performance test—NCS.^d
Absorber ^h	Exit temperature of the absorbing liquid [§ 63.114(a)(5)(ii)], and	3. Record the daily average concentration level or reading for each operating day.^e 4. Report all daily average concentration levels or readings that are outside the range established in the NCS or operating permit—PR.^g 1. Continuous records.^c 2. Record and report the exit temperature of the absorbing liquid averaged over the full period of the performance test—NCS.^d 3. Record the daily average exit temperature of the absorbing liquid for each operating day.^e

^a Regulatory citations are listed in brackets.

^b Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

^c "Continuous records" is defined in § 63.111 of this subpart.

^d NCS = Notification of Compliance Status described in § 63.152 of this subpart.

^e The daily average is the average of all recorded parameter values for the operating day. If all recorded values during an operating day are within the range established in the NCS or operating permit, a statement to this effect can be recorded instead of the daily average.

^f The periodic reports shall include the duration of periods when monitoring data is not collected for each excursion as defined in § 63.152(c)(2)(ii)(A) of this subpart.

^g PR = Periodic Reports described in § 63.152 of this subpart.

^h Alternatively, these devices may comply with the organic monitoring device provisions listed at this table under "All recapture devices."

Control or recapture device	Parameters to be monitored ^a	Recordkeeping and reporting requirements for monitored parameters
Absorber ^h (Continued)	Exit specific gravity [§ 63.114(a)(5)(ii)]	4. Report all the daily average exit temperatures of the absorbing liquid that are outside the range established in the NCS or operating permit—PR. ^g 1. Continuous records. ^c 2. Record and report the exit specific gravity averaged over the full period of the performance test—NCS. ^d 3. Record the daily average exit specific gravity for each operating day. ^e 4. Report all daily average exit specific gravity values that are outside the range established in the NCS or operating permit—PR. ^g
Condenser ^h	Exit (product side) temperature [§ 63.114(a)(5)(iii)]	1. Continuous records. ^c 2. Record and report the exit temperature averaged over the full period of the performance test—NCS. ^d 3. Record the daily average exit temperature for each operating day ^e . 4. Report all daily average exit temperatures that are outside the range established in the NCS or operating permit—PR. ^g
Carbon adsorber ^h	Total regeneration stream mass or volumetric flow during carbon bed regeneration cycle(s) [§ 63.114(a)(5)(iv)],	1. Record of total regeneration stream mass or volumetric flow for each carbon bed regeneration cycle. 2. Record and report the total regeneration stream mass or volumetric flow during each carbon bed regeneration cycle during the period of the performance test—NCS. ^d

^a Regulatory citations are listed in brackets.

^b Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

^c "Continuous records" is defined in § 63.111 of this subpart.

^d NCS = Notification of Compliance Status described in § 63.152 of this subpart.

^e The daily average is the average of all recorded parameter values for the operating day. If all recorded values during an operating day are within the range established in the NCS or operating permit, a statement to this effect can be recorded instead of the daily average.

^f The periodic reports shall include the duration of periods when monitoring data is not collected for each excursion as defined in § 63.152(c)(2)(ii)(A) of this subpart.

^g PR = Periodic Reports described in § 63.152 of this subpart.

^h Alternatively, these devices may comply with the organic monitoring device provisions listed at this table under "All recapture devices."

Control or recapture device	Parameters to be monitored ^a	Recordkeeping and reporting requirements for monitored parameters
Carbon adsorber ^h (Continued)	and Temperature of the carbon bed after regeneration [and within 15 minutes of completing any cooling cycle(s)] [§ 63.114(a)(5)(iv)]	3. Report all carbon bed regeneration cycles when the total regeneration stream mass or volumetric flow is outside the range established in the NCS or operating permit—PR. ^g 1. Records of the temperature of the carbon bed after each regeneration. 2. Record and report the temperature of the carbon bed after each regeneration during the period of the performance test—NCS. ^d
Carbon adsorber ^h (Continued)	Outlet HAP or TOC concentration [§ 63.114(a)(5)(v)]	3. Report all carbon bed regeneration cycles during which temperature of the carbon bed after regeneration is outside the range established in the NCS or operating permit—PR. ^g For each nonregenerative adsorber and regenerative adsorber that is regenerated offsite subject to the requirements in § 63.114(a)(5)(v), the owner or operator must record each outlet HAP or TOC concentration measured according to §§ 63.114(a)(5)(v)(B) and (C).
Carbon adsorber ^h (Continued)	Adsorbent replacement [§ 63.114(a)(5)(v)]	1. For each nonregenerative adsorber and regenerative adsorber that is regenerated offsite subject to the requirements in § 63.114(a)(5)(v), the owner or operator must record date and time the adsorbent was last replaced.
Carbon adsorber ^h	Breakthrough [§ 63.114(a)(5)(v)]	For each nonregenerative adsorber and regenerative adsorber that is regenerated offsite subject to the requirements in §

^a Regulatory citations are listed in brackets.

^b Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

^c "Continuous records" is defined in § 63.111 of this subpart.

^d NCS = Notification of Compliance Status described in § 63.152 of this subpart.

^e The daily average is the average of all recorded parameter values for the operating day. If all recorded values during an operating day are within the range established in the NCS or operating permit, a statement to this effect can be recorded instead of the daily average.

^f The periodic reports shall include the duration of periods when monitoring data is not collected for each excursion as defined in § 63.152(c)(2)(ii)(A) of this subpart.

^g PR = Periodic Reports described in § 63.152 of this subpart.

^h Alternatively, these devices may comply with the organic monitoring device provisions listed at this table under "All recapture devices."

Control or recapture device	Parameters to be monitored ^a	Recordkeeping and reporting requirements for monitored parameters
(Continued)		63.114(a)(5)(v), the owner or operator must: 1. Record breakthrough limit and bed life established according to § 63.114(a)(5)(v)(A). 2. Report the date of each instance when breakthrough, as defined in § 63.101, is detected between the first and second adsorber and the adsorber is not replaced according to § 63.114(a)(5)(v)(A)(1)—PR. ^g
Scrubber with a reactant tank used to comply with § 63.124	Liquid-to-gas ratio [§ 63.124(b)(4)(i)]	1. Continuous records. ^c 2. Record and report the L/G of the scrubber averaged over the full period of the performance test—NCS. ^d 3. Record each 1-hour block L/G of the scrubber for each operating day. 4. Report all 1-hour block L/G values of the scrubber that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected ^f —PR. ^g
Scrubber with a reactant tank used to comply with § 63.124 (Continued)	In lieu of liquid-to-gas ratio, scrubber total liquid flow rate and gas flow rate through scrubber [§ 63.124(b)(4)(i)]	1. Continuous records. ^c 2. Record and report both the total scrubber liquid flow rate and gas flow rate through the scrubber averaged over the full period of the performance test—NCS. ^d 3. Record each 1-hour block total scrubber liquid flow rate and each 1-hour block gas flow rate through the scrubber for each operating day.

^a Regulatory citations are listed in brackets.

^b Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

^c "Continuous records" is defined in § 63.111 of this subpart.

^d NCS = Notification of Compliance Status described in § 63.152 of this subpart.

^e The daily average is the average of all recorded parameter values for the operating day. If all recorded values during an operating day are within the range established in the NCS or operating permit, a statement to this effect can be recorded instead of the daily average.

^f The periodic reports shall include the duration of periods when monitoring data is not collected for each excursion as defined in § 63.152(c)(2)(ii)(A) of this subpart.

^g PR = Periodic Reports described in § 63.152 of this subpart.

^h Alternatively, these devices may comply with the organic monitoring device provisions listed at this table under "All recapture devices."

Control or recapture device	Parameters to be monitored ^a	Recordkeeping and reporting requirements for monitored parameters
Scrubber with a reactant tank used to comply with § 63.124 (Continued)	pH of liquid in reactant tank [§ 63.124(b)(4)(ii)]	4. Report all 1-hour block total scrubber liquid flow rate values and all 1-hour block gas flow rate through the scrubber values that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected ^f—PR. ^g 1. Continuous records. ^c 2. Record and report the pH of liquid in reactant tank averaged over the full period of the performance test—NCS. ^d 3. Record each 1-hour block pH of liquid in reactant tank for each operating day. 4. Report all 1-hour block values of the pH of liquid in reactant tank that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected ^f—PR. ^g
Scrubber with a reactant tank used to comply with § 63.124 (Continued)	Pressure drop [§ 63.124(b)(4)(iii)]	1. Continuous records. ^c 2. Record and report the pressure drop of the scrubber averaged over the full period of the performance test—NCS. ^d 3. Record each 1-hour block pressure drop of the scrubber for each operating day. 4. Report all 1-hour block pressure drop values that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected ^f—PR. ^g
Scrubber with a	Temperature of	1. Continuous records. ^c

^a Regulatory citations are listed in brackets.

^b Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

^c "Continuous records" is defined in § 63.111 of this subpart.

^d NCS = Notification of Compliance Status described in § 63.152 of this subpart.

^e The daily average is the average of all recorded parameter values for the operating day. If all recorded values during an operating day are within the range established in the NCS or operating permit, a statement to this effect can be recorded instead of the daily average.

^f The periodic reports shall include the duration of periods when monitoring data is not collected for each excursion as defined in § 63.152(c)(2)(ii)(A) of this subpart.

^g PR = Periodic Reports described in § 63.152 of this subpart.

^h Alternatively, these devices may comply with the organic monitoring device provisions listed at this table under "All recapture devices."

Control or recapture device	Parameters to be monitored ^a	Recordkeeping and reporting requirements for monitored parameters
reactant tank used to comply with § 63.124 (Continued)	scrubbing liquid entering column [§ 63.124(b)(4)(iv)]	2. Record and report the temperature of scrubbing liquid entering column averaged over the full period of the performance test—NCS. ^d 3. Record each 1-hour block temperature of scrubbing liquid entering column for each operating day. 4. Report all 1-hour block values of the temperature of scrubbing liquid entering column that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected ^f —PR. ^g
Scrubber with a reactant tank used to comply with § 63.124 (Continued)	Liquid feed pressure [§ 63.124(b)(4)(v)]	1. Continuous records. ^c 2. Record and report the liquid feed pressure of the scrubber averaged over the full period of the performance test—NCS. ^d 3. Record each 1-hour block liquid feed pressure of the scrubber for each operating day. 4. Report all 1-hour block liquid feed pressure values that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected ^f —PR. ^g
Sorbent injection	Sorbent injection rate ^b [§ 63.114(a)(6)(i)]	1. Continuous records. ^c 2. Record and report the sorbent injection rate averaged over the full period of the performance test—NCS. ^d 3. Record the daily average sorbent injection rate for each operating day. ^e

^a Regulatory citations are listed in brackets.

^b Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

^c "Continuous records" is defined in § 63.111 of this subpart.

^d NCS = Notification of Compliance Status described in § 63.152 of this subpart.

^e The daily average is the average of all recorded parameter values for the operating day. If all recorded values during an operating day are within the range established in the NCS or operating permit, a statement to this effect can be recorded instead of the daily average.

^f The periodic reports shall include the duration of periods when monitoring data is not collected for each excursion as defined in § 63.152(c)(2)(ii)(A) of this subpart.

^g PR = Periodic Reports described in § 63.152 of this subpart.

^h Alternatively, these devices may comply with the organic monitoring device provisions listed at this table under "All recapture devices."

Control or recapture device	Parameters to be monitored ^a	Recordkeeping and reporting requirements for monitored parameters
Sorbent injection (Continued)	Carrier gas flow rate ^b [§ 63.114(a)(6)(ii)]	4. Report all daily average sorbent injection rates that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected ^f—PR. ^g 1. Continuous records. ^c 2. Record and report the carrier gas flow rate averaged over the full period of the performance test—NCS. ^d 3. Record the daily average carrier gas flow rate for each operating day. ^e 4. Report all daily average carrier gas flow rates that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected ^f—PR. ^g

^a Regulatory citations are listed in brackets.

^b Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

^c "Continuous records" is defined in § 63.111 of this subpart.

^d NCS = Notification of Compliance Status described in § 63.152 of this subpart.

^e The daily average is the average of all recorded parameter values for the operating day. If all recorded values during an operating day are within the range established in the NCS or operating permit, a statement to this effect can be recorded instead of the daily average.

^f The periodic reports shall include the duration of periods when monitoring data is not collected for each excursion as defined in § 63.152(c)(2)(ii)(A) of this subpart.

^g PR = Periodic Reports described in § 63.152 of this subpart.

^h Alternatively, these devices may comply with the organic monitoring device provisions listed at this table under "All recapture devices."

[89 FR 43212, May 16, 2024]

Table 4 to Subpart G of Part 63—Process Vents—Monitoring, Recordkeeping, and Reporting Requirements for Maintaining a TRE Index Value >1.0 and. ≤4.0 [No Longer Applicable in Accordance With § 63.113(a)(4)]

Final recovery device	Parameters to be monitored ^a	Recordkeeping and reporting requirements for monitored parameters
Absorber ^b	Exit temperature of the absorbing liquid [63.114(b)(1)], and	1. Continuous records ^c. 2. Record and report the exit temperature of the absorbing liquid averaged over the full period of the TRE determination—NCS. ^d 3. Record the daily average exit temperature of the absorbing liquid for each operating day ^e. 4. Report all the daily average exit temperatures of the absorbing liquid that are outside the range established in the NCS or operating permit—PR ^f.
	Exit specific gravity [63.114(b)(1)]	1. Continuous records. 2. Record and report the exit specific gravity averaged over the full period of the TRE determination—NCS. 3. Record the daily average exit specific gravity for each operating day ^e. 4. Report all daily average exit specific gravity values that are outside the range established in the NCS or operating permit—PR.
Condenser ^d	Exit (product side) temperature [63.114(b)(2)]	1. Continuous records. 2. Record and report the exit temperature averaged over the full period of the TRE determination—NCS. 3. Record the daily average exit temperature for each operating day ^e. 4. Report all daily average exit temperatures that are outside the range established in the NCS or operating permit—PR.

^a Regulatory citations are listed in brackets.

^b Alternatively, these devices may comply with the organic monitoring device provisions listed at the end of this table under "All Recovery Devices."

^c "Continuous records" is defined in § 63.111 of this subpart.

^d NCS = Notification of Compliance Status described in § 63.152 of this subpart.

^e The daily average is the average of all values recorded during the operating day. If all recorded values during an operating day are within the range established in the NCS or operating permit, a statement to this effect can be recorded instead of the daily average.

^f PR= Periodic Reports described in § 63.152 of this subpart.

Final recovery device	Parameters to be monitored ^a	Recordkeeping and reporting requirements for monitored parameters
Carbon adsorber ^d	Total regeneration stream mass or volumetric flow during carbon bed regeneration cycle(s) [63.114(b)(3)], and Temperature of the carbon bed after regeneration [and within 15 minutes of completing any cooling cycle(s)] [63.114(b)(3)]	1. Record of total regeneration stream mass or volumetric flow for each carbon bed regeneration cycle. 2. Record and report the total regeneration stream mass or volumetric flow during each carbon bed regeneration cycle during the period of the TRE determination—NCS. 3. Report all carbon bed regeneration cycles when the total regeneration stream mass or volumetric flow is outside the range established in the NCS or operating permit—PR. 1. Records of the temperature of the carbon bed after each regeneration. 2. Record and report the temperature of the carbon bed after each regeneration during the period of the TRE determination—NCS. 3. Report all carbon bed regeneration cycles during which temperature of the carbon bed after regeneration is outside the range established in the NCS or operating permit—PR.
All recovery devices (as an alternative to the above)	Concentration level or reading indicated by an organic monitoring device at the outlet of the recovery device [63.114 (b)]	1. Continuous records. 2. Record and report the concentration level or reading averaged over the full period of the TRE determination—NCS. 3. Record the daily average concentration level or reading for each operating day ^e. 4. Report all daily average concentration levels or readings that are outside the range established in the NCS or operating permit—PR.

^a Regulatory citations are listed in brackets.

^b Alternatively, these devices may comply with the organic monitoring device provisions listed at the end of this table under "All Recovery Devices."

^c "Continuous records" is defined in § 63.111 of this subpart.

^d NCS = Notification of Compliance Status described in § 63.152 of this subpart.

^e The daily average is the average of all values recorded during the operating day. If all recorded values during an operating day are within the range established in the NCS or operating permit, a statement to this effect can be recorded instead of the daily average.

^f PR= Periodic Reports described in § 63.152 of this subpart.

[59 FR 19453, Apr. 22, 1994, as amended at 89 FR 43215, May 16, 2024]

Table 5 to Subpart G of Part 63—Group 1 Storage Vessels at Existing Sources

TABLE 5 TO SUBPART G OF PART 63—GROUP 1 STORAGE VESSELS AT EXISTING SOURCES

Vessel capacity (cubic meters)	Vapor pressure ^a (kilopascals)
75 ≤ capacity <151 ^b	^b ≥13.1
38 ≤ capacity <151 ^c	^c ≥6.9
151 ≤ capacity	≥5.2

^a Maximum true vapor pressure of total organic HAP at storage temperature.

^b For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), these vessel capacity and vapor pressure criterion no longer apply.

^c For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), these vessel capacity and vapor pressure criterion apply.

[89 FR 43215, May 16, 2024]

Table 6 to Subpart G of Part 63—Group 1 Storage Vessels at New Sources

TABLE 6 TO SUBPART G OF PART 63—GROUP 1 STORAGE VESSELS AT NEW SOURCES

Vessel capacity (cubic meters)	Vapor pressure ^a (kilopascals)
38 ≤ capacity <151 ^b	≥13.1 ^b
38 ≤ capacity <151 ^c	≥6.9 ^c
151 ≤ capacity	≥0.7

^a Maximum true vapor pressure of total organic HAP at storage temperature.

^b For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), these vessel capacity and vapor pressure criterion no longer apply.

^c For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), these vessel capacity and vapor pressure criterion apply.

[89 FR 43216, May 16, 2024]

Table 7 to Subpart G of Part 63—Transfer Operations—Monitoring, Recordkeeping, and Reporting Requirements for Complying With 98 Weight-Percent Reduction of Total Organic Hazardous Air Pollutants Emissions or a Limit of 20 Parts per Million by Volume

TABLE 7 TO SUBPART G OF PART 63—TRANSFER OPERATIONS—MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS FOR COMPLYING WITH 98 WEIGHT-PERCENT REDUCTION OF TOTAL ORGANIC HAZARDOUS AIR POLLUTANTS EMISSIONS OR A LIMIT OF 20 PARTS PER MILLION BY VOLUME

Control device	Parameters to be monitored ^a	Recordkeeping and reporting requirements for monitored parameters
Thermal incinerator	Firebox temperature ^b [§ 63.127(a)(1)(i)]	1. Continuous records ^c during loading. 2. Record and report the firebox temperature averaged over the full period of the performance test—NCS. ^d 3. Record the daily average firebox temperature for each operating day. ^e 4. Report daily average temperatures that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected ^f —PR. ^g
Catalytic incinerator	Temperature upstream and downstream of the catalyst bed [§ 63.127(a)(1)(ii)]	1. Continuous records during loading. 2. Record and report the upstream and downstream temperatures and the temperature difference across the catalyst bed averaged over the full period of the performance test—NCS. 3. Record the daily average upstream temperature and temperature difference across catalyst bed for each operating day. ^e

^a Regulatory citations are listed in brackets.

^b Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

^c "Continuous records" is defined in § 63.111 of this subpart.

^d NCS = Notification of Compliance Status described in § 63.152 of this subpart.

^e The daily average is the average of all recorded parameter values for the operating day. If all recorded values during an operating day are within the range established in the NCS or operating permit, a statement to this effect can be recorded instead of the daily average.

^f The periodic reports shall include the duration of periods when monitoring data are not collected for each excursion as defined in § 63.152(c)(2)(ii)(A) of this subpart.

^g PR = Periodic Reports described in § 63.152 of this subpart.

^h Alternatively, these devices may comply with the organic monitoring device provisions listed at the end of this table under "All Recovery Devices."

Control device	Parameters to be monitored ^a	Recordkeeping and reporting requirements for monitored parameters
Boiler or process heater with a design heat input capacity less than 44 megawatts and vent stream is not introduced with or as the primary fuel	Firebox temperature ^b [§ 63.127(a)(3)]	4. Report all daily average upstream temperatures that are outside the range established in the NCS or operating permit—PR. 5. Report all daily average temperature differences across the catalyst bed that are outside the range established in the NCS or operating permit—PR. 6. Report all operating days when insufficient monitoring data are collected.^f 1. Continuous records during loading. 2. Record and report the firebox temperature averaged over the full period of the performance test—NCS. 3. Record the daily average firebox temperature for each operating day.^e
Flare (if meeting the requirements of § 63.126(b)(2)(i))	Presence of a flame at the pilot light [§ 63.127(a)(2)]	4. Report all daily average firebox temperatures that are outside the range established in the NCS or operating permit and all operating days when insufficient data are collected^f—PR. 1. Hourly records of whether the monitor was continuously operating and whether the pilot flame was continuously present during each hour. 2. Record and report the presence of a flame at the pilot light

^a Regulatory citations are listed in brackets.

^b Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

^c "Continuous records" is defined in § 63.111 of this subpart.

^d NCS = Notification of Compliance Status described in § 63.152 of this subpart.

^e The daily average is the average of all recorded parameter values for the operating day. If all recorded values during an operating day are within the range established in the NCS or operating permit, a statement to this effect can be recorded instead of the daily average.

^f The periodic reports shall include the duration of periods when monitoring data are not collected for each excursion as defined in § 63.152(c)(2)(ii)(A) of this subpart.

^g PR = Periodic Reports described in § 63.152 of this subpart.

^h Alternatively, these devices may comply with the organic monitoring device provisions listed at the end of this table under "All Recovery Devices."

Control device	Parameters to be monitored ^a	Recordkeeping and reporting requirements for monitored parameters
Flare (if meeting the requirements of § 63.108)	The parameters are specified in § 63.108	over the full period of the compliance determination—NCS. 3. Record the times and durations of all periods when all pilot flames are absent or the monitor is not operating. 4. Report the duration of all periods when all pilot flames of a flare are absent—PR. 1. Records as specified in § 63.108(m) of subpart F of this part. 2. Report information as specified in § 63.108(l) of subpart F of this part—PR.
Scrubber for halogenated vent streams (Note: Controlled by a combustion device other than a flare)	pH of scrubber effluent [§ 63.127(a)(4)(i)], and	1. Continuous records during loading. 2. Record and report the pH of the scrubber effluent averaged over the full period of the performance test—NCS.
	Scrubber liquid and gas flow rates [§ 63.127(a)(4)(ii)]	3. Record the daily average pH of the scrubber effluent for each operating day. ^e 4. Report all daily average pH values of the scrubber effluent that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected ^f —PR. 1. Continuous records during loading of scrubber liquid flow rate. 2. Record and report the scrubber liquid/gas ratio averaged over the full period of the performance test—NCS. 3. Record the daily average scrubber liquid/gas ratio for each

^a Regulatory citations are listed in brackets.

^b Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

^c "Continuous records" is defined in § 63.111 of this subpart.

^d NCS = Notification of Compliance Status described in § 63.152 of this subpart.

^e The daily average is the average of all recorded parameter values for the operating day. If all recorded values during an operating day are within the range established in the NCS or operating permit, a statement to this effect can be recorded instead of the daily average.

^f The periodic reports shall include the duration of periods when monitoring data are not collected for each excursion as defined in § 63.152(c)(2)(ii)(A) of this subpart.

^g PR = Periodic Reports described in § 63.152 of this subpart.

^h Alternatively, these devices may comply with the organic monitoring device provisions listed at the end of this table under "All Recovery Devices."

Control device	Parameters to be monitored ^a	Recordkeeping and reporting requirements for monitored parameters
Absorber ^h	Exit temperature of the absorbing liquid [§ 63.127(b)(1)], and	operating day.^e 4. Report all daily average scrubber liquid/gas ratios that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected ^f—PR. 1. Continuous records during loading. 2. Record and report the exit temperature of the absorbing liquid averaged over the full period of the performance test—NCS. 3. Record the daily average exit temperature of the absorbing liquid for each operating day.^e 4. Report all daily average exit temperatures of the absorbing liquid that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected ^f—PR.
	Exit specific gravity [§ 63.127(b)(1)]	1. Continuous records during loading. 2. Record and report the exit specific gravity averaged over the full period of the performance test—NCS. 3. Record the daily average exit specific gravity for each operating day.^e 4. Report all daily average exit specific gravity values that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected ^f—PR.
Condenser ^h	Exit (product side)	1. Continuous records during loading. 2. Record and report the exit temperature averaged over the full

^a Regulatory citations are listed in brackets.

^b Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

^c "Continuous records" is defined in § 63.111 of this subpart.

^d NCS = Notification of Compliance Status described in § 63.152 of this subpart.

^e The daily average is the average of all recorded parameter values for the operating day. If all recorded values during an operating day are within the range established in the NCS or operating permit, a statement to this effect can be recorded instead of the daily average.

^f The periodic reports shall include the duration of periods when monitoring data are not collected for each excursion as defined in § 63.152(c)(2)(ii)(A) of this subpart.

^g PR = Periodic Reports described in § 63.152 of this subpart.

^h Alternatively, these devices may comply with the organic monitoring device provisions listed at the end of this table under "All Recovery Devices."

Control device	Parameters to be monitored ^a	Recordkeeping and reporting requirements for monitored parameters
Carbon adsorber ^h	temperature [§ 63.127(b)(2)]	period of the performance test—NCS. 3. Record the daily average exit temperature for each operating day. ^e 4. Report all daily average exit temperatures that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected ^f —PR.
	Total regeneration stream mass or volumetric or volumetric flow during carbon bed regeneration cycle(s) [§ 63.127(b)(3)], and	1. Record of total regeneration stream mass or volumetric flow for each carbon bed regeneration cycle. 2. Record and report the total regeneration stream mass or volumetric flow during each carbon bed regeneration cycle during the period of the performance test—NCS. 3. Report all carbon bed regeneration cycles when the total regeneration stream mass or volumetric flow is outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected ^f —PR.
	Temperature of the carbon bed after regeneration [and within 15	1. Records of the temperature of the carbon bed after each regeneration. 2. Record and report the temperature of the carbon bed after each regeneration during the period of the performance test—NCS.

^a Regulatory citations are listed in brackets.

^b Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

^c "Continuous records" is defined in § 63.111 of this subpart.

^d NCS = Notification of Compliance Status described in § 63.152 of this subpart.

^e The daily average is the average of all recorded parameter values for the operating day. If all recorded values during an operating day are within the range established in the NCS or operating permit, a statement to this effect can be recorded instead of the daily average.

^f The periodic reports shall include the duration of periods when monitoring data are not collected for each excursion as defined in § 63.152(c)(2)(ii)(A) of this subpart.

^g PR = Periodic Reports described in § 63.152 of this subpart.

^h Alternatively, these devices may comply with the organic monitoring device provisions listed at the end of this table under "All Recovery Devices."

Control device	Parameters to be monitored ^a	Recordkeeping and reporting requirements for monitored parameters
	minutes of completing any cooling cycle(s)] [§ 63.127(b)(3)]	3. Report all the carbon bed regeneration cycles during which the temperature of the carbon bed after regeneration is outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected ^f —PR.
	Outlet HAP or TOC concentration [§ 63.127(b)(4)]	For each nonregenerative adsorber and regenerative adsorber that is regenerated offsite subject to the requirements in § 63.127(b)(4), the owner or operator must record each outlet HAP or TOC concentration measured according to §§ 63.127(b)(4)(ii) and (iii).
	Adsorbent replacement [§ 63.127(b)(4)]	1. For each nonregenerative adsorber and regenerative adsorber that is regenerated offsite subject to the requirements in § 63.127(b)(4), the owner or operator must record date and time the adsorbent was last replaced.
	Breakthrough [§ 63.127(b)(4)]	For each nonregenerative adsorber and regenerative adsorber that is regenerated offsite subject to the requirements in § 63.127(b)(4), the owner or operator must: 1. Record breakthrough limit and bed life established according to § 63.127(b)(4)(i). 2. Report the date of each instance when breakthrough, as defined in § 63.101, is detected between the first and second adsorber and the adsorber is not replaced according to § 63.127(b)(4)(iii)(A)—PR.
All recovery	Concentration	1. Continuous records during loading.

^a Regulatory citations are listed in brackets.

^b Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

^c "Continuous records" is defined in § 63.111 of this subpart.

^d NCS = Notification of Compliance Status described in § 63.152 of this subpart.

^e The daily average is the average of all recorded parameter values for the operating day. If all recorded values during an operating day are within the range established in the NCS or operating permit, a statement to this effect can be recorded instead of the daily average.

^f The periodic reports shall include the duration of periods when monitoring data are not collected for each excursion as defined in § 63.152(c)(2)(ii)(A) of this subpart.

^g PR = Periodic Reports described in § 63.152 of this subpart.

^h Alternatively, these devices may comply with the organic monitoring device provisions listed at the end of this table under "All Recovery Devices."

Control device	Parameters to be monitored ^a	Recordkeeping and reporting requirements for monitored parameters
devices (as an alternative to the above)	level or reading indicated by an organic monitoring device at the outlet of the recovery device [§ 63.127(b)]	2. Record and report the concentration level or reading averaged over the full period of the performance test—NCS. 3. Record the daily average concentration level or reading for each operating day. ^d 4. Report all daily average concentration levels or readings that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected ^f —PR.
All control devices and vapor balancing systems	Presence of flow diverted to the atmosphere from the control device [§ 63.127(d)(1)] or Monthly	1. Hourly records of whether the flow indicator was operating and whether a diversion was detected at any time during each hour. 2. Record and report the duration of all periods when the vent stream is diverted through a bypass line or the monitor is not operating—PR. 3. For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), record and report the start date, start time, duration in hours, estimate of the volume of gas in standard cubic feet, the concentration of organic HAP in the gas in parts per million by volume and the resulting mass emissions of organic HAP in pounds that bypass a control device. For periods when the flow indicator is not operating, report the start date, start time, and duration in hours—PR. 1. Records that monthly inspections were performed.

^a Regulatory citations are listed in brackets.

^b Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

^c "Continuous records" is defined in § 63.111 of this subpart.

^d NCS = Notification of Compliance Status described in § 63.152 of this subpart.

^e The daily average is the average of all recorded parameter values for the operating day. If all recorded values during an operating day are within the range established in the NCS or operating permit, a statement to this effect can be recorded instead of the daily average.

^f The periodic reports shall include the duration of periods when monitoring data are not collected for each excursion as defined in § 63.152(c)(2)(ii)(A) of this subpart.

^g PR = Periodic Reports described in § 63.152 of this subpart.

^h Alternatively, these devices may comply with the organic monitoring device provisions listed at the end of this table under "All Recovery Devices."

Control device	Parameters to be monitored ^a	Recordkeeping and reporting requirements for monitored parameters
	inspections of sealed valves [§ 63.127(d)(2)]	2. Record and report all monthly inspections that show the valves are moved to the diverting position or the seal has been changed. 3. For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), record and report the start date, start time, duration in hours, estimate of the volume of gas in standard cubic feet, the concentration of organic HAP in the gas in parts per million by volume and the resulting mass emissions of organic HAP in pounds that bypass a control device. For periods when the flow indicator is not operating, report the start date, start time, and duration in hours—PR.

^a Regulatory citations are listed in brackets.

^b Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

^c "Continuous records" is defined in § 63.111 of this subpart.

^d NCS = Notification of Compliance Status described in § 63.152 of this subpart.

^e The daily average is the average of all recorded parameter values for the operating day. If all recorded values during an operating day are within the range established in the NCS or operating permit, a statement to this effect can be recorded instead of the daily average.

^f The periodic reports shall include the duration of periods when monitoring data are not collected for each excursion as defined in § 63.152(c)(2)(ii)(A) of this subpart.

^g PR = Periodic Reports described in § 63.152 of this subpart.

^h Alternatively, these devices may comply with the organic monitoring device provisions listed at the end of this table under "All Recovery Devices."

[89 FR 43216, May 16, 2024]

Table 8 to Subpart G of Part 63—Organic HAP's Subject to the Wastewater Provisions for Process Units at New Sources

Chemical name	CAS No. ^a
Allyl chloride	107051
Benzene	71432

^a CAS numbers refer to the Chemical Abstracts Service registry number assigned to specific compounds, isomers, or mixtures of compounds.

Note. The list of organic HAP's on table 8 is a subset of the list of organic HAP's on table 9 of this subpart.

Chemical name	CAS No. ^a
Butadiene (1,3-)	106990
Carbon disulfide	75150
Carbon tetrachloride	56235
Cumene	98828
Ethyl chloride (Chloroethane)	75003
Ethylbenzene	100414
Ethylene oxide	75218
Ethylidene dichloride (1,1-Dichloroethane).	75343
Hexachlorobutadiene	87683
Hexachloroethane	67721
Hexane	100543
Methyl bromide (Bromomethane)	74839
Methyl chloride (Chloromethane)	74873
Phosgene	75445
Tetrachloroethylene (Perchloroethylene)	127184
Toluene	108883
Trichloroethane (1,1,1-) (Methyl chloroform)	71556
Trichloroethylene	79016
Trimethylpentane (2,2,4-)	540841
Vinyl chloride (chloroethylene)	75014
Vinylidene chloride (1,1-Dichloroethylene).	75354
Xylene (m-)	108383
Xylene (p-)	106423

^a CAS numbers refer to the Chemical Abstracts Service registry number assigned to specific compounds, isomers, or mixtures of compounds.

Note. The list of organic HAP's on table 8 is a subset of the list of organic HAP's on table 9 of this subpart.

[59 FR 19453, Apr. 22, 1994, as amended at 89 FR 43218, May 16, 2024]

Table 9 to Subpart G of Part 63—Organic HAP's Subject to the Wastewater Provisions for Process Units at New and Existing Sources and Corresponding Fraction Removed (Fr) Values

Chemical name	CAS No. ^a	Fr
Acetaldehyde	75070	0.95
Acetonitrile	75058	0.62
Acetophenone	98862	0.72
Acrolein	107028	0.96
Acrylonitrile	107131	0.96
Allyl chloride	107051	0.99
Benzene	71432	0.99
Benzyl chloride	100447	0.99
Biphenyl	92524	0.99
Bromoform	75252	0.99
Butadiene (1,3-)	106990	0.99
Carbon disulfide	75150	0.99
Carbon tetrachloride	56235	0.99
Chlorobenzene	108907	0.99
Chloroform	67663	0.99
Chloroprene (2-Chloro-1,3-butadiene)	126998	0.99
Cumene	98828	0.99
Dichlorobenzene (p-)	106467	0.99
Dichloroethane (1,2-) (Ethylene dichloride)	107062	0.99
Dichloroethyl ether (Bis(2-chloroethyl)ether)	111444	0.87
Dichloropropene (1,3-)	542756	0.99
Diethyl sulfate	64675	0.90
Dimethyl sulfate	77781	0.53
Dimethylaniline (N,N-)	121697	0.99
Dimethylhydrazine (1,1-)	57147	0.57
Dinitrophenol (2,4-)	51285	0.99
Dinitrotoluene (2,4-)	121142	0.38
Dioxane (1,4-) (1,4-Diethyleneoxide)	123911	0.37
Epichlorohydrin(1-Chloro-2,3-epoxypropane)	106898	0.91
Ethyl acrylate	140885	0.99
Ethylbenzene	100414	0.99
Ethyl chloride (Chloroethane)	75003	0.99
Ethylene dibromide (Dibromomethane)	106934	0.99
Ethylene glycol dimethyl ether	110714	0.90

^a CAS numbers refer to the Chemical Abstracts Service registry number assigned to specific compounds, isomers, or mixtures of compounds.

Chemical name	CAS No. ^a	Fr
Ethylene glycol monobutyl ether acetate	112072	0.76
Ethylene glycol monomethyl ether acetate	110496	0.28
Ethylene oxide	75218	0.98
Ethylidene dichloride (1,1-Dichloroethane)	75343	0.99
Hexachlorobenzene	118741	0.99
Hexachlorobutadiene	87683	0.99
Hexachloroethane	67721	0.99
Hexane	110543	0.99
Isophorone	78591	0.60
Methanol	67561	0.31
Methyl bromide (Bromomethane)	74839	0.99
Methyl chloride (Chloromethane)	74873	0.99
Methyl isobutyl ketone (Hexone)	108101	0.99
Methyl methacrylate	80626	0.98
Methyl tert-butyl ether	1634044	0.99
Methylene chloride (Dichloromethane)	75092	0.99
Naphthalene	91203	0.99
Nitrobenzene	98953	0.80
Nitropropane (2-)	79469	0.98
Phosgene	75445	0.99
Propionaldehyde	123386	0.99
Propylene dichloride (1,2-Dichloropropane)	78875	0.99
Propylene oxide	75569	0.99
Styrene	100425	0.99
Tetrachloroethane (1,1,2,2-)	79345	0.99
Tetrachloroethylene (Perchloroethylene)	127184	0.99
Toluene	108883	0.99
Toluidine (o-)	95534	0.44
Trichlorobenzene (1,2,4-)	120821	0.99
Trichloroethane (1,1,1-) (Methyl chloroform)	71556	0.99
Trichloroethane (1,1,2-) (Vinyl trichloride)	79005	0.99
Trichloroethylene	79016	0.99
Trichlorophenol (2,4,5-)	95954	0.96
Triethylamine	121448	0.99
Trimethylpentane (2,2,4-)	540841	0.99
Vinyl acetate	108054	0.99
Vinyl chloride (Chloroethylene)	75014	0.99

^a CAS numbers refer to the Chemical Abstracts Service registry number assigned to specific compounds, isomers, or mixtures of compounds.

Chemical name	CAS No. ^a	Fr
Vinylidene chloride (1,1-Dichloroethylene)	75354	0.99
Xylene (m-)	108383	0.99
Xylene (o-)	95476	0.99
Xylene (p-)	106423	0.99

^a CAS numbers refer to the Chemical Abstracts Service registry number assigned to specific compounds, isomers, or mixtures of compounds.

[59 FR 19468, Apr. 22, 1994, as amended at 71 FR 76615, Dec. 21, 2006]

Table 10 to Subpart G of Part 63—Wastewater—Compliance Options for Wastewater Tanks

Capacity (m ³)	Maximum true vapor pressure (kPa)	Control requirements
<75		§ 63.133(a)(1)
"75 and <151	<13.1	§ 63.133(a)(1)
	"13.1	§ 63.133(a)(2)
"151	<5.2	§ 63.133(a)(1)
	"5.2	§ 63.133(a)(2)

Table 11 to Subpart G of Part 63—Wastewater—Inspection and Monitoring Requirements for Waste Management Units

To comply with	Inspection or monitoring requirement	Frequency of inspection or monitoring	Method
Tanks:			
63.133(b)(1)	Inspect fixed roof and all openings for leaks	Initially Semi-annually	Visual.
63.133(c)	Inspect floating roof in accordance with §§ 63.120 (a)(2) and (a)(3)	See § 63.120 (a)(2) and (a)(3)	Visual.
63.133(d)	Measure floating roof seal gaps in accordance with §§ 63.120 (b)(2)(i)		See § 63.120 (b)(2)(i) through

^a As specified in § 63.136(a), the owner or operator shall comply with either the requirements of § 63.136 (b) and (c) or § 63.136 (e) and (f).

^b Within 60 days of installation as specified in § 63.137(c).

To comply with	Inspection or monitoring requirement	Frequency of inspection or monitoring	Method
	through (b)(4) –Primary seal gaps	Once every 5 years Initially Annually	(b)(4).
63.133(f) 63.133(g)	–Secondary seal gaps Inspect wastewater tank for control equipment failures and improper work practices	Initially Semi-annually	Visual.
Surface impoundments:			
63.134(b)(1)	Inspect cover and all openings for leaks	Initially Semi-annually	Visual.
63.134(c)	Inspect surface impoundment for control equipment failures and improper work practices	Initially Semi-annually	Visual.
Containers:			
63.135(b)(1), 63.135(b)(2) (ii)	Inspect cover and all openings for leaks	Initially Semi-annually	Visual.
63.135(d)(1)	Inspect enclosure and all openings for leaks	Initially Semi-annually	Visual.
63.135(e)	Inspect container for control equipment failures and improper work practices	Initially Semi-annually	Visual.
Individual Drain Systems ^a :			
63.136(b)(1)	Inspect cover and all openings to ensure there are no gaps, cracks, or holes	Initially Semi-annually	Visual.
63.136(c)	Inspect individual drain system for control equipment failures and improper work practices	Initially Semi-annually	Visual.
63.136(e)(1)	Verify that sufficient water is present to properly maintain integrity of water seals	Initially Semi-annually	Visual.
63.136(e)(2), 63.136(f)(1)	Inspect all drains using tightly-fitted caps or plugs to ensure caps and plugs are in place and properly installed	Initially Semi-annually	Visual.
63.136(f)(2)	Inspect all junction boxes to ensure covers are in place and have no visible gaps,	Initially Semi-annually	Visual or smoke test or other

^a As specified in § 63.136(a), the owner or operator shall comply with either the requirements of § 63.136 (b) and (c) or § 63.136 (e) and (f).

^b Within 60 days of installation as specified in § 63.137(c).

To comply with	Inspection or monitoring requirement	Frequency of inspection or monitoring	Method
63.136(f)(3)	cracks, or holes Inspect unburied portion of all sewer lines for cracks and gaps	Initially Semi-annually	means as specified. Visual.
Oil-water separators: 63.137(b)(1)	Inspect fixed roof and all openings for leaks	Initially Semi-annually	Visual.
63.137(c)	Measure floating roof seal gaps in accordance with 40 CFR 60.696(d)(1) —Primary seal gaps	Initially ^b Once every 5 years	See 40 CFR 60.696(d)(1).
63.137(c)	—Secondary seal gaps	Initially ^b Annually	
63.137(d)	Inspect oil-water separator for control equipment failures and improper work practices	Initially Semi-annually	Visual.

^a As specified in § 63.136(a), the owner or operator shall comply with either the requirements of § 63.136 (b) and (c) or § 63.136 (e) and (f).

^b Within 60 days of installation as specified in § 63.137(c).

Table 12 to Subpart G of Part 63—Monitoring Requirements for Treatment Processes

To comply with	Parameters to be monitored	Frequency	Methods
1. Required mass removal of Table 8 and/or Table 9 compound(s) from wastewater treated in a properly operated biological treatment unit, § 63.138(f), and § 63.138(g)	Appropriate parameters as specified in § 63.143(c) and approved by permitting authority	Appropriate frequency as specified in § 63.143 and approved by permitting authority	Appropriate methods as specified in § 63.143 and as approved by permitting authority.
2. Steam stripper	(i) Steam flow rate; and	Continuously	Integrating steam flow monitoring device equipped with a continuous recorder.
	(ii) Wastewater feed	Continuously	Liquid flow meter installed

To comply with	Parameters to be monitored	Frequency	Methods
3. Other treatment processes or alternative monitoring parameters to those listed in item 2 of this table	mass flow rate; and	Continuously	at stripper influent and equipped with a continuous recorder.
	(iii) Wastewater feed temperature; or (iv) Column operating temperature		(A) Liquid temperature monitoring device installed at stripper influent and equipped with a continuous or recorder; or (B) Liquid temperature monitoring device installed in the column top tray liquid phase (i.e., at the downcomer) and equipped with a continuous recorder.
	Other parameters may be monitored upon approval from the Administrator with the requirements specified in § 63.151(f)		

Table 13 to Subpart G of Part 63—Wastewater—Monitoring Requirements for Control Devices

**TABLE 13 TO SUBPART G OF PART 63—WASTEWATER—MONITORING
REQUIREMENTS FOR CONTROL DEVICES**

Control device	Monitoring equipment required	Parameters to be monitored	Frequency
All control devices	1. Flow indicator installed at all bypass lines to the atmosphere and equipped with continuous recorder ^b or 2. Valves sealed closed with car-seal or lock-and-key configuration	1. Presence of flow diverted from the control device to the atmosphere or 2. Monthly inspections of sealed valves	Hourly records of whether the flow indicator was operating and whether a diversion was detected at any time during each hour. Monthly.
Thermal Incinerator	Temperature monitoring device installed in firebox or in ductwork immediately downstream of firebox ^a and equipped with a continuous recorder ^b	Firebox temperature	Continuous.
Catalytic Incinerator	Temperature monitoring device installed in gas stream immediately before and after catalyst bed and equipped with a continuous recorder ^b	1. Temperature upstream of catalyst bed or 2. Temperature difference across catalyst bed	Continuous.
Flare (if meeting the requirements of § 63.139(c)(3))	Heat sensing device installed at the pilot light and equipped with a continuous recorder ^a	Presence of a flame at the pilot light	Hourly records of whether the monitor was continuously operating and whether the pilot flame was continuously present during each hour.

^a Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

^b "Continuous recorder" is defined in § 63.111 of this subpart.

^c As an alternative to conducting this monitoring, an owner or operator may replace the carbon in the carbon adsorption system with fresh carbon at a regular predetermined time interval that is less than the carbon replacement interval that is determined by the maximum design flow rate and organic concentration in the gas stream vented to the carbon adsorption system. For each source as defined in § 63.101, on and after July 15, 2027, this footnote no longer applies.

^d A continuous organic monitoring device may be used in lieu of the requirements outlined for thermal incinerators, catalytic incinerators, boilers, process heaters, condensers, and carbon adsorbers.

Control device	Monitoring equipment required	Parameters to be monitored	Frequency
Flare (if meeting the requirements of § 63.108)	The monitoring equipment is specified in § 63.108	The parameters are specified in § 63.108	The frequency is specified in § 63.108.
Boiler or process heater <44 megawatts and vent stream is not mixed with the primary fuel	Temperature monitoring device installed in firebox ^a and equipped with continuous recorder ^b	Combustion temperature	Continuous.
Condenser	Temperature monitoring device installed at condenser exit and equipped with continuous recorder ^b	Condenser exit (product side) temperature	Continuous.
Carbon adsorber (regenerative, regenerated onsite)	Integrating regeneration stream flow monitoring device having an accuracy of ±10 percent, and	Total regeneration stream mass or volumetric flow during carbon bed regeneration cycle(s)	For each regeneration cycle, record the total regeneration stream mass or volumetric flow.
	Carbon bed temperature monitoring device	Temperature of carbon bed after regeneration [and within 15 minutes of completing any cooling cycle(s)]	For each regeneration cycle and within 15 minutes of completing any cooling cycle, record the carbon bed temperature.
Carbon adsorber (Non-regenerative or regenerative, regenerated offsite)	Organic compound concentration monitoring device ^c	Organic compound concentration of adsorber exhaust	Daily or at intervals no greater than 20 percent of the design carbon replacement interval, whichever is greater.

^a Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

^b "Continuous recorder" is defined in § 63.111 of this subpart.

^c As an alternative to conducting this monitoring, an owner or operator may replace the carbon in the carbon adsorption system with fresh carbon at a regular predetermined time interval that is less than the carbon replacement interval that is determined by the maximum design flow rate and organic concentration in the gas stream vented to the carbon adsorption system. For each source as defined in § 63.101, on and after July 15, 2027, this footnote no longer applies.

^d A continuous organic monitoring device may be used in lieu of the requirements outlined for thermal incinerators, catalytic incinerators, boilers, process heaters, condensers, and carbon adsorbers.

Control device	Monitoring equipment required	Parameters to be monitored	Frequency
Organic monitoring device ^d	The monitoring equipment is specified in § 63.139(d)(5) Organic monitoring device installed at the outlet of the control device	The parameters are specified in § 63.139(d)(5) Organic compound concentration of control device exhaust	The frequency is specified in § 63.139(d)(5). Continuous.
Alternative monitoring parameters	Other parameters may be monitored upon approval from the Administrator in accordance with the requirements in § 63.143(e)(3)		

^a Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

^b "Continuous recorder" is defined in § 63.111 of this subpart.

^c As an alternative to conducting this monitoring, an owner or operator may replace the carbon in the carbon adsorption system with fresh carbon at a regular predetermined time interval that is less than the carbon replacement interval that is determined by the maximum design flow rate and organic concentration in the gas stream vented to the carbon adsorption system. For each source as defined in § 63.101, on and after July 15, 2027, this footnote no longer applies.

^d A continuous organic monitoring device may be used in lieu of the requirements outlined for thermal incinerators, catalytic incinerators, boilers, process heaters, condensers, and carbon adsorbers.

[89 FR 43218, May 16, 2024]

Tables 14-14b to Subpart G of Part 63 [Reserved]

Table 15 to Subpart G of Part 63—Wastewater—Information on Table 8 and/or Table 9 Compounds To Be Submitted With Notification of Compliance Status for Process Units at New and/or Existing Sources^{a b}

Process unit identification code ^c	Stream identification code	Concentration of table 8 and/or table 9 compound(s) (ppmw) ^{d e}	Flow rate (lpm) ^{e f}	Group 1 or Group 2 ^g	Compliance approach ^h	Treatment process(es) identification ⁱ	Waste management unit(s) identification	Intended control device

^a The information specified in this table must be submitted; however, it may be submitted in any format. This table presents an example format.

^b Other requirements for the NCS are specified in § 63.152(b) of this subpart.

^c Also include a description of the process unit (e.g., benzene process unit).

^d Except when § 63.132(e) is used, annual average concentration as specified in § 63.132 (c) or (d) and § 63.144.

^e When § 63.132(e) is used, indicate the wastewater stream is a designated Group 1 wastewater stream.

^f Except when § 63.132(e) is used, annual average flow rate as specified in § 63.132 (c) or (d) and in § 63.144.

^g Indicate whether stream is Group 1 or Group 2. If Group 1, indicate whether it is Group 1 for Table 8 or Table 9 compounds or for both Table 8 and Table 9 compounds.

^h Cite § 63.138 compliance option used.

Table 16 to Subpart G of Part 63 [Reserved]

Table 17 to Subpart G of Part 63—Information for Treatment Processes To Be Submitted With Notification of Compliance Status^{a b}

Treatment process identification ^c	Description ^d	Wastewater stream(s) treated ^e	Monitoring parameters ^f

^a The information specified in this table must be submitted; however, it may be submitted in any format. This table presents an example format.

^b Other requirements for the Notification of Compliance Status are specified in § 63.152(b) of this Subpart.

^c Identification codes should correspond to those listed in Table 15.

^d Description of treatment process.

^e Stream identification code for each wastewater stream treated by each treatment unit. Identification codes should correspond to entries listed in Table 15.

^f Parameter(s) to be monitored or measured in accordance with Table 12 and § 63.143.

Table 18 to Subpart G of Part 63—Information for Waste Management Units To Be Submitted With Notification of Compliance Status^{a b}

Waste management unit identification ^c	Description ^d	Wastewater stream(s) received or managed ^e

^a The information specified in this table must be submitted; however, it may be submitted in any format. This table presents an example format.

^b Other requirements for the Notification of Compliance Status are specified in § 63.152(b) of this Subpart.

^c Identification codes should correspond to those listed in Table 15.

^d Description of waste management unit.

^e Stream identification code for each wastewater stream received or managed by each waste management unit. Identification codes should correspond to entries listed in Table 15.

Table 19 to Subpart G of Part 63—Wastewater—Information on Residuals To Be Submitted With Notification of Compliance Status^{a b}

Residual identification ^c	Residual description ^d	Wastewater stream identification ^e	Treatment process ^f	Fate ^g	Control device identification code	Control device description ^h	Control device efficiency ⁱ

^a The information specified in this table must be submitted; however, it may be submitted in any format. This table presents an example format.

^b Other requirements for the Notification of Compliance Status are specified in § 63.152(b) of this subpart.

^c Name or identification code of residual removed from Group 1 wastewater stream.

^d Description of residual (e.g., steam stripper A-13 overhead condensates).

^e Identification of stream from which residual is removed.

^f Treatment process from which residual originates.

^g Indicate whether residual is sold, returned to production process, or returned to waste management unit or treatment process; or whether HAP mass of residual is destroyed by 99 percent.

^h If the fate of the residual is such that the HAP mass is destroyed by 99 percent, give description of device used for HAP destruction.

ⁱ If the fate of the residual is such that the HAP mass is destroyed by 99 percent, provide an estimate of control device efficiency and attach substantiation in accordance with § 63.146(b)(9) of this subpart.

Table 20 to Subpart G of Part 63—Wastewater—Periodic Reporting Requirements for Control Devices Subject to § 63.139 Used To Comply With §§ 63.13 Through 63.139

TABLE 20 TO SUBPART G OF PART 63—WASTEWATER—PERIODIC REPORTING REQUIREMENTS FOR CONTROL DEVICES SUBJECT TO § 63.139 USED TO COMPLY WITH §§ 63.13 THROUGH 63.139

Control device	Reporting requirements
(1) Thermal Incinerator.	Report all daily average ^a temperatures that are outside the range established in the NCS ^b or operating permit and all operating days when insufficient monitoring data are collected. ^c
(2) Catalytic Incinerator	(i) Report all daily average ^a upstream temperatures that are outside the range established in the NCS ^b or operating permit. (ii) Report all daily average ^a temperature differences across the catalyst bed that are outside the range established in the NCS ^b or operating permit. (iii) Report all operating days when insufficient monitoring data are collected. ^c
(3) Boiler or Process Heater with a design heat input capacity less than 44 megawatts and vent stream is not mixed with the primary fuel	Report all daily average ^a firebox temperatures that are outside the range established in the NCS ^b or operating permit and all operating days when insufficient monitoring data are collected. ^c
(4a) Flare (if meeting the requirements of § 63.139(c)(3))	Report the duration of all periods when all pilot flames are absent.
(4b) Flare (if meeting the requirements of § 63.108)	The reporting requirements are specified in § 63.108(l) of subpart F of this part.
(5) Condenser	Report all daily average ^a exit temperatures that are outside the range established in the NCS ^b or operating permit and all operating days when insufficient monitoring data are collected. ^c
(6) Carbon Adsorber (Regenerative)	(i) Report all carbon bed regeneration cycles when the total regeneration stream mass or volumetric flow is outside the range established in the NCS ^b or operating permit. (ii) Report all carbon bed regeneration cycles during which the

^a The daily average is the average of all values recorded during the operating day, as specified in § 63.147(d).

^b NCS = Notification of Compliance Status described in § 63.152.

^c The periodic reports shall include the duration of periods when monitoring data are not collected for each excursion as defined in § 63.152(c)(2)(ii)(A).

Control device	Reporting requirements
	temperature of the carbon bed after regeneration is outside the range established in the NCS ^b or operating permit. (iii) Report all operating days when insufficient monitoring data are collected^c. (iv) For each regenerative adsorber that is regenerated offsite subject to the requirements in § 63.139(d)(5) report the date of each instance when breakthrough, as defined in § 63.101, is detected between the first and second adsorber and the adsorber is not replaced according to § 63.139(d)(5)(iii)(A).
(7) Carbon Adsorber (Non-Regenerative)	(i) Report all operating days when inspections not done according to the schedule developed as specified in table 13 of this subpart. (ii) Report all operating days when carbon has not been replaced at the frequency specified in table 13 of this subpart. (iii) For each nonregenerative adsorber subject to the requirements in § 63.139(d)(5), report the date of each instance when breakthrough, as defined in § 63.101, is detected between the first and second adsorber and the adsorber is not replaced according to § 63.139(d)(5)(iii)(A).
(8) All Control Devices	(i) Report the times and durations of all periods when the vent stream is diverted through a bypass line or the monitor is not operating, or (ii) Report all monthly inspections that show the valves are moved to the diverting position or the seal has been changed. (iii) For each source as defined in § 63.101, beginning no later than the compliance dates specified in § 63.100(k)(10), report the start date, start time, duration in hours, estimate of the volume of gas in standard cubic feet, the concentration of organic HAP in the gas in parts per million by volume and the resulting mass emissions of organic HAP in pounds that bypass a control device. For periods when the flow indicator is not operating, report the start date, start time, and duration in hours.
(9) Thermal Incinerator, Catalytic Incinerator, Boiler, Process Heater, Condenser, or Carbon Adsorber using a continuous organic monitoring device as specified in §	(i) Report all daily average ^a concentration levels or readings that are outside the range established in the NCS or operating permit. ^c (ii) Report all operating days when insufficient monitoring data are collected. ^c

^a The daily average is the average of all values recorded during the operating day, as specified in § 63.147(d).

^b NCS = Notification of Compliance Status described in § 63.152.

^c The periodic reports shall include the duration of periods when monitoring data are not collected for each excursion as defined in § 63.152(c)(2)(ii)(A).

Control device	Reporting requirements
63.143(e)(2)	

^a The daily average is the average of all values recorded during the operating day, as specified in § 63.147(d).

^b NCS = Notification of Compliance Status described in § 63.152.

^c The periodic reports shall include the duration of periods when monitoring data are not collected for each excursion as defined in § 63.152(c)(2)(ii)(A).

[89 FR 43219, May 16, 2024]

Table 21 to Subpart G of Part 63—Average Storage Temperature (T_s) as a Function of Tank Paint Color

Tank Color	Average Storage Temperature (T_s)
White	$T_A - a = 0$
Aluminum	$T_A = 2.5$
Gray	$T_A = 3.5$
Black	$T_A = 5.0$

^a T_A is the average annual ambient temperature in degrees Fahrenheit.

Table 22 to Subpart G of Part 63—Paint Factors for Fixed Roof Tanks

Tank color		Paint factors (F_p) Paint Condition	
Roof	Shell	Good	Poor
White	White	1.00	1.15
Aluminum (specular)	White	1.04	1.18
White	Aluminum (specular)	1.16	1.24
Aluminum (specular)	Aluminum (specular)	1.20	1.29
White	Aluminum (diffuse)	1.30	1.38
Aluminum (diffuse)	Aluminum (diffuse)	1.39	1.46
White	Gray	1.30	1.38
Light gray	Light gray	1.33	1.44
Medium gray	Medium gray	1.40	1.58

Table 23 to Subpart G of Part 63—Average Clingage Factors (c)^a

Liquid	Shell condition		
	Light rust ^b	Dense rust	Gunitite lined
Gasoline	0.0015	0.0075	0.15
Single component stocks	0.0015	0.0075	0.15
Crude oil	0.0060	0.030	0.60

^a Units for average clingage factors are barrels per 1,000 square feet.

^b If no specific information is available, these values can be assumed to represent the most common condition of tanks currently in use.

Table 24 to Subpart G of Part 63—Typical Number of Columns as a Function of Tank Diameter for Internal Floating Roof Tanks With Column Supported Fixed Roofs^a

Tank diameter range (D in feet)	Typical number of columns, (N _C)
0 <D ≤85	1
85 <D ≤100	6
100 <D ≤120	7
120 <D ≤135	8
135 <D ≤150	9
150 <D ≤170	16
170 <D ≤190	19
190 <D ≤220	22
220 <D ≤235	31
235 <D ≤270	37
270 <D ≤275	43
275 <D ≤290	49
290 <D ≤330	61
330 <D ≤360	71
360 <D ≤400	81

^a Data in this table should not supersede information on actual tanks.

Table 25 to Subpart G of Part 63—Effective Column Diameter (F_c)

Column type	F_c (feet)
9-inch by 7-inch built-up columns	1.1
8-inch-diameter pipe columns	0.7
No construction details known	1.0

Table 26 to Subpart G of Part 63—Seal Related Factors for Internal Floating Roof Vessels

Seal type	K_s	n
Liquid mounted resilient seal:		
Primary seal only	3.0	0
With rim-mounted secondary seal ^a	1.6	0
Vapor mounted resilient seal:		
Primary seal only	6.7	0
With rim-mounted secondary seal ^a	2.5	0

^a If vessel-specific information is not available about the secondary seal, assume only a primary seal is present.

Table 27 to Subpart G of Part 63—Summary of Internal Floating Deck Fitting Loss Factors (K_F) and Typical Number of Fittings (N_F)

Deck fitting type	Deck fitting loss factor (K_F) ^a	Typical number of fittings (N_F)
Access hatch		1.
Bolted cover, gasketed	1.6	
Unbolted cover, gasketed	11	
Unbolted cover, ungasketed	^b 25	
Automatic gauge float well		1.
Bolted cover, gasketed	5.1	

^a Units for K_F are pound-moles per year.

^b If no specific information is available, this value can be assumed to represent the most common/typical deck fittings currently used.

^c D = Tank diameter (feet).

^d Not used on welded contact internal floating decks.

Deck fitting type	Deck fitting loss factor (K_F) ^a	Typical number of fittings (N_F)
Unbolted cover, gasketed	15	(see Table 24).
Unbolted cover, ungasketed	^b 28	
Column well		
Builtup column-sliding cover, gasketed	33	(5 + D/10 + D ² /600) ^c .
Builtup column-sliding cover, ungasketed	^b 47	
	10	
Pipe column-flexible fabric sleeve seal	19	1.
Pipe column-sliding cover, gasketed	32	
Pipe column-sliding cover, ungasketed		
Ladder well		(5 + D/10 + D ² /600) ^c .
Sliding cover, gasketed	56	
Sliding cover, ungasketed	^b 76	
Roof leg or hanger well		1.
Adjustable	^b 7.9	
Fixed	0	
Sample pipe or well		1.
Slotted pipe-sliding cover, gasketed	44	
Slotted pipe-sliding cover, ungasketed	57	
Sample well-slit fabric seal, 10 percent open area	^b 12	(D ² /125) ^c .
Stub drain, 1-in diameter ^d	1.2	
Vacuum breaker		
Weighted mechanical actuation, gasketed	^b 0.7	1.
Weighted mechanical actuation, ungasketed	0.9	

^a Units for K_F are pound-moles per year.

^b If no specific information is available, this value can be assumed to represent the most common/typical deck fittings currently used.

^c D = Tank diameter (feet).

^d Not used on welded contact internal floating decks.

Table 28 to Subpart G of Part 63—Deck Seam Length Factors^a (S_D) for Internal Floating Roof Tanks

Deck construction	Typical deck seam length factor
Continuous sheet construction ^b :	
5-feet wide sheets	0.2 ^c
6-feet wide sheets	0.17
7-feet wide sheets	0.14
Panel construction ^d :	
5 × 7.5 feet rectangular	0.33
5 × 12 feet rectangular	0.28

^a Deck seam loss applies to bolted decks only. Units for S_D are feet per square feet.

^b $S_D = 1/W$, where W = sheet width (feet).

^c If no specific information is available, these factors can be assumed to represent the most common bolted decks currently in use.

^d $S_D = (L + W)/LW$, where W = panel width (feet), and L = panel length (feet).

Table 29 to Subpart G of Part 63—Seal Related Factors for External Floating Roof Vessels

Seal type	Welded vessels		Riveted vessels	
	K_S	N	K_S	N
Metallic shoe seal:				
Primary seal only	1.2	1.5	1.3	1.5
With shoe-mounted secondary seal	0.8	1.2	1.4	1.2
With rim-mounted secondary seal	0.2	1.0	0.2	1.6
Liquid mounted resilient seal:				
Primary seal only	1.1	1.0	^a NA	NA
With weather shield	0.8	0.9	NA	NA
With rim-mounted secondary seal	0.7	0.4	NA	NA
Vapor mounted resilient seal:				
Primary seal only	1.2	2.3	NA	NA
With weather shield	0.9	2.2	NA	NA
With rim-mounted secondary seal	0.2	2.6	NA	NA

^a NA = Not applicable.

Table 30 to Subpart G of Part 63—Roof Fitting Loss Factors, K_{Fa} , K_{Fb} , and m ,^a and Typical Number of Fittings, N_T

Fitting type and construction details	Loss factors ^b			Typical number of fittings, N_T
	K_{Fa} (lb-mole/yr)	K_{Fb} (lb-mole/[mi/hr] ^m -yr)	m (dimensionless)	
Access hatch (24-in-diameter well)				1.
Bolted cover, gasketed	0	0	^c 0	
Unbolted cover, ungasketed	2.7	7.1	1.0	
Unbolted cover, gasketed	2.9	0.41	1.0	
Unslotted guide-pole well (8-in-diameter unslotted pole, 21-in-diameter well)				1.
Ungasketed sliding cover	0	67	^c 0.98	
Gasketed sliding cover	0	3.0	1.4	
Slotted guide-pole/sample well (8-in-diameter unslotted pole, 21-in-diameter well)				(^d).
Ungasketed sliding cover, without float	0	310	1.2	
Ungasketed sliding cover, with float	0	29	2.0	
Gasketed sliding cover, without float	0	260	1.2	
Gasketed sliding cover, with float	0	8.5	1.4	
Gauge-float well (20-inch diameter)				1.
Unbolted cover, ungasketed	2.3	5.9	^c 1.0	
Unbolted cover, gasketed	2.4	0.34	1.0	
Bolted cover, gasketed	0	0	0	
Gauge-hatch/sample well (8-inch diameter)				1.
Weighted mechanical actuation, gasketed	0.95	0.14	^c 1.0	
Weighted mechanical actuation, ungasketed	0.91	2.4	1.0	

^a The roof fitting loss factors, K_{Fa} , K_{Fb} , and m , may only be used for wind speeds from 2 to 15 miles per hour.

^b Unit abbreviations are as follows: lb = pound; mi = miles; hr = hour; yr = year.

^c If no specific information is available, this value can be assumed to represent the most common or typical roof fittings currently in use.

^d A slotted guide-pole/sample well is an optional fitting and is not typically used.

^e Roof drains that drain excess rainwater into the product are not used on pontoon floating roofs. They are, however, used on double-deck floating roofs and are typically left open.

^f The most common roof leg diameter is 3 inches. The loss factors for 2¹/₂-inch diameter roof legs are provided for use if this smaller size roof is used on a particular floating roof.

^g Rim vents are used only with mechanical-shoe primary seals.

Fitting type and construction details	Loss factors ^b			Typical number of fittings, N _T
	K _{Fa} (lb-mole/yr)	K _{Fb} (lb-mole/[mi/hr] ^m -yr)	m (dimensionless)	
Vacuum breaker (10-in-diameter well)				N _{F6} (Table 31).
Weighted mechanical actuation, gasketed	1.2	0.17	^c 1.0	
Weighted mechanical actuation, ungasketed	1.2	3.0	1.0	
Roof drain (3-in-diameter)				N _{F7} (Table 31).
Open	0	7.0	^e 1.4	N _{F8} (Table 32 ^f).
90 percent closed	0.51	0.81	1.0	
Roof leg (3-in-diameter)				N _{F8} (Table 32 ^f).
Adjustable, pontoon area	1.5	0.20	^c 1.0	
Adjustable, center area	0.25	0.067	^c 1.0	
Adjustable, double-deck roofs	0.25	0.067	1.0	
Fixed	0	0	0	
Roof leg (2 ¹ / ₂ -in-diameter)				N _{F8} (Table 32 ^f).
Adjustable, pontoon area	1.7	0	0	
Adjustable, center area	0.41	0	0	
Adjustable, double-deck roofs	0.41	0	0	
Fixed	0	0	0	
Rim vent (6-in-diameter)				^g 1.
Weighted mechanical actuation, gasketed	0.71	0.10	^c 1.0	
Weighted mechanical actuation, ungasketed	0.68	1.8	1.0	

^a The roof fitting loss factors, K_{Fa}, K_{Fb}, and m, may only be used for wind speeds from 2 to 15 miles per hour.

^b Unit abbreviations are as follows: lb = pound; mi = miles; hr = hour; yr = year.

^c If no specific information is available, this value can be assumed to represent the most common or typical roof fittings currently in use.

^d A slotted guide-pole/sample well is an optional fitting and is not typically used.

^e Roof drains that drain excess rainwater into the product are not used on pontoon floating roofs. They are, however, used on double-deck floating roofs and are typically left open.

^f The most common roof leg diameter is 3 inches. The loss factors for 2¹/₂-inch diameter roof legs are provided for use if this smaller size roof is used on a particular floating roof.

^g Rim vents are used only with mechanical-shoe primary seals.

Table 31 to Subpart G of Part 63—Typical Number of Vacuum Breakers, N_{F6} and Roof Drains, N_{F7}

Tank diameter D (feet) _b	No. of vacuum breakers, N_{F6}		No. of roof drains, N_{F7} double-deck roof ^c
	Pontoon roof	Double-deck roof	
50	1	1	1
100	1	1	1
150	2	2	2
200	3	2	3
250	4	3	5
300	5	3	7
350	6	4	d
400	7	4	d

^a This table should not supersede information based on actual tank data.

^b If the actual diameter is between the diameters listed, the closest diameter listed should be used. If the actual diameter is midway between the diameters listed, the next larger diameter should be used.

^c Roof drains that drain excess rainwater into the product are not used on pontoon floating roofs. They are, however, used on double-deck floating roofs, and are typically left open.

^d For tanks more than 300 feet in diameter, actual tank data or the manufacturer's recommendations may be needed for the number of roof drains.

Table 32 to Subpart G of Part 63—Typical Number of Roof Legs, N_{F8}

Tank diameter D (feet) _b	Pontoon roof		No. of legs on double-deck roof
	No. of pontoon legs	No. of center legs	
30	4	2	6
40	4	4	7
50	6	6	8
60	9	7	10
70	13	9	13
80	15	10	16
90	16	12	20
100	17	16	25
110	18	20	29

^a This table should not supersede information based on actual tank data.

^b If the actual diameter is between the diameters listed, the closest diameter listed should be used. If the actual diameter is midway between the diameters listed, the next larger diameter should be used.

Tank diameter D (feet) ^b	Pontoon roof		No. of legs on double-deck roof
	No. of pontoon legs	No. of center legs	
120	19	24	34
130	20	28	40
140	21	33	46
150	23	38	52
160	26	42	58
170	27	49	66
180	28	56	74
190	29	62	82
200	30	69	90
210	31	77	98
220	32	83	107
230	33	92	115
240	34	101	127
250	34	109	138
260	36	118	149
270	36	128	162
280	37	138	173
290	38	148	186
300	38	156	200
310	39	168	213
320	39	179	226
330	40	190	240
340	41	202	255
350	42	213	270
360	44	226	285
370	45	238	300
380	46	252	315
390	47	266	330
400	48	281	345

^a This table should not supersede information based on actual tank data.

^b If the actual diameter is between the diameters listed, the closest diameter listed should be used. If the actual diameter is midway between the diameters listed, the next larger diameter should be used.

Table 33 to Subpart G of Part 63—Saturation Factors

Cargo carrier	Mode of operation	S factor
Tank trucks and rail tank cars	Submerged loading of a clean cargo tank	0.50
	Submerged loading: dedicated normal service	0.60
	Submerged loading: dedicated vapor balance service	1.00
	Splash loading of a clean cargo tank	1.45
	Splash loading: dedicated normal service	1.45
	Splash loading: dedicated vapor balance service	1.00

Table 34 to Subpart G of Part 63—Fraction Measured (F_m) and Fraction Emitted (F_e) For HAP Compounds in Wastewater Streams

Chemical name	CAS Number ^a	F_m	F_e
Acetaldehyde	75070	1.00	0.48
Acetonitrile	75058	0.99	0.36
Acetophenone	98862	0.31	0.14
Acrolein	107028	1.00	0.43
Acrylonitrile	107131	1.00	0.43
Allyl chloride	107051	1.00	0.89
Benzene	71432	1.00	0.80
Benzyl chloride	100447	1.00	0.47
Biphenyl	92524	0.86	0.45
Bromoform	75252	1.00	0.49
Butadiene (1,3-)	106990	1.00	0.98
Carbon disulfide	75150	1.00	0.92
Carbon tetrachloride	56235	1.00	0.94
Chlorobenzene	108907	1.00	0.73
Chloroform	67663	1.00	0.78
Chloroprene (2-Chloro-1,3-butadiene)	126998	1.00	0.68
Cumene	98828	1.00	0.88
Dichlorobenzene (p-)	106467	1.00	0.72
Dichloroethane (1,2-) (Ethylene dichloride)	107062	1.00	0.64
Dichloroethyl ether (Bis(2-Chloroethyl ether))	111444	0.76	0.21
Dichloropropene (1,3-)	542756	1.00	0.76

^a CAS numbers refer to the Chemical Abstracts Service registry number assigned to specific compounds, isomers, or mixtures of compounds.

Chemical name	CAS Number ^a	F _m	F _e
Diethyl sulfate	64675	0.0025	0.11
Dimethyl sulfate	77781	0.086	0.079
Dimethylaniline (N,N-)	121697	0.00080	0.34
Dimethylhydrazine (1,1-)	57147	0.38	0.054
Dinitrophenol (2,4-)	51285	0.0077	0.060
Dinitrotoluene (2,4-)	121142	0.085	0.18
Dioxane (1,4-) (1,4-Diethyleneoxide)	123911	0.87	0.18
Epichlorohydrin(1-Chloro-2,3-epoxypropane)	106898	0.94	0.35
Ethyl acrylate	140885	1.00	0.48
Ethylbenzene	100414	1.00	0.83
Ethyl chloride (Chloroethane)	75003	1.00	0.90
Ethylene dibromide (Dibromomethane)	106934	1.00	0.57
Ethylene glycol dimethyl ether	110714	0.86	0.32
Ethylene glycol monobutyl ether acetate	112072	0.043	0.067
Ethylene glycol monomethyl ether acetate	110496	0.093	0.048
Ethylene oxide	75218	1.00	0.50
Ethylidene dichloride (1,1-Dichloroethane)	75343	1.00	0.79
Hexachlorobenzene	118741	0.97	0.64
Hexachlorobutadiene	87683	0.88	0.86
Hexachloroethane	67721	0.50	0.85
Hexane	110543	1.00	1.00
Isophorone	78591	0.51	0.11
Methanol	67561	0.85	0.17
Methyl bromide (Bromomethane)	74839	1.00	0.85
Methyl chloride (Chloromethane)	74873	1.00	0.84
Methyl isobutyl ketone (Hexone)	108101	0.98	0.53
Methyl methacrylate	80626	1.00	0.37
Methyl tert-butyl ether	1634044	1.00	0.57
Methylene chloride (Dichloromethane)	75092	1.00	0.77
Naphthalene	91203	0.99	0.51
Nitrobenzene	98953	0.39	0.23
Nitropropane (2-)	79469	0.99	0.44
Phosgene	75445	1.00	0.87
Propionaldehyde	123386	1.00	0.41
Propylene dichloride (1,2-Dichloropropane)	78875	1.00	0.72
Propylene oxide	75569	1.00	0.60
Styrene	100425	1.00	0.80

^a CAS numbers refer to the Chemical Abstracts Service registry number assigned to specific compounds, isomers, or mixtures of compounds.

Chemical name	CAS Number ^a	F _m	F _e
Tetrachloroethane (1,1,2,2-)	79345	1.00	0.46
Tetrachloroethylene (Perchloroethylene)	127184	1.00	0.92
Toluene	108883	1.00	0.80
Toluidine (o-)	95534	0.15	0.052
Trichlorobenzene (1,2,4-)	120821	1.00	0.64
Trichloroethane (1,1,1-) (Methyl chloroform)	71556	1.00	0.91
Trichloroethane (1,1,2-) (Vinyl Trichloride)	79005	1.00	0.60
Trichloroethylene	79016	1.00	0.87
Trichlorophenol (2,4,5-)	95954	0.11	0.086
Triethylamine	121448	1.00	0.38
Trimethylpentane (2,2,4-)	540841	1.00	1.00
Vinyl acetate	108054	1.00	0.59
Vinyl chloride (Chloroethylene)	75014	1.00	0.97
Vinylidene chloride (1,1-Dichloroethylene)	75354	1.00	0.94
Xylene (m-)	108383	1.00	0.82
Xylene (o-)	95476	1.00	0.79
Xylene (p-)	106423	1.00	0.82

^a CAS numbers refer to the Chemical Abstracts Service registry number assigned to specific compounds, isomers, or mixtures of compounds.

[59 FR 19468, Apr. 22, 1994, as amended at 71 FR 76615, Dec. 21, 2006]

Table 35 to Subpart G of Part 63—Control Requirements for Items of Equipment That Meet the Criteria of § 63.149 of Subpart G

Item of equipment	Control requirement ^a
Drain or drain hub	(a) Tightly fitting solid cover (TFSC); or (b) TFSC with a vent to either a process, or to a fuel gas system, or to a control device meeting the requirements of § 63.139(c); or

^a Where a tightly fitting solid cover is required, it shall be maintained with no visible gaps or openings, except during periods of sampling, inspection, or maintenance.

^b Manhole includes sumps and other points of access to a conveyance system.

^c Applies to tanks with capacities of 38 m³ or greater.

^d A fixed roof may have openings necessary for proper venting of the tank, such as pressure/vacuum vent, j-pipe vent.

^e The liquid in the tank is agitated by injecting compressed air or gas.

Item of equipment	Control requirement ^a
Manhole ^b	(c) Water seal with submerged discharge or barrier to protect discharge from wind. (a) TFSC; or (b) TSFC with a vent to either a process, or to a fuel gas system, or to a control device meeting the requirements of § 63.139(c); or (c) If the item is vented to the atmosphere, use a TFSC with a properly operating water seal at the entrance or exit to the item to restrict ventilation in the collection system. The vent pipe shall be at least 90 cm in length and not exceeding 10.2 cm in nominal inside diameter.
Lift station	(a) TFSC; or (b) TFSC with a vent to either a process, or to a fuel gas system, or to a control device meeting the requirements of § 63.139(c); or (c) If the lift station is vented to the atmosphere, use a TFSC with a properly operating water seal at the entrance or exit to the item to restrict ventilation in the collection system. The vent pipe shall be at least 90 cm in length and not exceeding 10.2 cm in nominal inside diameter. The lift station shall be level controlled to minimize changes in the liquid level.
Trench	(a) TFSC; or (b) TFSC with a vent to either a process, or to a fuel gas system, or to a control device meeting the requirements of § 63.139(c); or (c) If the item is vented to the atmosphere, use a TFSC with a properly operating water seal at the entrance or exit to the item to restrict ventilation in the collection system. The vent pipe shall be at least 90 cm in length and not exceeding 10.2 cm in nominal inside diameter.
Pipe	Each pipe shall have no visible gaps in joints, seals, or other emission interfaces.
Oil/Water separator	(a) Equip with a fixed roof and route vapors to a process or to a fuel gas system, or equip with a closed vent system that routes vapors to a control device meeting the requirements of § 63.139(c); or (b) Equip with a floating roof that meets the equipment specifications of § 60.693 (a)(1)(i), (a)(1)(ii), (a)(2), (a)(3), and (a)(4).
Tank ^c	Maintain a fixed roof. ^d If the tank is sparged ^e or used for heating or treating by means of an exothermic reaction, a fixed roof and a system shall be maintained that routes the organic hazardous air pollutants vapors to other process equipment or a fuel gas system, or a closed vent system that routes vapors to a control device that meets the requirements of 40 CFR § 63.119 (e)(1) or (e)(2).

^a Where a tightly fitting solid cover is required, it shall be maintained with no visible gaps or openings, except during periods of sampling, inspection, or maintenance.

^b Manhole includes sumps and other points of access to a conveyance system.

^c Applies to tanks with capacities of 38 m³ or greater.

^d A fixed roof may have openings necessary for proper venting of the tank, such as pressure/vacuum vent, j-pipe vent.

^e The liquid in the tank is agitated by injecting compressed air or gas.

Table 36 to Subpart G of Part 63—Compound Lists Used for Compliance Demonstrations for Enhanced Biological Treatment Processes (See § 63.145(h))

List 1	List 2
Acetonitrile	Acetaldehyde.
Acetophenone	Acrolein.
Acrylonitrile	Allyl Chloride.
Biphenyl	Benzene.
Chlorobenzene	Benzyl Chloride,
Dichloroethyl Ether	Bromoform.
Diethyl Sulfate	Bromomethane.
Dimethyl Sulfate	Butadiene 1,3.
Dimethyl Hydrazine 1,1	Carbon Disulfide.
Dinitrophenol 2,4	Carbon Tetrachloride
Dinitrotoluene 2,4	Chloroethane (ethyl chloride).
Dioxane 1,4	Chloroform.
Ethylene Glycol Monobutyl Ether Acetate	Chloroprene.
Ethylene Glycol Monomethyl Ether Acetate	Cumene (isopropylbenzene).
Ethylene Glycol Dimethyl Ether	Dibromoethane 1,2.
Hexachlorobenzene	Dichlorobenzene 1,4.
Isophorone	Dichloroethane 1,2.
Methanol	Dichloroethane 1,1 (ethyldiene dichloride).
Methyl Methacrylate	Dichloroethene 1,1 (vinylidene chloride).
Nitrobenzene	Dichloropropane 1,2.
Toluidine	Dichloropropene 1,3.
Trichlorobenzene 1,2,4.	Dimethylaniline N,N.
Trichlorophenol 2,4,6	Epichlorohydrin.
Triethylamine	Ethyl Acrylate.
	Ethylbenzene.
	Ethylene Oxide.
	Ethylene Dibromide.
	Hexachlorobutadiene.
	Hexachloroethane.
	Hexane-n.
	Methyl Isobutyl Ketone.
	Methyl Tertiary Butyl Ether.
	Methyl Chloride.
	Methylene Chloride (dichloromethane).

List 1	List 2
	Naphthalene.
	Nitropropane 2
	Phosgene.
	Propionaldehyde.
	Propylene Oxide.
	Styrene.
	Tetrachloroethane 1,1,2,2.
	TolueneTrichloroethane 1,1,1 (methyl chloroform).
	Trichloroethane 1,1,2.
	Trichloroethylene.
	Trimethylpentane 2,2,4.
	Vinyl Chloride.
	Vinyl Acetate.
	Xylene-m.
	Xylene-o.
	Xylene-p.

[59 FR 19468, Apr. 22, 1994, as amended at 71 FR 76615, Dec. 21, 2006]

Table 37 to Subpart G of Part 63—Default Biorates for List 1 Compounds

Compound name	Biorate, K1 L/g MLVSS-hr
Acetonitrile	0.100
Acetophenone	0.538
Acrylonitrile	0.750
Biphenyl	5.643
Chlorobenzene	10.000
Dichloroethyl ether	0.246
Diethyl sulfate	0.105
Dimethyl hydrazine(1,1)	0.227
DIMethyl sulfate	0.178
Dinitrophenol 2,4	0.620
Dinitrotoluene(2,4)	0.784
Dioxane(1,4)	0.393
Ethylene glycol dimethyl ether	0.364
Ethylene glycol monomethyl ether acetate	0.159

Compound name	Biorate, K1 L/g MLVSS-hr
Ethylene glycol monobutyl ether acetate	0.496
Hexachlorobenzene	16.179
Isophorone	0.598
Methanol	0.200
Methyl methacrylate	4.300
Nitrobenzene	2.300
Toluidine (-O)	0.859
Trichlorobenzene 1,2,4	4.393
Trichlorophenol 2,4,5	4.477
Triethylamine	1.064

Table 38 to Subpart G of Part 63—Toxic Equivalency Factors

TABLE 38 TO SUBPART G OF PART 63—TOXIC EQUIVALENCY FACTORS

Dioxin and furan congener	Toxic equivalency factor
1,2,3,7,8-pentachlorodibenzo-p-dioxin	1
1,2,3,4,7,8-hexachlorodibenzo-p-dioxin	0.1
1,2,3,7,8,9-hexachlorodibenzo-p-dioxin	0.1
1,2,3,6,7,8-hexachlorodibenzo-p-dioxin	0.1
1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin	0.01
octachlorodibenzo-p-dioxin	0.0003
2,3,7,8-tetrachlorodibenzofuran	0.1
2,3,4,7,8-pentachlorodibenzofuran	0.3
1,2,3,7,8-pentachlorodibenzofuran	0.03
1,2,3,4,7,8-hexachlorodibenzofuran	0.1
1,2,3,6,7,8-hexachlorodibenzofuran	0.1
1,2,3,7,8,9-hexachlorodibenzofuran	0.1
2,3,4,6,7,8-hexachlorodibenzofuran	0.1
1,2,3,4,6,7,8-heptachlorodibenzofuran	0.01
1,2,3,4,7,8,9-heptachlorodibenzofuran	0.01
Octachlorodibenzofuran	0.0003

[89 FR 43220, May 16, 2024]

Figure 1 to Subpart G of Part 63—Definitions of Terms Used in Wastewater Equations

Main Terms

AMR = Actual mass removal of Table 8 and/or Table 9 compounds achieved by treatment process or a series of treatment processes, kg/hr.

C = Concentration of Table 8 and/or Table 9 compounds in wastewater, ppmw.

CG = Concentration of TOC (minus methane and ethane) or total organic hazardous air pollutants, in vented gas stream, dry basis, ppmv.

CG_c = Concentration of TOC or organic hazardous air pollutants corrected to 3-percent oxygen, in vented gas stream, dry basis, ppmv.

CGS = Concentration of sample compounds in vented gas stream, dry basis, ppmv.

E = Removal or destruction efficiency, percent.

F_{bio} = Site-specific fraction of Table 8 and/or Table 9 compounds biodegraded, unitless.

f^{bio} = Site-specific fraction of an individual Table 8 or Table 9 compound biodegraded, unitless.

F_m = Compound-specific fraction measured factor, unitless (listed in table 34).

Fr = Fraction removal value for Table 8 and/or Table 9 compounds, unitless (listed in Table 9).

Fr_{avg} = Flow-weighted average of the Fr values.

i = Identifier for a compound.

j = Identifier for a sample.

k = Identifier for a run.

K₂ = Constant, 41.57×10^{-9} , (ppm)⁻¹ (gram-mole per standard m³) (kg/g), where standard temperature (gram-mole per standard m³) is 20 °C.

m = Number of samples.

M = Mass, kg.

MW = Molecular weight, kg/kg-mole.

n = Number of compounds.

p = Number of runs.

%O_{2d} = Concentration of oxygen, dry basis, percent by volume.

Q = Volumetric flowrate of wastewater, m³/hr.

QG = Volumetric flow rate of vented gas stream, dry standard, m³/min.

QMG = Mass flowrate of TOC (minus methane and ethane) or organic hazardous air pollutants, in vented gas stream, kg/hr.

QMW = Mass flowrate of Table 8 and/or Table 9 compounds in wastewater, kg/hr.

ρ = Density, kg/m³.

RMR = Required mass removal achieved by treatment process or a series of treatment processes, kg/hr.

t_T = Total time of all runs, hr.

Subscripts

a = Entering.

b = Exiting.

i = Identifier for a compound.

j = Identifier for a sample.

k = Identifier for a run.

m = Number of samples.

n = Number of compounds.

p = Number of runs.

T = Total; sum of individual.

[59 FR 19468, Apr. 22, 1994, as amended at 59 FR 29201, June 6, 1994; 61 FR 63629, Dec. 12, 1995; 62 FR 2779, Jan. 17, 1997; 63 FR 67793, Dec. 9, 1998; 64 FR 20195, Apr. 26, 1999; 65 FR 78284, Dec. 14, 2000; 66 FR 6935, Jan. 22, 2001]

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Title 40 —Protection of Environment

Chapter I —Environmental Protection Agency

Subchapter C —Air Programs

Part 63 —National Emission Standards for Hazardous Air Pollutants for Source Categories

Authority: 42 U.S.C. 7401 *et seq.*

Source: 57 FR 61992, Dec. 29, 1992, unless otherwise noted.

Subpart H National Emission Standards for Hazardous Air Pollutants for Equipment

Leaks and Fenceline Monitoring for All Emission Sources

- § 63.160 Applicability and designation of source.
- § 63.161 Definitions.
- § 63.162 Standards: General.
- § 63.163 Standards: Pumps in light liquid service.
- § 63.164 Standards: Compressors.
- § 63.165 Standards: Pressure relief devices in gas/vapor service or light liquid service.
- § 63.166 Standards: Sampling connection systems.
- § 63.167 Standards: Open-ended valves or lines.
- § 63.168 Standards: Valves in gas/vapor service and in light liquid service.
- § 63.169 Standards: Pumps, valves, connectors, and agitators in heavy liquid service; instrumentation systems; and pressure relief devices in liquid service.
- § 63.170 Standards: Surge control vessels and bottoms receivers.
- § 63.171 Standards: Delay of repair.
- § 63.172 Standards: Closed-vent systems and control devices.
- § 63.173 Standards: Agitators in gas/vapor service and in light liquid service.
- § 63.174 Standards: Connectors in gas/vapor service and in light liquid service.
- § 63.175 Quality improvement program for valves.
- § 63.176 Quality improvement program for pumps.
- § 63.177 Alternative means of emission limitation: General.
- § 63.178 Alternative means of emission limitation: Batch processes.
- § 63.179 Alternative means of emission limitation: Enclosed-vented process units.
- § 63.180 Test methods and procedures.
- § 63.181 Recordkeeping requirements.
- § 63.182 Reporting requirements.
- § 63.183 Implementation and enforcement.
- § 63.184 Fenceline monitoring provisions.

Table 1 to Subpart H of Part 63

Batch Processes

Table 2 to Subpart H of Part 63

Surge Control Vessels and Bottoms Receivers at Existing
Sources

Table 3 to Subpart H of Part 63

Surge Control Vessels and Bottoms Receivers at New Sources

Table 4 to Subpart H of Part 63

Applicable 40 CFR Part 63 General Provisions

Subpart H—National Emission Standards for Hazardous Air Pollutants for Equipment Leaks and Fenceline Monitoring for All Emission Sources

Source: 59 FR 19568, Apr. 22, 1994, unless otherwise noted.

§ 63.160 Applicability and designation of source.

- (a) The provisions of this subpart apply to pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, surge control vessels, bottoms receivers, instrumentation systems, and control devices or closed vent systems required by this subpart that are intended to operate in organic hazardous air pollutant service 300 hours or more during the calendar year within a source subject to the provisions of a specific subpart in 40 CFR part 63 that references this subpart.
- (b) After the compliance date for a process unit, equipment to which this subpart applies that are also subject to the provisions of:
 - (1) Part 60 of this chapter will be required to comply only with the provisions of this subpart, except as specified in §§ 60.480a(e)(2)(i) and 60.480b(e)(2)(i) of this chapter.
 - (2) 40 CFR part 61 will be required to comply only with the provisions of this subpart.
- (c) If a process unit subject to the provisions of this subpart has equipment to which this subpart does not apply, but which is subject to a standard identified in paragraph (c)(1), (2), or (3) of this section, the owner or operator may elect to apply this subpart to all such equipment in the process unit. If the owner or operator elects this method of compliance, all VOC in such equipment shall be considered, for purposes of applicability and compliance with this subpart, as if it were organic hazardous air pollutant (HAP). Compliance with the provisions of this subpart, in the manner described in this paragraph, shall be deemed to constitute compliance with the standard identified in paragraph (c)(1), (2), or (3) of this section.
 - (1) Part 60, subpart VV, VVa, VVb, GGG, or KKK, of this chapter, except as specified in §§ 60.480a(e)(2)(i) and 60.480b(e)(2)(i) of this chapter;
 - (2) Part 61, subpart F or J of this chapter; or
 - (3) Part 264, subpart BB of this chapter or part 265, subpart BB of this chapter.

- (d) The provisions in § 63.1(a)(3) of subpart A of this part do not alter the provisions in paragraph (b) of this section.
- (e) Except as provided in any subpart that references this subpart, lines and equipment not containing process fluids are not subject to the provisions of this subpart. Utilities, and other non-process lines, such as heating and cooling systems which do not combine their materials with those in the processes they serve, are not considered to be part of a process unit.
- (f) The provisions of this subpart do not apply to research and development facilities or to bench-scale batch processes, regardless of whether the facilities or processes are located at the same plant site as a process subject to the provisions of this subpart.
- (g) **Alternative means of compliance** —For each source as defined in § 63.101, and for each source as defined in § 63.191, on and after July 15, 2027, this paragraph no longer applies.
 - (1) **Option to comply with 40 CFR part 65.** Owners or operators of CMPU that are subject to § 63.100 may choose to comply with the provisions of 40 CFR part 65 for all Group 1 and Group 2 process vents, Group 1 storage vessels, Group 1 transfer operations, and equipment that are subject to § 63.100, that are part of the CMPU. Other provisions applying to an owner or operator who chooses to comply with 40 CFR part 65 are provided in 40 CFR 65.1.
 - (2) **Part 65, subpart C or F.** For owners or operators choosing to comply with 40 CFR part 65, each surge control vessel and bottoms receiver subject to § 63.100 that meets the conditions specified in table 2 or table 3 of this subpart shall meet the requirements for storage vessels in 40 CFR part 65, subpart C; all other equipment subject to § 63.100 shall meet the requirements in 40 CFR part 65, subpart F.
 - (3) **Part 63, subpart A.** Owners or operators who choose to comply with 40 CFR part 65, subpart C or F, for equipment subject to § 63.100 must also comply with the applicable general provisions of this part 63 listed in table 4 of this subpart. All sections and paragraphs of subpart A of this part that are not mentioned in table 4 of this subpart do not apply to owners or operators of equipment subject to § 63.100 of subpart F complying with 40 CFR part 65, subpart C or F, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart C or F, must comply with 40 CFR part 65, subpart A.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48176, Sept. 20, 1994; 59 FR 53360, Oct. 24, 1994; 60 FR 18029, Apr. 10, 1995; 61 FR 31439, June 20, 1996; 64 FR 20198, Apr. 26, 1999; 65 FR 78285, Dec. 14, 2000; 89 FR 43220, May 16, 2024]

§ 63.161 Definitions.

All terms used in this subpart shall have the meaning given them in the Act and in subpart F of this part, except as provided in any subpart that references this subpart.

[89 FR 43221, May 16, 2024]

§ 63.162 Standards: General.

- (a) Compliance with this subpart will be determined by review of the records required by § 63.181 of this subpart and the reports required by § 63.182 of this subpart, review of performance test results, and by inspections.
- (b)

- (1) An owner or operator may request a determination of alternative means of emission limitation to the requirements of §§ 63.163 through 63.170, and §§ 63.172 through 63.174 of this subpart as provided in § 63.177.
- (2) If the Administrator makes a determination that a means of emission limitation is a permissible alternative to the requirements of §§ 63.163 through 63.170, and §§ 63.172 through 63.174 of this subpart, the owner or operator shall comply with the alternative.
- (c) Each piece of equipment in a process unit to which this subpart applies shall be identified such that it can be distinguished readily from equipment that is not subject to this subpart. Identification of the equipment does not require physical tagging of the equipment. For example, the equipment may be identified on a plant site plan, in log entries, or by designation of process unit boundaries by some form of weatherproof identification.
- (d) Equipment that is in vacuum service is excluded from the requirements of this subpart.
- (e) Equipment that is in organic HAP service less than 300 hours per calendar year is excluded from the requirements of §§ 63.163 through 63.174 of this subpart and § 63.178 of this subpart if it is identified as required in § 63.181(j) of this subpart.
- (f) When each leak is detected as specified in §§ 63.163 and 63.164; §§ 63.168 and 63.169; and §§ 63.172 through 63.174 of this subpart, the following requirements apply:
 - (1) Clearly identify the leaking equipment.
 - (2) The identification on a valve may be removed after it has been monitored as specified in §§ 63.168(f)(3), and 63.175(e)(7)(i)(D) of this subpart, and no leak has been detected during the follow-up monitoring. If the owner or operator elects to comply using the provisions of § 63.174(c)(1)(i) of this subpart, the identification on a connector may be removed after it is monitored as specified in § 63.174(c)(1)(i) and no leak is detected during that monitoring.
 - (3) The identification which has been placed on equipment determined to have a leak, except for a valve or for a connector that is subject to the provisions of § 63.174(c)(1)(i), may be removed after it is repaired.
- (g) Except as provided in paragraph (g)(1) of this section, all terms in this subpart that define a period of time for completion of required tasks (e.g., weekly, monthly, quarterly, annual), refer to the standard calendar periods unless specified otherwise in the section or subsection that imposes the requirement.
 - (1) If the initial compliance date does not coincide with the beginning of the standard calendar period, an owner or operator may elect to utilize a period beginning on the compliance date, or may elect to comply in accordance with the provisions of paragraphs (g)(2) or (g)(3) of this section.
 - (2) Time periods specified in this subpart for completion of required tasks may be changed by mutual agreement between the owner or operator and the Administrator, as specified in subpart A of this part. For each time period that is changed by agreement, the revised period shall remain in effect until it is changed. A new request is not necessary for each recurring period.
 - (3) Except as provided in paragraph (g)(1) or (g)(2) of this section, where the period specified for compliance is a standard calendar period, if the initial compliance date does not coincide with the beginning of the calendar period, compliance shall be required according to the schedule specified in paragraphs (g)(3)(i) or (g)(3)(ii) of this section, as appropriate.

- (i) Compliance shall be required before the end of the standard calendar period within which the compliance deadline occurs, if there remain at least 3 days for tasks that must be performed weekly, at least 2 weeks for tasks that must be performed monthly, at least 1 month for tasks that must be performed each quarter, or at least 3 months for tasks that must be performed annually; or
 - (ii) In all other cases, compliance shall be required before the end of the first full standard calendar period after the period within which the initial compliance deadline occurs.
- (4) In all instances where a provision of this subpart requires completion of a task during each of multiple successive periods, an owner or operator may perform the required task at any time during each period, provided the task is conducted at a reasonable interval after completion of the task during the previous period.
- (h) In all cases where the provisions of this subpart require an owner or operator to repair leaks by a specified time after the leak is detected, it is a violation of this subpart to fail to take action to repair the leaks within the specified time. If action is taken to repair the leaks within the specified time, failure of that action to successfully repair the leak is not a violation of this subpart. However, if the repairs are unsuccessful, a leak is detected and the owner or operator shall take further action as required by applicable provisions of this subpart.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48176, Sept. 20, 1994; 62 FR 2789, Jan. 17, 1997; 68 FR 37345, June 23, 2003]

§ 63.163 Standards: Pumps in light liquid service.

- (a) The provisions of this section apply to each pump that is in light liquid service.
- (1) The provisions are to be implemented on the dates specified in the specific subpart in 40 CFR part 63 that references this subpart in the phases specified below:
- (i) For each group of existing process units at existing sources subject to the provisions of subparts F or I of this part, the phases of the standard are:
 - (A) Phase I, beginning on the compliance date;
 - (B) Phase II, beginning no later than 1 year after the compliance date; and
 - (C) Phase III, beginning no later than 2¹/₂ years after the compliance date.
 - (ii) For new sources subject to the provisions of subparts F or I of this part, the applicable phases of the standard are:
 - (A) After initial start-up, comply with the Phase II requirements; and
 - (B) Beginning no later than 1 year after initial start-up, comply with the Phase III requirements.
 - (iii) For each source as defined in § 63.101, and for each source as defined in § 63.191, beginning no later than the compliance dates specified in § 63.100(k)(11), for each pump in ethylene oxide service, as defined in § 63.101, that is added to a CMPU, and for each pump in ethylene oxide service, that replaces a pump in ethylene oxide service, owners and operators must initially monitor for leaks within 5 days after initial startup of the equipment.
- (2) The owner or operator of a source subject to the provisions of subparts F or I of this part may elect to meet the requirements of a later phase during the time period specified for an earlier phase.

- (3) Sources subject to other subparts in 40 CFR part 63 that reference this subpart shall comply on the dates specified in the applicable subpart.

(b)

- (1) The owner or operator of a process unit subject to this subpart shall monitor each pump monthly to detect leaks by the method specified in § 63.180(b) of this subpart and shall comply with the requirements of paragraphs (a) through (d) of this section, except as provided in § 63.162(b) of this subpart and paragraphs (e) through (j) of this section.
- (2) Except as specified in paragraph (b)(2)(iv) of this section, the instrument reading, as determined by the method as specified in § 63.180(b), that defines a leak in each phase of the standard is:
 - (i) For Phase I, an instrument reading of 10,000 parts per million or greater.
 - (ii) For Phase II, an instrument reading of 5,000 parts per million or greater.
 - (iii) For Phase III, an instrument reading of:
 - (A) 5,000 parts per million or greater for pumps handling polymerizing monomers;
 - (B) 2,000 parts per million or greater for pumps in food/medical service; and
 - (C) 1,000 parts per million or greater for all other pumps.
 - (iv) For each source as defined in § 63.101, and for each source as defined in § 63.191, beginning no later than the compliance dates specified in § 63.100(k)(11), for pumps in ethylene oxide service, as defined in § 63.101, the instrument reading that defines a leak for pumps is 500 parts per million or greater.
- (3) Each pump shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal. If there are indications of liquids dripping from the pump seal, a leak is detected.

(c)

- (1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in paragraph (c)(3) of this section or § 63.171 of this subpart.
- (2) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected. First attempts at repair include, but are not limited to, the following practices where practicable:
 - (i) Tightening of packing gland nuts.
 - (ii) Ensuring that the seal flush is operating at design pressure and temperature.
- (3) Except as specified in paragraph (c)(4) of this section, for pumps in Phase III to which a 1,000 parts per million leak definition applies, repair is not required unless an instrument reading of 2,000 parts per million or greater is detected.
- (4) For each source as defined in § 63.101, and for each source as defined in § 63.191, beginning no later than the compliance dates specified in § 63.100(k)(11), for pumps in ethylene oxide service, as defined in § 63.101, paragraph (c)(3) of this section is not applicable.

(d)

- (1) The owner or operator shall decide no later than the first monitoring period whether to calculate percent leaking pumps on a process unit basis or on a source-wide basis. Once the owner or operator has decided, all subsequent percent calculations shall be made on the same basis.
- (2) If, in Phase III, calculated on a 6-month rolling average, the greater of either 10 percent of the pumps in a process unit or three pumps in a process unit leak, the owner or operator shall implement a quality improvement program for pumps that complies with the requirements of § 63.176 of this subpart.
- (3) The number of pumps at a process unit shall be the sum of all the pumps in organic HAP service, except that pumps found leaking in a continuous process unit within 1 month after start-up of the pump shall not count in the percent leaking pumps calculation for that one monitoring period only.
- (4) Percent leaking pumps shall be determined by the following equation:

$$\%P_L = ((P_L - P_S) / (P_T - P_S)) \times 100$$

where:

$\%P_L$ = Percent leaking pumps

P_L = Number of pumps found leaking as determined through monthly monitoring as required in paragraphs (b)(1) and (b)(2) of this section.

P_T = Total pumps in organic HAP service, including those meeting the criteria in paragraphs (e) and (f) of this section.

P_S = Number of pumps leaking within 1 month of start-up during the current monitoring period.

- (e) Except as specified in paragraph (e)(7) of this section, each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of paragraphs (a) through (d) of this section, provided the following requirements are met:
 - (1) Each dual mechanical seal system is:
 - (i) Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure; or
 - (ii) Equipped with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed-vent system to a control device that complies with the requirements of § 63.172 of this subpart; or
 - (iii) Equipped with a closed-loop system that purges the barrier fluid into a process stream.
 - (2) The barrier fluid is not in light liquid service.
 - (3) Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.
 - (4) Each pump is checked by visual inspection each calendar week for indications of liquids dripping from the pump seal.

- (i) If there are indications of liquids dripping from the pump seal at the time of the weekly inspection, the pump shall be monitored as specified in § 63.180(b) of this subpart to determine if there is a leak of organic HAP in the barrier fluid.
- (ii) If an instrument reading of 1,000 parts per million or greater is measured, a leak is detected.
- (5) Each sensor as described in paragraph (e)(3) of this section is observed daily or is equipped with an alarm unless the pump is located within the boundary of an unmanned plant site.
- (6)
 - (i) The owner or operator determines, based on design considerations and operating experience, criteria applicable to the presence and frequency of drips and to the sensor that indicates failure of the seal system, the barrier fluid system, or both.
 - (ii) If indications of liquids dripping from the pump seal exceed the criteria established in paragraph (e)(6)(i) of this section, or if, based on the criteria established in paragraph (e)(6)(i) of this section, the sensor indicates failure of the seal system, the barrier fluid system, or both, a leak is detected.
 - (iii) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in § 63.171 of this subpart.
 - (iv) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
- (7) For each source as defined in § 63.101, and for each source as defined in § 63.191, beginning no later than the compliance dates specified in § 63.100(k)(11), for pumps in ethylene oxide service, as defined in § 63.101, paragraph (e) of this section is not applicable.
- (f) Any pump that is designed with no externally actuated shaft penetrating the pump housing is exempt from the requirements of paragraphs (a) through (c) of this section.
- (g) Any pump that is routed to a process or fuel gas system or equipped with a closed vent system capable of capturing and transporting leakage from the pump to a control device meeting the requirements of § 63.172 is exempt from the requirements of paragraphs (a)(1)(iii), and (b) through (e) of this section.
- (h) Any pump that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement of paragraphs (b)(3) and (e)(4) of this section, and the daily requirements of paragraph (e)(5) of this section, provided that each pump is visually inspected as often as practicable and at least monthly.
- (i) If more than 90 percent of the pumps at a process unit meet the criteria in either paragraph (e) or (f) of this section, the process unit is exempt from the requirements of paragraph (d) of this section.
- (j) Any pump that is designated, as described in § 63.181(b)(7)(i), as an unsafe-to-monitor pump is exempt from the requirements of paragraphs (a)(1)(iii), and (b) through (e) of this section if:
 - (1) The owner or operator of the pump determines that the pump is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraphs (a)(1)(iii), and (b) through (d) of this section; and
 - (2) The owner or operator of the pump has a written plan that requires monitoring of the pump as frequently as practical during safe-to-monitor times, but not more frequently than the periodic monitoring schedule otherwise applicable.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48176, Sept. 20, 1994; 61 FR 31439, June 20, 1996; 62 FR 2789, Jan. 17, 1997; 64 FR 20198, Apr. 26, 1999; 89 FR 43221, May 16, 2024]

§ 63.164 Standards: Compressors.

- (a) Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of process fluid to the atmosphere, except as provided in § 63.162(b) of this subpart and paragraphs (h) and (i) of this section.
- (b) Each compressor seal system as required in paragraph (a) of this section shall be:
 - (1) Operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or
 - (2) Equipped with a barrier fluid system degassing reservoir that is routed to a process or fuel gas system or connected by a closed-vent system to a control device that complies with the requirements of § 63.172 of this subpart; or
 - (3) Equipped with a closed-loop system that purges the barrier fluid directly into a process stream.
- (c) The barrier fluid shall not be in light liquid service.
- (d) Each barrier fluid system as described in paragraphs (a) through (c) of this section shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.
- (e)
 - (1) Each sensor as required in paragraph (d) of this section shall be observed daily or shall be equipped with an alarm unless the compressor is located within the boundary of an unmanned plant site.
 - (2) The owner or operator shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.
- (f) If the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined under paragraph (e)(2) of this section, a leak is detected.
- (g)
 - (1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in § 63.171 of this subpart.
 - (2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
- (h) A compressor is exempt from the requirements of paragraphs (a) through (g) of this section if it is equipped with a system to capture and transport leakage from the compressor drive shaft seal to a process or a fuel gas system or to a closed vent system that captures and transports leakage from the compressor to a control device meeting the requirements of § 63.172 of this subpart.
- (i) Any compressor that is designated, as described in § 63.181(b)(2)(ii) of this subpart, to operate with an instrument reading of less than 500 parts per million above background, is exempt from the requirements of paragraphs (a) through (h) of this section if the compressor:
 - (1) Is demonstrated to be operating with an instrument reading of less than 500 parts per million above background, as measured by the method specified in § 63.180(c) of this subpart; and

- (2) Is tested for compliance with paragraph (i)(1) of this section initially upon designation, annually, and at other times requested by the Administrator.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48176, Sept. 20, 1994; 62 FR 2790, Jan. 17, 1997; 64 FR 20198, Apr. 26, 1999; 89 FR 43221, May 16, 2024]

§ 63.165 Standards: Pressure relief devices in gas/vapor service or light liquid service.

- (a) Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with an instrument reading of less than 500 parts per million above background except as provided in paragraph (b) of this section, as measured by the method specified in § 63.180(c). For each source as defined in § 63.101, and for each source as defined in § 63.191, beginning no later than the compliance dates specified in § 63.100(k)(10), this paragraph (a) no longer applies and instead the owner or operator must comply with paragraph (e) of this section.
- (b) Except as specified in paragraph (e) of this section, comply with paragraphs (b)(1) and (b)(2) of this section.
 - (1) After each pressure release, the pressure relief device shall be returned to a condition indicated by an instrument reading of less than 500 parts per million above background, as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in § 63.171.
 - (2) No later than 5 calendar days after the pressure release and being returned to organic HAP service, the pressure relief device shall be monitored to confirm the condition indicated by an instrument reading of less than 500 parts per million above background, as measured by the method specified in § 63.180(c).
- (c) Except as specified in paragraph (e) of this section, any pressure relief device that is routed to a process or fuel gas system or equipped with a closed-vent system capable of capturing and transporting leakage from the pressure relief device to a control device as described in § 63.172 is exempt from the requirements of paragraphs (a) and (b) of this section.
- (d) Except as specified in paragraph (e) of this section, comply with paragraphs (d)(1) and (d)(2) of this section.
 - (1) Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the requirements of paragraphs (a) and (b) of this section, provided the owner or operator complies with the requirements in paragraph (d)(2) of this section.
 - (2) After each pressure release, a rupture disk shall be installed upstream of the pressure relief device as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in § 63.171.
- (e) For each source as defined in § 63.101, and for each source as defined in § 63.191, beginning no later than the compliance dates specified in § 63.100(k)(10), except as specified in paragraph (e)(4) of this section, owners and operators must comply with the requirements specified in paragraphs (e)(1) and (2) of this section for pressure relief devices, such as relief valves or rupture disks, in organic HAP gas or vapor service instead of the pressure relief device requirements of paragraph (a) through (d) of this section. Except as specified in paragraphs (e)(4) and (5) of this section, owners and operators must also comply with the requirements specified in paragraphs (e)(3), (6), (7), and (8) of this section for all pressure relief devices in organic HAP service.

- (1) **Operating requirements.** Except during a pressure release, operate each pressure relief device in organic HAP gas or vapor service with an instrument reading of less than 500 ppm above background as measured by the method in § 63.180(c).
- (2) **Pressure release requirements.** For pressure relief devices in organic HAP gas or vapor service, owners and operators must comply with the applicable requirements paragraphs (e)(2)(i) through (iii) of this section following a pressure release.
 - (i) If the pressure relief device does not consist of or include a rupture disk, conduct instrument monitoring, as specified in § 63.180(c), no later than 5 calendar days after the pressure relief device returns to organic HAP gas or vapor service following a pressure release to verify that the pressure relief device is operating with an instrument reading of less than 500 ppm.
 - (ii) If the pressure relief device includes a rupture disk, either comply with the requirements in paragraph (e)(2)(i) of this section (and do not replace the rupture disk) or install a replacement disk as soon as practicable after a pressure release, but no later than 5 calendar days after the pressure release.
 - (iii) If the pressure relief device consists only of a rupture disk, install a replacement disk as soon as practicable after a pressure release, but no later than 5 calendar days after the pressure release. Owners and operators must not initiate startup of the equipment served by the rupture disk until the rupture disk is replaced.
- (3) **Pressure release management.** Except as specified in paragraphs (e)(4) and (5) of this section, owners and operators must comply with the requirements specified in paragraphs (e)(3)(i) through (v) of this section for all pressure relief devices in organic HAP service.
 - (i) Owners and operators must equip each affected pressure relief device with a device(s) or use a monitoring system that is capable of:
 - (A) Identifying the pressure release;
 - (B) Recording the time and duration of each pressure release; and
 - (C) Notifying operators immediately that a pressure release is occurring. The device or monitoring system must be either specific to the pressure relief device itself or must be associated with the process system or piping, sufficient to indicate a pressure release to the atmosphere. Examples of these types of devices and systems include, but are not limited to, a rupture disk indicator, magnetic sensor, motion detector on the pressure relief valve stem, flow monitor, or pressure monitor.
 - (ii) Owners and operators must apply at least three redundant prevention measures to each affected pressure relief device and document these measures. Examples of prevention measures include:
 - (A) Flow, temperature, liquid level and pressure indicators with deadman switches, monitors, or automatic actuators. Independent, non-duplicative systems within this category count as separate redundant prevention measures.
 - (B) Documented routine inspection and maintenance programs and/or operator training (maintenance programs and operator training may count as only one redundant prevention measure).
 - (C) Inherently safer designs or safety instrumentation systems.

- (D) Deluge systems.
- (E) Staged relief system where the initial pressure relief device (with lower set release pressure) discharges to a flare or other closed vent system and control device.
- (iii) If any affected pressure relief device releases to atmosphere as a result of a pressure release event, owners and operators must perform root cause analysis and corrective action analysis according to the requirement in paragraph (e)(6) of this section and implement corrective actions according to the requirements in paragraph (e)(7) of this section. Owners and operators must also calculate the quantity of organic HAP released during each pressure release event and report this quantity as required in § 63.182(d)(2)(xviii). Calculations may be based on data from the pressure relief device monitoring alone or in combination with process parameter monitoring data and process knowledge.
- (iv) Owners and operators must determine the total number of release events that occurred during the calendar year for each affected pressure relief device separately.
- (v) Except for pressure relief devices described in paragraphs (e)(4) and (5) of this section, the following release events from an affected pressure relief device are a violation of the pressure release management work practice standards.
 - (A) Except as specified in paragraph (e)(3)(v)(D) of this section, any release event for which the root cause of the event was determined to be operator error or poor maintenance.
 - (B) Except as specified in paragraph (e)(3)(v)(D) of this section, a second release event from a single pressure relief device in a 3 calendar year period for the same root cause for the same equipment.
 - (C) Except as specified in paragraph (e)(3)(v)(D) of this section, a third release event from a single pressure relief device in a 3 calendar year period for any reason.
 - (D) Paragraphs (e)(3)(v)(A) through (e)(3)(v)(C) of this section do not apply to pressure relief devices in ethylene oxide service, as defined in § 63.101; instead, any release event from an affected pressure relief device in ethylene oxide service is a violation of the pressure release management work practice standards.
- (4) ***Pressure relief devices routed to a control device, process, fuel gas system, or drain system.***
 - (i) If all releases and potential leaks from a pressure relief device are routed through a closed vent system to a control device, back into the process, to the fuel gas system, or to a drain system, then owners and operators are not required to comply with paragraph (e)(1), (2), or (3) of this section.
 - (ii) Both the closed vent system and control device (if applicable) referenced in paragraph (e)(4)(i) of this section must meet the applicable requirements specified in § 63.172.
 - (iii) The drain system (if applicable) referenced in paragraph (e)(4)(i) of this section must meet the applicable requirements specified in § 63.136(e).
- (5) ***Pressure relief devices exempted from pressure release management requirements.*** The following types of pressure relief devices are not subject to the pressure release management requirements in paragraph (e)(3) of this section.
 - (i) Pressure relief devices in heavy liquid service, as defined in § 63.161.

- (ii) Thermal expansion relief valves.
 - (iii) Pressure relief devices on mobile equipment.
 - (iv) Pilot-operated pressure relief devices where the primary release valve is routed through a closed vent system to a control device or back into the process, to the fuel gas system, or to a drain system.
 - (v) Balanced bellows pressure relief devices where the primary release valve is routed through a closed vent system to a control device or back into the process, to the fuel gas system, or to a drain system.
- (6) **Root cause analysis and corrective action analysis.** A root cause analysis and corrective action analysis must be completed as soon as possible, but no later than 45 days after a release event. Special circumstances affecting the number of root cause analyses and/or corrective action analyses are provided in paragraphs (e)(6)(i) through (iii) of this section.
- (i) Owners and operators may conduct a single root cause analysis and corrective action analysis for a single emergency event that causes two or more pressure relief devices installed on the same equipment to release.
 - (ii) [Reserved]
 - (iii) Except as provided in paragraph (e)(6)(i) of this section, if more than one pressure relief device has a release during the same time period, an initial root cause analysis must be conducted separately for each pressure relief device that had a release. If the initial root cause analysis indicates that the release events have the same root cause(s), the initially separate root cause analyses may be recorded as a single root cause analysis and a single corrective action analysis may be conducted.
- (7) **Corrective action implementation.** Owners and operators must conduct a root cause analysis and corrective action analysis as specified in paragraphs (e)(3)(iii) and (e)(6) of this section, and owners and operators must implement the corrective action(s) identified in the corrective action analysis in accordance with the applicable requirements in paragraphs (e)(7)(i) through (iii) of this section.
- (i) All corrective action(s) must be implemented within 45 days of the event for which the root cause and corrective action analyses were required or as soon thereafter as practicable. If the owner or operator concludes that no corrective action should be implemented, the owner or operator must record and explain the basis for that conclusion no later than 45 days following the event.
 - (ii) For corrective actions that cannot be fully implemented within 45 days following the event for which the root cause and corrective action analyses were required, owners and operators must develop an implementation schedule to complete the corrective action(s) as soon as practicable.
 - (iii) No later than 45 days following the event for which a root cause and corrective action analyses were required, owners and operators must record the corrective action(s) completed to date, and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates.

- (8) **Flowing pilot-operated pressure relief devices.** For affected sources that commenced construction or reconstruction on or before April 25, 2023, owners and operators are prohibited from installing a flowing pilot-operated pressure relief device or replacing any pressure relief device with a flowing pilot-operated pressure relief device after July 15, 2027. For affected sources that commenced construction or reconstruction after April 25, 2023, owners and operators are prohibited from installing and operating flowing pilot-operated pressure relief devices. For purpose of compliance with this paragraph, a flowing pilot-operated pressure relief device means the type of pilot-operated pressure relief device where the pilot discharge vent continuously releases emissions to the atmosphere when the pressure relief device is actuated.

[89 FR 43221, May 16, 2024]

§ 63.166 Standards: Sampling connection systems.

- (a) Each sampling connection system shall be equipped with a closed-purge, closed-loop, or closed-vent system, except as provided in § 63.162(b) of this subpart. Gases displaced during filling of the sample container are not required to be collected or captured.
- (b) Each closed-purge, closed-loop, or closed-vent system as required in paragraph (a) of this section shall:
- (1) Return the purged process fluid directly to the process line; or
 - (2) Collect and recycle the purged process fluid to a process; or
 - (3) Be designed and operated to capture and transport the purged process fluid to a control device that complies with the requirements of § 63.172 of this subpart; or
 - (4) Collect, store, and transport the purged process fluid to a system or facility identified in paragraph (b)(4)(i), (ii), or (iii) of this section.
 - (i) A waste management unit as defined in § 63.111 of subpart G of this part, if the waste management unit is subject to, and operated in compliance with the provisions of subpart G of this part applicable to group 1 wastewater streams. If the purged process fluid does not contain any organic HAP listed in Table 9 of subpart G of part 63, the waste management unit need not be subject to, and operated in compliance with the requirements of 40 CFR part 63, subpart G applicable to group 1 wastewater streams provided the facility has an NPDES permit or sends the wastewater to an NPDES permitted facility.
 - (ii) A treatment, storage, or disposal facility subject to regulation under 40 CFR part 262, 264, 265, or 266; or
 - (iii) A facility permitted, licensed, or registered by a State to manage municipal or industrial solid waste, if the process fluids are not hazardous waste as defined in 40 CFR part 261.
- (c) **In-situ** sampling systems and sampling systems without purges are exempt from the requirements of paragraphs (a) and (b) of this section.

[59 FR 19568, Apr. 22, 1994, as amended at 61 FR 31439, June 20, 1996]

§ 63.167 Standards: Open-ended valves or lines.

- (a)

- (1) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in § 63.162(b) of this subpart and paragraphs (d) and (e) of this section.
- (2) The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line, or during maintenance or repair.
- (b) Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.
- (c) When a double block and bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with paragraph (a) of this section at all other times.
- (d) Open-ended valves or lines in an emergency shutdown system which are designed to open automatically in the event of a process upset are exempt from the requirements of paragraphs (a), (b) and (c) of this section.
- (e) Open-ended valves or lines containing materials which would autocatalytically polymerize or, would present an explosion, serious overpressure, or other safety hazard if capped or equipped with a double block and bleed system as specified in paragraphs (a) through (c) of this section are exempt from the requirements of paragraph (a) through (c) of this section.

[59 FR 19568, Apr. 22, 1994, as amended at 61 FR 31440, June 20, 1996]

§ 63.168 Standards: Valves in gas/vapor service and in light liquid service.

- (a) The provisions of this section apply to valves that are either in gas service or in light liquid service.
 - (1) The provisions are to be implemented on the dates set forth in the specific subpart in 40 CFR part 63 that references this subpart as specified in paragraph (a)(1)(i), (a)(1)(ii), or (a)(1)(iii) of this section.
 - (i) For each group of existing process units at existing sources subject to the provisions of subpart F or I of this part, the phases of the standard are:
 - (A) Phase I, beginning on the compliance date;
 - (B) Phase II, beginning no later than 1 year after the compliance date; and
 - (C) Phase III, beginning no later than 2¹/₂ years after the compliance date.
 - (ii) For new sources subject to the provisions of subpart F or I of this part, the applicable phases of the standard are:
 - (A) After initial start-up, comply with the Phase II requirements; and
 - (B) Beginning no later than 1 year after initial start-up, comply with the Phase III requirements.
 - (iii) Sources subject to other subparts in 40 CFR part 63 that reference this subpart shall comply on the dates specified in the applicable subpart.
 - (2) The owner or operator of a source subject to this subpart may elect to meet the requirements of a later phase during the time period specified for an earlier phase.
 - (3) The use of monitoring data generated before April 22, 1994 to qualify for less frequent monitoring is governed by the provisions of § 63.180(b)(6) of this subpart.

- (b) The owner or operator of a source subject to this subpart shall monitor all valves, except as provided in § 63.162(b) of this subpart and paragraphs (h) and (i) of this section, at the intervals specified in paragraphs (c) and (d) of this section and shall comply with all other provisions of this section, except as provided in § 63.171, § 63.177, § 63.178, and § 63.179 of this subpart.
- (1) The valves shall be monitored to detect leaks by the method specified in § 63.180(b) of this subpart.
- (2) Except as specified in paragraph (b)(2)(iv) of this section, the instrument reading that defines a leak in each phase of the standard is:
- (i) For Phase I, an instrument reading of 10,000 parts per million or greater.
- (ii) For Phase II, an instrument reading of 500 parts per million or greater.
- (iii) For Phase III, an instrument reading of 500 parts per million or greater.
- (iv) For each source as defined in § 63.101, and for each source as defined in § 63.191, beginning no later than the compliance dates specified in § 63.100(k)(11), for valves in ethylene oxide service, as defined in § 63.101, that are either in gas service or in light liquid service the instrument reading that defines a leak is 100 parts per million or greater.
- (c) In Phases I and II, each valve shall be monitored quarterly.
- (d) Except as specified in paragraph (d)(5) of this section, in Phase III, the owner or
- (1) At process units with 2 percent or greater leaking valves, calculated according to paragraph (e) of this section, the owner or operator shall either:
- (i) Monitor each valve once per month; or
- (ii) Within the first year after the onset of Phase III, implement a quality improvement program for valves that complies with the requirements of § 63.175 (d) or (e) of this subpart and monitor quarterly.
- (2) At process units with less than 2 percent leaking valves, the owner or operator shall monitor each valve once each quarter, except as provided in paragraphs (d)(3) and (d)(4) of this section.
- (3) At process units with less than 1 percent leaking valves, the owner or operator may elect to monitor each valve once every 2 quarters.
- (4) At process units with less than 0.5 percent leaking valves, the owner or operator may elect to monitor each valve once every 4 quarters.
- (5) For each source as defined in § 63.101, and for each source as defined in § 63.191, beginning no later than the compliance dates specified in § 63.100(k)(11), for valves in ethylene oxide service, as defined in § 63.101, that are either in gas service or in light liquid service the monitoring period is once per month.

(e)

- (1) Percent leaking valves at a process unit shall be determined by the following equation:

$$\%V_L = (V_L / (V_T + V_C)) \times 100$$

where:

$\%V_L$ = Percent leaking valves as determined through periodic monitoring required in paragraphs (b) through (d) of this section.

V_L = Number of valves found leaking excluding nonrepairables as provided in paragraph (e)(3)(i) of this section.

V_T = Total valves monitored, in a monitoring period excluding valves monitored as required by (f)(3) of this section.

V_C = Optional credit for removed valves = $0.67 \times$ net number (i.e., total removed–total added) of valves in organic HAP service removed from process unit after the date set forth in § 63.100(k) of subpart F for existing process units, and after the date of initial start-up for new sources. If credits are not taken, then $V_C = 0$.

(2) For use in determining monitoring frequency, as specified in paragraph (d) of this section, the percent leaking valves shall be calculated as a rolling average of two consecutive monitoring periods for monthly, quarterly, or semiannual monitoring programs; and as an average of any three out of four consecutive monitoring periods for annual monitoring programs.

(3)

(i) Nonrepairable valves shall be included in the calculation of percent leaking valves the first time the valve is identified as leaking and nonrepairable and as required to comply with paragraph (e)(3)(ii) of this section. Otherwise, a number of nonrepairable valves (identified and included in the percent leaking calculation in a previous period) up to a maximum of 1 percent of the total number of valves in organic HAP service at a process unit may be excluded from calculation of percent leaking valves for subsequent monitoring periods.

(ii) If the number of nonrepairable valves exceeds 1 percent of the total number of valves in organic HAP service at a process unit, the number of nonrepairable valves exceeding 1 percent of the total number of valves in organic HAP service shall be included in the calculation of percent leaking valves.

(f)

(1) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in § 63.171 of this subpart.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(3) When a leak has been repaired, the valve shall be monitored at least once within the first 3 months after its repair.

(i) The monitoring shall be conducted as specified in § 63.180 (b) and (c), as appropriate, to determine whether the valve has resumed leaking.

(ii) Periodic monitoring required by paragraphs (b) through (d) of this section may be used to satisfy the requirements of this paragraph (f)(3), if the timing of the monitoring period coincides with the time specified in this paragraph (f)(3). Alternatively, other monitoring may be performed to satisfy the requirements of this paragraph (f)(3), regardless of whether the timing of the monitoring period for periodic monitoring coincides with the time specified in this paragraph (f)(3).

- (iii) If a leak is detected by monitoring that is conducted pursuant to paragraph (f)(3) of this section, the owner or operator shall follow the provisions of paragraphs (f)(3)(iii)(A) and (f)(3)(iii)(B) of this section, to determine whether that valve must be counted as a leaking valve for purposes of § 63.168(e) of this subpart.
 - (A) If the owner or operator elected to use periodic monitoring required by paragraphs (b) through (d) of this section to satisfy the requirements of paragraph (f)(3) of this section, then the valve shall be counted as a leaking valve.
 - (B) If the owner or operator elected to use other monitoring, prior to the periodic monitoring required by paragraphs (b) through (d) of this section, to satisfy the requirements of paragraph (f)(3) of this section, then the valve shall be counted as a leaking valve unless it is repaired and shown by periodic monitoring not to be leaking.
- (g) First attempts at repair include, but are not limited to, the following practices where practicable:
 - (1) Tightening of bonnet bolts,
 - (2) Replacement of bonnet bolts,
 - (3) Tightening of packing gland nuts, and
 - (4) Injection of lubricant into lubricated packing.
- (h) Any valve that is designated, as described in § 63.181(b)(7)(i) of this subpart, as an unsafe-to-monitor valve is exempt from the requirements of paragraphs (b) through (f) of this section if:
 - (1) The owner or operator of the valve determines that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraphs (b) through (d) of this section; and
 - (2) The owner or operator of the valve has a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times, but not more frequently than the periodic monitoring schedule otherwise applicable.
- (i) Any valve that is designated, as described in § 63.181(b)(7)(ii) of this subpart, as a difficult-to-monitor valve is exempt from the requirements of paragraphs (b) through (d) of this section if:
 - (1) The owner or operator of the valve determines that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface or it is not accessible at anytime in a safe manner;
 - (2) The process unit within which the valve is located is an existing source or the owner or operator designates less than 3 percent of the total number of valves in a new source as difficult-to-monitor; and
 - (3) The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year.
- (j) Any equipment located at a plant site with fewer than 250 valves in organic HAP service is exempt from the requirements for monthly monitoring and a quality improvement program specified in paragraph (d)(1) of this section. Instead, the owner or operator shall monitor each valve in organic HAP service for leaks once each quarter, or comply with paragraph (d)(3) or (d)(4) of this section except as provided in paragraphs (h) and (i) of this section.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48176, Sept. 20, 1994; 61 FR 31440, June 20, 1996; 62 FR 2790, Jan. 17, 1997; 89 FR 43223, May 16, 2024]

§ 63.169 Standards: Pumps, valves, connectors, and agitators in heavy liquid service; instrumentation systems; and pressure relief devices in liquid service.

- (a) Pumps, valves, connectors, and agitators in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and instrumentation systems shall be monitored within 5 calendar days by the method specified in § 63.180(b) of this subpart if evidence of a potential leak to the atmosphere is found by visual, audible, olfactory, or any other detection method. If such a potential leak is repaired as required in paragraphs (c) and (d) of this section, it is not necessary to monitor the system for leaks by the method specified in § 63.180(b) of this subpart.
- (b) If an instrument reading of 10,000 parts per million or greater for agitators, 5,000 parts per million or greater for pumps handling polymerizing monomers, 2,000 parts per million or greater for all other pumps (including pumps in food/medical service), or 500 parts per million or greater for valves, connectors, instrumentation systems, and pressure relief devices is measured, a leak is detected.
- (c)
 - (1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in § 63.171 of this subpart.
 - (2) The first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
 - (3) For equipment identified in paragraph (a) of this section that is not monitored by the method specified in § 63.180(b), repaired shall mean that the visual, audible, olfactory, or other indications of a leak to the atmosphere have been eliminated; that no bubbles are observed at potential leak sites during a leak check using soap solution; or that the system will hold a test pressure.
- (d) First attempts at repair include, but are not limited to, the practices described under §§ 63.163(c)(2) and 63.168(g) of this subpart, for pumps and valves, respectively.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48177, Sept. 20, 1994; 60 FR 18029, Apr. 10, 1995; 62 FR 2790, Jan. 17, 1997; 65 FR 78285, Dec. 14, 2000]

§ 63.170 Standards: Surge control vessels and bottoms receivers.

- (a) Except as specified in paragraph (b) of this section, each surge control vessel or bottoms receiver that is not routed back to the process and that meets the conditions specified in table 2 or table 3 of this subpart shall be equipped with a closed-vent system that routes the organic vapors vented from the surge control vessel or bottoms receiver back to the process or to a control device that complies with the requirements in § 63.172, except as provided in § 63.162(b), or comply with the requirements of § 63.119(b) or (c).
- (b) For each source as defined in § 63.101, and for each source as defined in § 63.191, beginning no later than the compliance dates specified in § 63.100(k)(10), paragraph (a) of this section no longer applies. Instead, each surge control vessel and bottoms receiver that is not routed back to the process and emits greater than or equal to 1.0 lb/hr of total organic HAP must be equipped with a closed-vent system that routes the organic vapors vented from the surge control vessel or bottoms receiver back to the process or to a control device that complies with the requirements in § 63.172, except as provided in § 63.162(b), or comply with the requirements of § 63.113(a)(1) or (a)(2).

[89 FR 43224, May 16, 2024]

§ 63.171 Standards: Delay of repair.

- (a) Except as specified in paragraph (f) of this section, delay of repair of equipment for which leaks have been detected is allowed if repair within 15 days is technically infeasible without a process unit shutdown. Repair of this equipment shall occur by the end of the next process unit shutdown.
- (b) Delay of repair of equipment for which leaks have been detected is allowed for equipment that is isolated from the process and that does not remain in organic HAP service.
- (c) Except as specified in paragraph (f) of this section, delay of repair for valves, connectors, and agitators is also allowed if:
 - (1) The owner or operator determines that emissions of purged material resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair, and
 - (2) When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with § 63.172 of this subpart.
- (d) Except as specified in paragraph (f) of this section, delay of repair for pumps is also allowed if:
 - (1) Repair requires replacing the existing seal design with a new system that the owner or operator has determined under the provisions of § 63.176(d) of this subpart will provide better performance or:
 - (i) A dual mechanical seal system that meets the requirements of § 63.163(e) of this subpart,
 - (ii) A pump that meets the requirements of § 63.163(f) of this subpart, or
 - (iii) A closed-vent system and control device that meets the requirements of § 63.163(g) of this subpart; and
 - (2) Repair is completed as soon as practicable, but not later than 6 months after the leak was detected.
- (e) Except as specified in paragraph (f) of this section, delay of repair beyond a process unit shutdown will be allowed for a valve if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the second process unit shutdown will not be allowed unless the third process unit shutdown occurs sooner than 6 months after the first process unit shutdown.
- (f) For each source as defined in § 63.101, and for each source as defined in § 63.191, beginning no later than the compliance dates specified in § 63.100(k)(11), delay of repair is not allowed for light liquid pumps in ethylene oxide service, gas/vapor and light liquid valves in ethylene oxide service, and connectors in ethylene oxide service.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48177, Sept. 20, 1994; 65 FR 78285, Dec. 14, 2000; 89 FR 43224, May 16, 2024]

§ 63.172 Standards: Closed-vent systems and control devices.

- (a) Owners or operators of closed-vent systems and control devices used to comply with provisions of this subpart shall comply with the provisions of this section, except as provided in § 63.162(b) of this subpart.

- (b) Recovery or recapture devices (e.g., condensers and absorbers) shall be designed and operated to recover the organic hazardous air pollutant emissions or volatile organic compounds emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume, whichever is less stringent. The 20 parts per million by volume performance standard is not applicable to the provisions of § 63.179.
- (c) Enclosed combustion devices shall be designed and operated to reduce the organic hazardous air pollutant emissions or volatile organic compounds emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent, or to provide a minimum residence time of 0.50 seconds at a minimum temperature of 760 °C.
- (d) Except as specified in paragraph (a) of § 63.108, flares used to comply with this subpart shall comply with the requirements of § 63.11(b).
- (e) Owners or operators of control devices that are used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their design.

Note: The intent of this provision is to ensure proper operation and maintenance of the control device.

- (f) Except as provided in paragraphs (k) and (l) of this section, each closed-vent system shall be inspected according to the procedures and schedule specified in paragraphs (f)(1) and (f)(2) of this section.
 - (1) If the closed-vent system is constructed of hard-piping, the owner or operator shall:
 - (i) Conduct an initial inspection according to the procedures in paragraph (g) of this section, and
 - (ii) Conduct annual visual inspections for visible, audible, or olfactory indications of leaks.
 - (2) If the vapor collection system or closed-vent system is constructed of duct work, the owner or operator shall:
 - (i) Conduct an initial inspection according to the procedures in paragraph (g) of this section, and
 - (ii) Conduct annual inspections according to the procedures in paragraph (g) of this section.
- (g) Each closed-vent system shall be inspected according to the procedures in § 63.180(b) of this subpart.
- (h) Leaks, as indicated by an instrument reading greater than 500 parts per million above background or by visual inspections, shall be repaired as soon as practicable, except as provided in paragraph (i) of this section.
 - (1) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.
 - (2) Repair shall be completed no later than 15 calendar days after the leak is detected, except as provided in paragraph (i) of this section.
- (i) Delay of repair of a closed-vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next process unit shutdown.

- (j) For each closed-vent system that contains bypass lines that could divert a vent stream away from the control device and to the atmosphere, the owner or operator shall comply with the provisions of either paragraphs (j)(1) or (j)(2), and (j)(4) of this section, except as provided in paragraph (j)(3) of this section.
 - (1) Install, set or adjust, maintain, and operate a flow indicator that takes a reading at least once every 15 minutes. Records shall be generated as specified in § 63.118(a)(3) of subpart G of this part. The flow indicator shall be installed at the entrance to any bypass line; or
 - (2) Secure the bypass line valve in the non-diverting position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure the valve is maintained in the non-diverting position and the vent stream is not diverted through the bypass line.
 - (3) Except as specified in paragraph (j)(4) of this section, equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and pressure relief valves needed for safety purposes are not subject to this paragraph.
 - (4) For each source as defined in § 63.101, and for each source as defined in § 63.191, beginning no later than the compliance dates specified in § 63.100(k)(10):
 - (i) The use of a bypass line at any time on a closed vent system (used to comply with the provisions of this subpart) to divert emissions to the atmosphere or to a control device not meeting the requirements specified in this subpart is an emissions standards violation.
 - (ii) Paragraph (j)(3) of this section does not apply. Instead, the exemptions specified in paragraph (j)(4)(ii)(A) and (j)(4)(ii)(B) of this section apply.
 - (A) Except for pressure relief devices subject to § 63.165(e)(4), equipment such as low leg drains and equipment subject to the requirements specified in subpart H of this part are not subject to this paragraph (j) of this section.
 - (B) Open-ended valves or lines that use a cap, blind flange, plug, or second valve and follow the requirements specified in 40 CFR 60.482-6(a)(2), (b), and (c) or follow requirements codified in another regulation that are the same as 40 CFR 60.482-6(a)(2), (b), and (c) are not subject to this paragraph (j) of this section.
- (k) Any parts of the closed-vent system that are designated, as described in paragraph 63.181(b)(7)(i), as unsafe to inspect are exempt from the inspection requirements of paragraphs (f)(1) and (f)(2) of this section if:
 - (1) The owner or operator determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with paragraph (f)(1) or (f)(2) of this section; and
 - (2) The owner or operator has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times, but not more frequently than annually.
- (l) Any parts of the closed-vent system that are designated, as described in § 63.181 (b)(7)(i) of this subpart, as difficult to inspect are exempt from the inspection requirements of paragraphs (f)(1) and (f)(2) of this section if:
 - (1) The owner or operator determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface; and

- (2) The owner or operator has a written plan that requires inspection of the equipment at least once every 5 years.
- (m) Whenever organic HAP emissions are vented to a closed-vent system or control device used to comply with the provisions of this subpart, such system or control device shall be operating.
- (n) After the compliance dates specified in § 63.100 of subpart F of this part, the owner or operator of any control device subject to this subpart that is also subject to monitoring, recordkeeping, and reporting requirements in 40 CFR part 264, subpart BB, or is subject to monitoring and recordkeeping requirements in 40 CFR part 265, subpart BB, may elect to comply either with the monitoring, recordkeeping, and reporting requirements of this subpart, or with the monitoring, recordkeeping, and reporting requirements in 40 CFR parts 264 and/or 265, as described in this paragraph, which shall constitute compliance with the monitoring, recordkeeping and reporting requirements of this subpart. The owner or operator shall identify which option has been chosen, in the next periodic report required by § 63.182(d).

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48177, Sept. 20, 1994; 61 FR 31440, June 20, 1996; 62 FR 2790, Jan. 17, 1997; 89 FR 43224, May 16, 2024]

§ 63.173 Standards: Agitators in gas/vapor service and in light liquid service.

- (a)
 - (1) Each agitator shall be monitored monthly to detect leaks by the methods specified in § 63.180(b) of this subpart, except as provided in § 63.162(b) of this subpart.
 - (2) If an instrument reading of 10,000 parts per million or greater is measured, a leak is detected.
- (b)
 - (1) Each agitator shall be checked by visual inspection each calendar week for indications of liquids dripping from the agitator.
 - (2) If there are indications of liquids dripping from the agitator, a leak is detected.
- (c)
 - (1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in § 63.171 of this subpart.
 - (2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
- (d) Each agitator equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of paragraph (a) of this section, provided the requirements specified in paragraphs (d)(1) through (d)(6) of this section are met:
 - (1) Each dual mechanical seal system is:
 - (i) Operated with the barrier fluid at a pressure that is at all times greater than the agitator stuffing box pressure; or
 - (ii) Equipped with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed-vent system to a control device that complies with the requirements of § 63.172 of this subpart; or
 - (iii) Equipped with a closed-loop system that purges the barrier fluid into a process stream.

- (2) The barrier fluid is not in light liquid organic HAP service.
- (3) Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.
- (4) Each agitator is checked by visual inspection each calendar week for indications of liquids dripping from the agitator seal.
 - (i) If there are indications of liquids dripping from the agitator seal at the time of the weekly inspection, the agitator shall be monitored as specified in § 63.180(b) of this subpart to determine the presence of organic HAP in the barrier fluid.
 - (ii) If an instrument reading of 10,000 parts per million or greater is measured, a leak is detected.
- (5) Each sensor as described in paragraph (d)(3) of this section is observed daily or is equipped with an alarm unless the agitator is located within the boundary of an unmanned plant site.
- (6)
 - (i) The owner or operator determines, based on design considerations and operating experience, criteria applicable to the presence and frequency of drips and to the sensor that indicates failure of the seal system, the barrier fluid system, or both.
 - (ii) If indications of liquids dripping from the agitator seal exceed the criteria established in paragraph (d)(6)(i) of this section, or if, based on the criteria established in paragraph (d)(6)(i) of this section, the sensor indicates failure of the seal system, the barrier fluid system, or both, a leak is detected.
 - (iii) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in § 63.171 of this subpart.
 - (iv) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
- (e) Any agitator that is designed with no externally actuated shaft penetrating the agitator housing is exempt from paragraphs (a) through (c) of this section.
- (f) Any agitator if it is equipped with a system to capture and transport leakage from the agitator to a process or a fuel gas system or to a closed vent system that captures and transports leakage from the agitator to a control device meeting the requirements of § 63.172 is exempt from the requirements of paragraphs (a) through (c) of the section.
- (g) Any agitator that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement of paragraphs (b)(1) and (d)(4) of this section, and the daily requirements of paragraph (d)(5) of this section, provided that each agitator is visually inspected as often as practical and at least monthly.
- (h) Any agitator that is difficult-to-monitor is exempt from the requirements of paragraphs (a) through (d) of this section if:
 - (1) The owner or operator determines that the agitator cannot be monitored without elevating the monitoring personnel more than two meters above a support surface or it is not accessible at anytime in a safe manner;

- (2) The process unit within which the agitator is located is an existing source or the owner or operator designates less than three percent of the total number of agitators in a new source as difficult-to-monitor; and
- (3) The owner or operator follows a written plan that requires monitoring of the agitator at least once per calendar year.
- (i) Any agitator that is obstructed by equipment or piping that prevents access to the agitator by a monitor probe is exempt from the monitoring requirements of paragraphs (a) through (d) of this section.
- (j) Any agitator that is designated, as described in § 63.181(b)(7)(i) of this subpart, as an unsafe-to-monitor agitator is exempt from the requirements of paragraphs (a) through (d) of this section if:
 - (1) The owner or operator of the agitator determines that the agitator is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraphs (a) through (d) of this section; and
 - (2) The owner or operator of the agitator has a written plan that requires monitoring of the agitator as frequently as practical during safe-to-monitor times, but not more frequently than the periodic monitoring schedule otherwise applicable.

[59 FR 19568, Apr. 22, 1994, as amended at 61 FR 31440, June 20, 1996; 62 FR 2791, Jan. 17, 1997; 64 FR 20198, Apr. 26, 1999; 89 FR 43224, May 16, 2024]

§ 63.174 Standards: Connectors in gas/vapor service and in light liquid service.

- (a) The owner or operator of a process unit subject to this subpart shall monitor all connectors in gas/vapor and light liquid service, except as provided in § 63.162(b) of this subpart, and in paragraphs (f) through (h) of this section, at the intervals specified in paragraph (b) of this section.
 - (1) The connectors shall be monitored to detect leaks by the method specified in § 63.180(b) of this subpart.
 - (2) Except as specified in paragraph (a)(3) of this section, if an instrument reading greater than or equal to 500 parts per million is measured, a leak is detected.
 - (3) For each source as defined in § 63.101, and for each source as defined in § 63.191, beginning no later than the compliance dates specified in § 63.100(k)(11), for connectors in ethylene oxide service, as defined in § 63.101, the instrument reading that defines a leak for connectors is 100 parts per million or greater.
- (b) The owner or operator shall monitor for leaks at the intervals specified in either paragraph (b)(1) or (b)(2) of this section and in paragraphs (b)(3) through (b)(5) of this section.
 - (1) For each group of existing process units within an existing source, by no later than 12 months after the compliance date, the owner or operator shall monitor all connectors, except as provided in paragraphs (f) through (h) of this section.
 - (2) For new sources, within the first 12 months after initial start-up or by no later than 12 months after the date of promulgation of a specific subpart that references this subpart, whichever is later, the owner or operator shall monitor all connectors, except as provided in paragraphs (f) through (h) of this section.

- (3) After conducting the initial survey required in paragraph (b)(1) or (b)(2) of this section, the owner or operator shall perform all subsequent monitoring of connectors at the frequencies specified in paragraphs (b)(3)(i) through (b)(3)(v) of this section, except as provided in paragraphs (b)(3)(vi) and (c)(2) of this section:
- (i) Once per year (i.e., 12-month period), if the percent leaking connectors in the process unit was 0.5 percent or greater during the last required annual or biennial monitoring period.
 - (ii) Once every 2 years, if the percent leaking connectors was less than 0.5 percent during the last required monitoring period. An owner or operator may comply with this paragraph by monitoring at least 40 percent of the connectors in the first year and the remainder of the connectors in the second year. The percent leaking connectors will be calculated for the total of all monitoring performed during the 2-year period.
 - (iii) If the owner or operator of a process unit in a biennial leak detection and repair program calculates less than 0.5 percent leaking connectors from the 2-year monitoring period, the owner or operator may monitor the connectors one time every 4 years. An owner or operator may comply with the requirements of this paragraph by monitoring at least 20 percent of the connectors each year until all connectors have been monitored within 4 years.
 - (iv) If a process unit complying with the requirements of paragraph (b) of this section using a 4-year monitoring interval program has greater than or equal to 0.5 percent but less than 1 percent leaking connectors, the owner or operator shall increase the monitoring frequency to one time every 2 years. An owner or operator may comply with the requirements of this paragraph by monitoring at least 40 percent of the connectors in the first year and the remainder of the connectors in the second year. The owner or operator may again elect to use the provisions of paragraph (b)(3)(iii) of this section when the percent leaking connectors decreases to less than 0.5 percent.
 - (v) If a process unit complying with requirements of paragraph (b)(3)(iii) of this section using a 4-year monitoring interval program has 1 percent or greater leaking connectors, the owner or operator shall increase the monitoring frequency to one time per year. The owner or operator may again elect to use the provisions of paragraph (b)(3)(iii) of this section when the percent leaking connectors decreases to less than 0.5 percent.
 - (vi) For each source as defined in § 63.101, and for each source as defined in § 63.191, beginning no later than the compliance dates specified in § 63.100(k)(11), for connectors in ethylene oxide service, as defined in § 63.101, the monitoring period is once every month and paragraph (c)(2) of this section is not applicable.
- (4) The use of monitoring data generated before April 22, 1994 to qualify for less frequent monitoring is governed by the provisions of § 63.180(b)(6).
- (5) For each source as defined in § 63.101, and for each source as defined in § 63.191, beginning no later than the compliance dates specified in § 63.100(k)(11), for each connector in ethylene oxide service, as defined in § 63.101, that is added to a CMPU, and for each connector in ethylene oxide service that replaces a connector in ethylene oxide service, owners and operators must initially monitor for leaks within 5 days after initial startup of the equipment.

(c)

(1)

- (i) Except as provided in paragraph (c)(1)(ii) of this section, each connector that has been opened or has otherwise had the seal broken shall be monitored for leaks when it is reconnected or within the first 3 months after being returned to organic hazardous air pollutants service. If the monitoring detects a leak, it shall be repaired according to the provisions of paragraph (d) of this section, unless it is determined to be nonreparable, in which case it is counted as a nonreparable connector for the purposes of paragraph (i)(2) of this section.
 - (ii) As an alternative to the requirements in paragraph (c)(1)(i) of this section, an owner or operator may choose not to monitor connectors that have been opened or otherwise had the seal broken. In this case, the owner or operator may not count nonreparable connectors for the purposes of paragraph (i)(2) of this section. The owner or operator shall calculate the percent leaking connectors for the monitoring periods described in paragraph (b) of this section, by setting the nonreparable component, C_{AN} , in the equation in paragraph (i)(2) of this section to zero for all monitoring periods.
 - (iii) An owner or operator may switch alternatives described in paragraphs (c)(1) (i) and (ii) of this section at the end of the current monitoring period he is in, provided that it is reported as required in § 63.182 of this subpart and begin the new alternative in annual monitoring. The initial monitoring in the new alternative shall be completed no later than 12 months after reporting the switch.
- (2) As an alternative to the requirements of paragraph (b)(3) of this section, each screwed connector 2 inches or less in nominal inside diameter installed in a process unit before the dates specified in paragraph (c)(2)(iii) or (c)(2)(iv) of this section may:
- (i) Comply with the requirements of § 63.169 of this subpart, and
 - (ii) Be monitored for leaks within the first 3 months after being returned to organic hazardous air pollutants service after having been opened or otherwise had the seal broken. If that monitoring detects a leak, it shall be repaired according to the provisions of paragraph (d) of this section.
 - (iii) For sources subject to subparts F and I of this part, the provisions of paragraph (c)(2) of this section apply to screwed connectors installed before December 31, 1992.
 - (iv) For sources not identified in paragraph (c)(2)(iii) of this section, the provisions of paragraph (c)(2) of this section apply to screwed connectors installed before the date of proposal of the applicable subpart of this part that references this subpart.
- (d) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in paragraph (g) of this section and in § 63.171 of this subpart. A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.
- (e) [Reserved]
- (f) Any connector that is designated, as described in § 63.181(b)(7)(i) of this subpart, as an unsafe-to-monitor connector is exempt from the requirements of paragraph (a) of this section if:
- (1) The owner or operator determines that the connector is unsafe to monitor because personnel would be exposed to an immediate danger as a result of complying with paragraphs (a) through (e) of this section; and

- (2) The owner or operator has a written plan that requires monitoring of the connector as frequently as practicable during safe to monitor periods, but not more frequently than the periodic schedule otherwise applicable.

(g) Except as specified in paragraph (g)(3) of this section, any connector that is designated, as described in § 63.181(b)(7)(iii), as an unsafe-to-repair connector is exempt from the requirements of paragraphs (a), (d), and (e) of this section if:

- (1) The owner or operator determines that repair personnel would be exposed to an immediate danger as a consequence of complying with paragraph (d) of this section; and
- (2) The connector will be repaired before the end of the next scheduled process unit shutdown.
- (3) For each source as defined in § 63.101, and for each source as defined in § 63.191, beginning no later than the compliance dates specified in § 63.100(k)(11), for connectors in ethylene oxide service, as defined in § 63.101, paragraph (g) of this section is no longer applicable.

(h)

- (1) Any connector that is inaccessible or is ceramic or ceramic-lined (e.g., porcelain, glass, or glass-lined), is exempt from the monitoring requirements of paragraphs (a) and (c) of this section and from the recordkeeping and reporting requirements of § 63.181 and § 63.182 of this subpart. An inaccessible connector is one that is:
 - (i) Buried;
 - (ii) Insulated in a manner that prevents access to the connector by a monitor probe;
 - (iii) Obstructed by equipment or piping that prevents access to the connector by a monitor probe;
 - (iv) Unable to be reached from a wheeled scissor-lift or hydraulic-type scaffold which would allow access to connectors up to 7.6 meters (25 feet) above the ground;
 - (v) Inaccessible because it would require elevating the monitoring personnel more than 2 meters above a permanent support surface or would require the erection of scaffold; or
 - (vi) Not able to be accessed at any time in a safe manner to perform monitoring. Unsafe access includes, but is not limited to, the use of a wheeled scissor-lift on unstable or uneven terrain, the use of a motorized man-lift basket in areas where an ignition potential exists, or access would require near proximity to hazards such as electrical lines, or would risk damage to equipment.
- (2) If any inaccessible or ceramic or ceramic-lined connector is observed by visual, audible, olfactory, or other means to be leaking, the leak shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in § 63.171 of this subpart and paragraph (g) of this section.
- (3) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.
- (i) For use in determining the monitoring frequency, as specified in paragraph (b) of this section, the percent leaking connectors shall be calculated as specified in paragraphs (i)(1) and (i)(2) of this section.
 - (1) For the first monitoring period, use the following equation:

$$\% C_L = C_L / (C_t + C_C) \times 100$$

where:

% C_L = Percent leaking connectors as determined through periodic monitoring required in paragraphs (a) and (b) of this section.

C_L = Number of connectors measured at 500 parts per million or greater, by the method specified in § 63.180(b) of this subpart.

C_t = Total number of monitored connectors in the process unit.

C_C = Optional credit for removed connectors = 0.67 × net (i.e., total removed—total added) number of connectors in organic hazardous air pollutants service removed from the process unit after the compliance date set forth in the applicable subpart for existing process units, and after the date of initial start-up for new process units. If credits are not taken, then C_C = 0.

(2) For subsequent monitoring periods, use the following equation:

$$\% C_L = [(C_L - C_{AN}) / (C_t + C_C)] \times 100$$

where:

% C_L = Percent leaking connectors as determined through periodic monitoring required in paragraphs (a) and (b) of this section.

C_L = Number of connectors, including nonrepairables, measured at 500 parts per million or greater, by the method specified in § 63.180(b) of this subpart.

C_{AN} = Number of allowable nonrepairable connectors, as determined by monitoring required in paragraphs (b)(3) and (c) of this section, not to exceed 2 percent of the total connector population, C_t.

C_t = Total number of monitored connectors, including nonrepairables, in the process unit.

C_C = Optional credit for removed connectors = 0.67 × net number (i.e., total removed—total added) of connectors in organic hazardous air pollutants service removed from the process unit after the compliance date set forth in the applicable subpart for existing process units, and after the date of initial start-up for new process units. If credits are not taken, then C_C = 0.

(j) Optional credit for removed connectors. If an owner or operator eliminates a connector subject to monitoring under paragraph (b) of this section, the owner or operator may receive credit for elimination of the connector, as described in paragraph (i) of this section, provided the requirements in paragraphs (j)(1) through (j)(4) are met.

(1) The connector was welded after the date of proposal of the specific subpart that references this subpart.

(2) The integrity of the weld is demonstrated by monitoring it according to the procedures in § 63.180(b) of this subpart or by testing using X-ray, acoustic monitoring, hydrotesting, or other applicable method.

(3) Welds created after the date of proposal but before the date of promulgation of a specific subpart that references this subpart are monitored or tested by 3 months after the compliance date specified in the applicable subpart.

- (4) Welds created after promulgation of the subpart that references this subpart are monitored or tested within 3 months after being welded.
- (5) If an inadequate weld is found or the connector is not welded completely around the circumference, the connector is not considered a welded connector and is therefore not exempt from the provisions of this subpart.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48177, Sept. 20, 1994; 61 FR 31440, June 20, 1996; 62 FR 2791, Jan. 17, 1997; 89 FR 43224, May 16, 2024]

§ 63.175 Quality improvement program for valves.

- (a) In Phase III, an owner or operator may elect to comply with one of the alternative quality improvement programs specified in paragraphs (d) and (e) of this section. The decision to use one of these alternative provisions to comply with the requirements of § 63.168(d)(1)(ii) of this subpart must be made during the first year of Phase III for existing process units and for new process units.
- (b) An owner or operator of a process unit subject to the requirements of paragraph (d) or (e) of this section shall comply with those requirements until the process unit has fewer than 2 percent leaking valves, calculated as a rolling average of 2 consecutive quarters, as specified in § 63.168(e) of this subpart.
- (c) After the process unit has fewer than 2 percent leaking valves, the owner or operator may elect to comply with the requirements in § 63.168 of this subpart, to continue to comply with the requirements in paragraph (e) (or (d), if appropriate) of this section, or comply with both the requirements in § 63.168 and § 63.175.
 - (1) If the owner or operator elects to continue the quality improvement program, the owner or operator is exempt from the requirements for performance trials as specified in paragraph (e)(6) of this section, or further progress as specified in paragraph (d)(4) of this section, as long as the process unit has fewer than 2 percent leaking valves calculated according to § 63.168(e).
 - (2) If the owner or operator elects to comply with both paragraph (e) of this section and § 63.168 of this subpart, he may also take advantage of the lower monitoring frequencies associated with lower leak rates in § 63.168 (d)(2), (d)(3), and (d)(4) of this subpart.
 - (3) If the owner or operator elects not to continue the quality improvement program, the program is no longer an option if the process unit again exceeds 2 percent leaking valves, and in such case, monthly monitoring will be required.
- (d) The following requirements shall be met if an owner or operator elects to use a quality improvement program to demonstrate further progress:
 - (1) The owner or operator shall continue to comply with the requirements in § 63.168 of this subpart except each valve shall be monitored quarterly.
 - (2) The owner or operator shall collect the following data, and maintain records as required in § 63.181(h)(1) of this subpart, for each valve in each process unit subject to the quality improvement program:
 - (i) The maximum instrument reading observed in each monitoring observation before repair, the response factor for the stream if appropriate, the instrument model number, and date of the observation.

- (ii) Whether the valve is in gas or light liquid service.
- (iii) If a leak is detected, the repair methods used and the instrument readings after repair.
- (3) The owner or operator shall continue to collect data on the valves as long as the process unit remains in the quality improvement program.
- (4) The owner or operator must demonstrate progress in reducing the percent leaking valves each quarter the process unit is subject to the requirements of paragraph (d) of this section, except as provided in paragraphs (d)(4)(ii) and (d)(4)(iii) of this section.
 - (i) Demonstration of progress shall mean that for each quarter there is at least a 10-percent reduction in the percent leaking valves from the percent leaking valves determined for the preceding monitoring period. The percent leaking valves shall be calculated as a rolling average of two consecutive quarters of monitoring data. The percent reduction shall be calculated using the rolling average percent leaking valves, according to the following:

$$\%LV_R = (\%LV_{AVG1} - \%LV_{AVG2} / \%LV_{AVG1} \times 100$$

where:

$\%LV_R$ = Percent leaking valve reduction.

$$\%LV_{AVG1} = (\%V_{Li} + \%V_{Li=1})/2.$$

$$\%LV_{AVG2} = (\%V_{Li=1} + \%V_{Li=2})/2.$$

where:

$\%V_{Li}$, $\%V_{Li=1}$, $\%V_{Li=2}$ are percent leaking valves calculated for subsequent monitoring periods, i , $i+1$, $i+2$.

- (ii) An owner or operator who fails for two consecutive rolling averages to demonstrate at least a 10-percent reduction per quarter in percent leaking valves, and whose overall average percent reduction based on two or more rolling averages is less than 10 percent per quarter, shall either comply with the requirements in § 63.168(d)(1)(i) of this subpart using monthly monitoring or shall comply using a quality improvement program for technology review as specified in paragraph (e) of this section. If the owner or operator elects to comply with the requirements of paragraph (e) of this section, the schedule for performance trials and valve replacements remains as specified in paragraph (e) of this section.
- (iii) As an alternative to the provisions in paragraph (d)(4)(i), an owner or operator may use the procedure specified in paragraphs (d)(4)(iii)(A) and (d)(4)(iii)(B) of this section to demonstrate progress in reducing the percent leaking valves.
 - (A) The percent reduction that must be achieved each quarter shall be calculated as follows:

$$\%RR = \frac{\%V_L - 2\%}{0.10}$$

$\%RR$ = percent reduction required each quarter, as calculated according to § 63.168(e)

%V_L = percent leaking valves, calculated according to § 63.168(e), at the time elected to use provisions of § 63.168(d)(1)(ii)

(B) The owner or operator shall achieve less than 2 percent leaking valves no later than 2 years after electing to use the demonstration of progress provisions in § 63.175(d) of this subpart.

(e) The following requirements shall be met if an owner or operator elects to use a quality improvement program of technology review and improvement:

- (1) The owner or operator shall comply with the requirements in § 63.168 of this subpart except the requirement for monthly monitoring in § 63.168(d)(1)(i) of this subpart does not apply.
- (2) The owner or operator shall collect the data specified below, and maintain records as required in § 63.181(h)(2), for each valve in each process unit subject to the quality improvement program. The data may be collected and the records may be maintained on a process unit or group of process units basis. The data shall include the following:
 - (i) Valve type (e.g., ball, gate, check); valve manufacturer; valve design (e.g., external stem or actuating mechanism, flanged body); materials of construction; packing material; and year installed.
 - (ii) Service characteristics of the stream such as operating pressure, temperature, line diameter, and corrosivity.
 - (iii) Whether the valve is in gas or light liquid service.
 - (iv) The maximum instrument readings observed in each monitoring observation before repair, response factor for the stream if adjusted, instrument model number, and date of the observation.
 - (v) If a leak is detected, the repair methods used and the instrument readings after repair.
 - (vi) If the data will be analyzed as part of a larger analysis program involving data from other plants or other types of process units, a description of any maintenance or quality assurance programs used in the process unit that are intended to improve emission performance.
- (3) The owner or operator shall continue to collect data on the valves as long as the process unit remains in the quality improvement program.
- (4) The owner or operator shall inspect all valves removed from the process unit due to leaks. The inspection shall determine which parts of the valve have failed and shall include recommendations, as appropriate, for design changes or changes in specifications to reduce leak potential.
- (5)
 - (i) The owner or operator shall analyze the data collected to comply with the requirements of paragraph (e)(2) of this section to determine the services, operating or maintenance practices, and valve designs or technologies that have poorer than average emission performance and those that have better than average emission performance. The analysis shall determine if specific trouble areas can be identified on the basis of service, operating conditions or maintenance practices, equipment design, or other process specific factors.

- (ii) The analysis shall also be used to identify any superior performing valve technologies that are applicable to the service(s), operating conditions, or valve designs associated with poorer than average emission performance. A superior performing valve technology is one for which a group of such valves has a leak frequency of less than 2 percent for specific applications in such a process unit. A candidate superior performing valve technology is one demonstrated or reported in the available literature or through a group study as having low emission performance and as being capable of achieving less than 2 percent leaking valves in the process unit.
- (iii) The analysis shall include consideration of:
 - (A) The data obtained from the inspections of valves removed from the process unit due to leaks,
 - (B) Information from the available literature and from the experience of other plant sites that will identify valve designs or technologies and operating conditions associated with low emission performance for specific services, and
 - (C) Information on limitations on the service conditions for the valve design and operating conditions as well as information on maintenance procedures to ensure continued low emission performance.
- (iv) The data analysis may be conducted through an inter- or intra-company program (or through some combination of the two approaches) and may be for a single process unit, a company, or a group of process units.
- (v) The first analysis of the data shall be completed no later than 18 months after the start of Phase III. The first analysis shall be performed using a minimum of two quarters of data. An analysis of the data shall be done each year the process unit is in the quality improvement program.
- (6) A trial evaluation program shall be conducted at each plant site for which the data analysis does not identify superior performing valve designs or technologies that can be applied to the operating conditions and services identified as having poorer than average performance, except as provided in paragraph (e)(6)(v) of this section. The trial program shall be used to evaluate the feasibility of using in the process unit the valve designs or technologies that have been identified by others as having low emission performance.
 - (i) The trial program shall include on-line trials of valves or operating and maintenance practices that have been identified in the available literature or in analysis by others as having the ability to perform with leak rates below 2 percent in similar services, as having low probability of failure, or as having no external actuating mechanism in contact with the process fluid. If any of the candidate superior performing valve technologies is not included in the performance trials, the reasons for rejecting specific technologies from consideration shall be documented as required in § 63.181(h)(5)(ii) of this subpart.
 - (ii) The number of valves in the trial evaluation program shall be the lesser of 1 percent or 20 valves for programs involving single process units and the lesser of 1 percent or 50 valves for programs involving groups of process units.
 - (iii) The trial evaluation program shall specify and include documentation of:

- (A) The candidate superior performing valve designs or technologies to be evaluated, the stages for evaluating the identified candidate valve designs or technologies, including the estimated time period necessary to test the applicability;
 - (B) The frequency of monitoring or inspection of the equipment;
 - (C) The range of operating conditions over which the component will be evaluated; and
 - (D) Conclusions regarding the emission performance and the appropriate operating conditions and services for the trial valves.
 - (iv) The performance trials shall initially be conducted for, at least, a 6-month period beginning not later than 18 months after the start of Phase III. Not later than 24 months after the start of Phase III, the owner or operator shall have identified valve designs or technologies that, combined with appropriate process, operating, and maintenance practices, operate with low emission performance for specific applications in the process unit. The owner or operator shall continue to conduct performance trials as long as no superior performing design or technology has been identified, except as provided in paragraph (e)(6)(vi) of this section. The compilation of candidate and demonstrated superior emission performance valve designs or technologies shall be amended in the future, as appropriate, as additional information and experience is obtained.
 - (v) Any plant site with fewer than 400 valves and owned by a corporation with fewer than 100 total employees shall be exempt from trial evaluations of valves. Plant sites exempt from the trial evaluations of valves shall begin the program at the start of the fourth year of Phase III.
 - (vi) An owner or operator who has conducted performance trials on all candidate superior emission performance technologies suitable for the required applications in the process unit may stop conducting performance trials provided that a superior performing design or technology has been demonstrated or there are no technically feasible candidate superior technologies remaining. The owner or operator shall prepare an engineering evaluation documenting the physical, chemical, or engineering basis for the judgment that the superior emission performance technology is technically infeasible or demonstrating that it would not reduce emissions.
- (7) Each owner or operator who elects to use a quality improvement program for technology review and improvement shall prepare and implement a valve quality assurance program that details purchasing specifications and maintenance procedures for all valves in the process unit. The quality assurance program may establish any number of categories, or classes, of valves as needed to distinguish among operating conditions and services associated with poorer than average emission performance as well as those associated with better than average emission performance. The quality assurance program shall be developed considering the findings of the data analysis required under paragraph (e)(5) of this section, if applicable, the findings of the trial evaluation required in paragraph (e)(6) of this section, and the operating conditions in the process unit. The quality assurance program shall be reviewed and, as appropriate, updated each year as long as the process unit has 2 percent or more leaking valves.
- (i) The quality assurance program shall:
 - (A) Establish minimum design standards for each category of valves. The design standards shall specify known critical parameters such as tolerance, manufacturer, materials of construction, previous usage, or other applicable identified critical parameters;

- (B) Require that all equipment orders specify the design standard (or minimum tolerances) for the valve;
 - (C) Include a written procedure for bench testing of valves that specifies performance criteria for acceptance of valves and specifies criteria for the precision and accuracy of the test apparatus. All valves repaired off-line after preparation of the quality assurance plan shall be bench-tested for leaks. This testing may be conducted by the owner or operator of the process unit, by the vendor, or by a designated representative. The owner or operator shall install only those valves that have been documented through bench-testing to be nonleaking.
 - (D) Require that all valves repaired on-line be monitored using the method specified in § 63.180(b) of this subpart for leaks for 2 successive months, after repair.
 - (E) Provide for an audit procedure for quality control of purchased equipment to ensure conformance with purchase specifications. The audit program may be conducted by the owner or operator of the process unit or by a designated representative.
 - (F) Detail off-line valve maintenance and repair procedures. These procedures shall include provisions to ensure that rebuilt or refurbished valves will meet the design specifications for the valve type and will operate such that emissions are minimized.
- (ii) The quality assurance program shall be established no later than the start of the third year of Phase III for plant sites with 400 or more valves or owned by a corporation with 100 or more employees; and no later than the start of the fourth year of Phase III for plant sites with less than 400 valves and owned by a corporation with less than 100 employees.
- (8) Beginning at the start of the third year of Phase III for plant sites with 400 or more valves or owned by a corporation with 100 or more employees and at the start of the fourth year of Phase III for plant sites with less than 400 valves and owned by a corporation with less than 100 employees, each valve that is replaced for any reason shall be replaced with a new or modified valve that complies with the quality assurance standards for the valve category and that is identified as superior emission performance technology. Superior emission performance technology means valves or valve technologies identified with emission performance that, combined with appropriate process, operating, and maintenance practices, will result in less than 2 percent leaking valves for specific applications in a large population, except as provided in paragraph (e)(8)(ii) of this section.
- (i) The valves shall be maintained as specified in the quality assurance program.
 - (ii) If a superior emission performance technology cannot be identified, then valve replacement shall be with one of (if several) the lowest emission performance technologies that has been identified for the specific application.

[59 FR 19568, Apr. 22, 1994, as amended at 60 FR 63631, Dec. 12, 1995]

§ 63.176 Quality improvement program for pumps.

- (a) In Phase III, if, on a 6-month rolling average, the greater of either 10 percent of the pumps in a process unit (or plant site) or three pumps in a process unit (or plant site) leak, the owner or operator shall comply with the requirements of this section as specified below:

- (1) Pumps that are in food/medical service or in polymerizing monomer service shall comply with all requirements except for those specified in paragraph (d)(8) of this section.
- (2) Pumps that are not in food/medical or polymerizing monomer service shall comply with all requirements of this section.
- (b) The owner or operator shall comply with the requirements of this section until the number of leaking pumps is less than the greater of either 10 percent of the pumps or three pumps, calculated as a 6-month rolling average, in the process unit (or plant site). Once the performance level is achieved, the owner or operator shall comply with the requirements in § 63.163 of this subpart.
- (c) If in a subsequent monitoring period, the process unit (or plant site) has greater than 10 percent of the pumps leaking or three pumps leaking (calculated as a 6-month rolling average), the owner or operator shall resume the quality improvement program starting at performance trials.
- (d) The quality improvement program shall include the following:
 - (1) The owner or operator shall comply with the requirements in § 63.163 of this subpart.
 - (2) The owner or operator shall collect the following data, and maintain records as required in § 63.181(h)(3), for each pump in each process unit (or plant site) subject to the quality improvement program. The data may be collected and the records may be maintained on a process unit or plant site basis.
 - (i) Pump type (e.g., piston, horizontal or vertical centrifugal, gear, bellows); pump manufacturer; seal type and manufacturer; pump design (e.g., external shaft, flanged body); materials of construction; if applicable, barrier fluid or packing material; and year installed.
 - (ii) Service characteristics of the stream such as discharge pressure, temperature, flow rate, corrosivity, and annual operating hours.
 - (iii) The maximum instrument readings observed in each monitoring observation before repair, response factor for the stream if appropriate, instrument model number, and date of the observation.
 - (iv) If a leak is detected, the repair methods used and the instrument readings after repair.
 - (v) If the data will be analyzed as part of a larger analysis program involving data from other plants or other types of process units, a description of any maintenance or quality assurance programs used in the process unit that are intended to improve emission performance.
 - (3) The owner or operator shall continue to collect data on the pumps as long as the process unit (or plant site) remains in the quality improvement program.
 - (4) The owner or operator shall inspect all pumps or pump seals which exhibited frequent seal failures and were removed from the process unit due to leaks. The inspection shall determine the probable cause of the pump seal failure or of the pump leak and shall include recommendations, as appropriate, for design changes or changes in specifications to reduce leak potential.
 - (5)
 - (i) The owner or operator shall analyze the data collected to comply with the requirements of paragraph (d)(2) of this section to determine the services, operating or maintenance practices, and pump or pump seal designs or technologies that have poorer than average emission

performance and those that have better than average emission performance. The analysis shall determine if specific trouble areas can be identified on the basis of service, operating conditions or maintenance practices, equipment design, or other process specific factors.

(ii) The analysis shall also be used to determine if there are superior performing pump or pump seal technologies that are applicable to the service(s), operating conditions, or pump or pump seal designs associated with poorer than average emission performance. A superior performing pump or pump seal technology is one with a leak frequency of less than 10 percent for specific applications in the process unit or plant site. A candidate superior performing pump or pump seal technology is one demonstrated or reported in the available literature or through a group study as having low emission performance and as being capable of achieving less than 10 percent leaking pumps in the process unit (or plant site).

(iii) The analysis shall include consideration of:

- (A) The data obtained from the inspections of pumps and pump seals removed from the process unit due to leaks;
- (B) Information from the available literature and from the experience of other plant sites that will identify pump designs or technologies and operating conditions associated with low emission performance for specific services; and
- (C) Information on limitations on the service conditions for the pump seal technology operating conditions as well as information on maintenance procedures to ensure continued low emission performance.

(iv) The data analysis may be conducted through an inter- or intra-company program (or through some combination of the two approaches) and may be for a single process unit, a plant site, a company, or a group of process units.

(v) The first analysis of the data shall be completed no later than 18 months after the start of the quality improvement program. The first analysis shall be performed using a minimum of 6 months of data. An analysis of the data shall be done each year the process unit is in the quality improvement program.

(6) A trial evaluation program shall be conducted at each plant site for which the data analysis does not identify use of superior performing pump seal technology or pumps that can be applied to the areas identified as having poorer than average performance, except as provided in paragraph (d)(6)(v) of this section. The trial program shall be used to evaluate the feasibility of using in the process unit (or plant site) the pump designs or seal technologies, and operating and maintenance practices that have been identified by others as having low emission performance.

(i) The trial program shall include on-line trials of pump seal technologies or pump designs and operating and maintenance practices that have been identified in the available literature or in analysis by others as having the ability to perform with leak rates below 10 percent in similar services, as having low probability of failure, or as having no external actuating mechanism in contact with the process fluid. If any of the candidate superior performing pump seal technologies or pumps is not included in the performance trials, the reasons for rejecting specific technologies from consideration shall be documented as required in § 63.181(h)(5)(ii).

- (ii) The number of pump seal technologies or pumps in the trial evaluation program shall be the lesser of 1 percent or two pumps for programs involving single process units and the lesser of 1 percent or five pumps for programs involving a plant site or groups of process units. The minimum number of pumps or pump seal technologies in a trial program shall be one.
- (iii) The trial evaluation program shall specify and include documentation of:
 - (A) The candidate superior performing pump seal designs or technologies to be evaluated, the stages for evaluating the identified candidate pump designs or pump seal technologies, including the time period necessary to test the applicability;
 - (B) The frequency of monitoring or inspection of the equipment;
 - (C) The range of operating conditions over which the component will be evaluated; and
 - (D) Conclusions regarding the emission performance and the appropriate operating conditions and services for the trial pump seal technologies or pumps.
- (iv) The performance trials shall initially be conducted, at least, for a 6-month period beginning not later than 18 months after the start of the quality improvement program. No later than 24 months after the start of the quality improvement program, the owner or operator shall have identified pump seal technologies or pump designs that, combined with appropriate process, operating, and maintenance practices, operate with low emission performance for specific applications in the process unit. The owner or operator shall continue to conduct performance trials as long as no superior performing design or technology has been identified, except as provided in paragraph (d)(6)(vi) of this section. The initial list of superior emission performance pump designs or pump seal technologies shall be amended in the future, as appropriate, as additional information and experience is obtained.
- (v) Any plant site with fewer than 400 valves and owned by a corporation with fewer than 100 employees shall be exempt from trial evaluations of pump seals or pump designs. Plant sites exempt from the trial evaluations of pumps shall begin the pump seal or pump replacement program at the start of the fourth year of the quality improvement program.
- (vi) An owner or operator who has conducted performance trials on all alternative superior emission performance technologies suitable for the required applications in the process unit may stop conducting performance trials provided that a superior performing design or technology has been demonstrated or there are no technically feasible alternative superior technologies remaining. The owner or operator shall prepare an engineering evaluation documenting the physical, chemical, or engineering basis for the judgment that the superior emission performance technology is technically infeasible or demonstrating that it would not reduce emissions.
- (7) Each owner or operator shall prepare and implement a pump quality assurance program that details purchasing specifications and maintenance procedures for all pumps and pump seals in the process unit. The quality assurance program may establish any number of categories, or classes, of pumps as needed to distinguish among operating conditions and services associated with poorer than average emission performance as well as those associated with better than average emission performance. The quality assurance program shall be developed considering the findings of the data analysis required under paragraph (d)(5) of this section, if applicable, the findings of the trial

evaluation required in paragraph (d)(6) of this section, and the operating conditions in the process unit. The quality assurance program shall be updated each year as long as the process unit has the greater of either 10 percent or more leaking pumps or has three leaking pumps.

(i) The quality assurance program shall:

- (A) Establish minimum design standards for each category of pumps or pump seal technology. The design standards shall specify known critical parameters such as tolerance, manufacturer, materials of construction, previous usage, or other applicable identified critical parameters;
- (B) Require that all equipment orders specify the design standard (or minimum tolerances) for the pump or the pump seal;
- (C) Provide for an audit procedure for quality control of purchased equipment to ensure conformance with purchase specifications. The audit program may be conducted by the owner or operator of the plant site or process unit or by a designated representative; and
- (D) Detail off-line pump maintenance and repair procedures. These procedures shall include provisions to ensure that rebuilt or refurbished pumps and pump seals will meet the design specifications for the pump category and will operate such that emissions are minimized.

(ii) The quality assurance program shall be established no later than the start of the third year of the quality improvement program for plant sites with 400 or more valves or 100 or more employees; and no later than the start of the fourth year of the quality improvement program for plant sites with less than 400 valves and less than 100 employees.

(8) Beginning at the start of the third year of the quality improvement program for plant sites with 400 or more valves or 100 or more employees and at the start of the fourth year of the quality improvement program for plant sites with less than 400 valves and less than 100 employees, the owner or operator shall replace, as described in paragraphs (d)(8)(i) and (d)(8)(ii) of this section, the pumps or pump seals that are not superior emission performance technology with pumps or pump seals that have been identified as superior emission performance technology and that comply with the quality assurance standards for the pump category. Superior emission performance technology is that category or design of pumps or pump seals with emission performance which, when combined with appropriate process, operating, and maintenance practices, will result in less than 10 percent leaking pumps for specific applications in the process unit or plant site. Superior emission performance technology includes material or design changes to the existing pump, pump seal, seal support system, installation of multiple mechanical seals or equivalent, or pump replacement.

(i) Pumps or pump seals shall be replaced at the rate of 20 percent per year based on the total number of pumps in light liquid service. The calculated value shall be rounded to the nearest nonzero integer value. The minimum number of pumps or pump seals shall be one. Pump replacement shall continue until all pumps subject to the requirements of § 63.163 of this subpart are pumps determined to be superior performance technology.

(ii) The owner or operator may delay replacement of pump seals or pumps with superior technology until the next planned process unit shutdown, provided the number of pump seals and pumps replaced is equivalent to the 20 percent or greater annual replacement rate.

(iii) The pumps shall be maintained as specified in the quality assurance program.

§ 63.177 Alternative means of emission limitation: General.

- (a) Permission to use an alternative means of emission limitation under section 112(h)(3) of the Act shall be governed by the following procedures in paragraphs (b) through (e) of this section.
- (b) Where the standard is an equipment, design, or operational requirement:
 - (1) Each owner or operator applying for permission to use an alternative means of emission limitation under § 63.6(g) of subpart A of this part shall be responsible for collecting and verifying emission performance test data for an alternative means of emission limitation.
 - (2) The Administrator will compare test data for the means of emission limitation to test data for the equipment, design, and operational requirements.
 - (3) The Administrator may condition the permission on requirements that may be necessary to ensure operation and maintenance to achieve the same emission reduction as the equipment, design, and operational requirements.
- (c) Where the standard is a work practice:
 - (1) Each owner or operator applying for permission shall be responsible for collecting and verifying test data for an alternative means of emission limitation.
 - (2) For each kind of equipment for which permission is requested, the emission reduction achieved by the required work practices shall be demonstrated for a minimum period of 12 months.
 - (3) For each kind of equipment for which permission is requested, the emission reduction achieved by the alternative means of emission limitation shall be demonstrated.
 - (4) Each owner or operator applying for permission shall commit, in writing, for each kind of equipment to work practices that provide for emission reductions equal to or greater than the emission reductions achieved by the required work practices.
 - (5) The Administrator will compare the demonstrated emission reduction for the alternative means of emission limitation to the demonstrated emission reduction for the required work practices and will consider the commitment in paragraph (c)(4) of this section.
 - (6) The Administrator may condition the permission on requirements that may be necessary to ensure operation and maintenance to achieve the same or greater emission reduction as the required work practices of this subpart.
- (d) An owner or operator may offer a unique approach to demonstrate the alternative means of emission limitation.
- (e)
 - (1) Manufacturers of equipment used to control equipment leaks of an organic HAP may apply to the Administrator for permission for an alternative means of emission limitation that achieves a reduction in emissions of the organic HAP achieved by the equipment, design, and operational requirements of this subpart.
 - (2) The Administrator will grant permission according to the provisions of paragraphs (b), (c), and (d) of this section.

§ 63.178 Alternative means of emission limitation: Batch processes.

- (a) As an alternative to complying with the requirements of §§ 63.163 through 63.171 and §§ 63.173 through 63.176, an owner or operator of a batch process that operates in organic HAP service during the calendar year may comply with one of the standards specified in paragraphs (b) and (c) of this section, or the owner or operator may petition for approval of an alternative standard under the provisions of § 63.177 of this subpart. The alternative standards of this section provide the options of pressure testing or monitoring the equipment for leaks. The owner or operator may switch among the alternatives provided the change is documented as specified in § 63.181.
- (b) The following requirements shall be met if an owner or operator elects to use pressure testing of batch product-process equipment to demonstrate compliance with this subpart. An owner or operator who complies with the provisions of this paragraph is exempt from the monitoring provisions of § 63.163, §§ 63.168 and 63.169, and §§ 63.173 through 63.176 of this subpart.
 - (1) Each time equipment is reconfigured for production of a different product or intermediate, the batch product-process equipment train shall be pressure-tested for leaks before organic HAP is first fed to the equipment and the equipment is placed in organic HAP service.
 - (i) When the batch product-process train is reconfigured to produce a different product, pressure testing is required only for the new or disturbed equipment.
 - (ii) Each batch product process that operates in organic HAP service during a calendar year shall be pressure tested at least once during that calendar year.
 - (iii) Pressure testing is not required for routine seal breaks, such as changing hoses or filters, which are not part of the reconfiguration to produce a different product or intermediate.
 - (2) The batch product process equipment shall be tested either using the procedures specified in § 63.180(f) of this subpart for pressure or vacuum loss or with a liquid using the procedures specified in § 63.180(g) of this subpart.
 - (3)
 - (i) For pressure or vacuum tests, a leak is detected if the rate of change in pressure is greater than 6.9 kilopascals (1 psig) in 1 hour or if there is visible, audible, or olfactory evidence of fluid loss.
 - (ii) For pressure tests using a liquid, a leak is detected if there are indications of liquids dripping or if there is other evidence of fluid loss.
 - (4)
 - (i) If a leak is detected, it shall be repaired and the batch product-process equipment shall be retested before start-up of the process.
 - (ii) If a batch product-process fails the retest or the second of two consecutive pressure tests, it shall be repaired as soon as practicable, but not later than 30 calendar days after the second pressure test, provided the conditions specified in paragraph (d) of this section are met.
- (c) The following requirements shall be met if an owner or operator elects to monitor the equipment to detect leaks by the method specified in § 63.180(b) of this subpart to demonstrate compliance with this subpart.
 - (1) The owner or operator shall comply with the requirements of §§ 63.163 through 63.170, and §§ 63.172 through 63.176 of this subpart.

- (2) The equipment shall be monitored for leaks by the method specified in § 63.180(b) of this subpart when the equipment is in organic HAP service, in use with an acceptable surrogate volatile organic compound which is not an organic HAP, or is in use with any other detectable gas or vapor.
- (3) The equipment shall be monitored for leaks as specified below:
 - (i) Each time the equipment is reconfigured for the production of a new product, the reconfigured equipment shall be monitored for leaks within 30 days of start-up of the process. This initial monitoring of reconfigured equipment shall not be included in determining percent leaking equipment in the process unit.
 - (ii) Connectors shall be monitored in accordance with the requirements in § 63.174 of this subpart.
 - (iii) Equipment other than connectors shall be monitored at the frequencies specified in table 1 of this subpart. The operating time shall be determined as the proportion of the year the batch product-process that is subject to the provisions of this subpart is operating.
 - (iv) The monitoring frequencies specified in table 1 of this subpart are not requirements for monitoring at specific intervals and can be adjusted to accommodate process operations. An owner or operator may monitor anytime during the specified monitoring period (e.g., month, quarter, year), provided the monitoring is conducted at a reasonable interval after completion of the last monitoring campaign. For example, if the equipment is not operating during the scheduled monitoring period, the monitoring can be done during the next period when the process is operating.
- (4) If a leak is detected, it shall be repaired as soon as practicable but not later than 15 calendar days after it is detected, except as provided in paragraph (d) of this section.
- (d) Delay of repair of equipment for which leaks have been detected is allowed if the replacement equipment is not available providing the following conditions are met:
 - (1) Equipment supplies have been depleted and supplies had been sufficiently stocked before the supplies were depleted.
 - (2) The repair is made no later than 10 calendar days after delivery of the replacement equipment.

§ 63.179 Alternative means of emission limitation: Enclosed-vented process units.

Process units enclosed in such a manner that all emissions from equipment leaks are vented through a closed-vent system to a control device meeting the requirements of § 63.172 of this subpart are exempt from the requirements of § 63.163, through 63.171, and §§ 63.173 and 63.174 of this subpart. The enclosure shall be maintained under a negative pressure at all times while the process unit is in operation to ensure that all emissions are routed to a control device.

§ 63.180 Test methods and procedures.

- (a) Each owner or operator subject to the provisions of this subpart shall comply with the test methods and procedures requirements provided in this section.
- (b) Monitoring, as required under this subpart, shall comply with the following requirements:
 - (1) Monitoring shall comply with Method 21 of 40 CFR part 60, appendix A.
 - (2)

- (i) Except as provided for in paragraph (b)(2)(ii) of this section, the detection instrument shall meet the performance criteria of Method 21 of 40 CFR part 60, appendix A, except the instrument response factor criteria in Section 3.1.2(a) of Method 21 shall be for the average composition of the process fluid not each individual VOC in the stream. For process streams that contain nitrogen, water, air, or other inerts which are not organic HAP's or VOC's, the average stream response factor may be calculated on an inert-free basis. The response factor may be determined at any concentration for which monitoring for leaks will be conducted.
 - (ii) If no instrument is available at the plant site that will meet the performance criteria specified in paragraph (b)(2)(i) of this section, the instrument readings may be adjusted by multiplying by the average response factor of the process fluid, calculated on an inert-free basis as described in paragraph (b)(2)(i) of this section.
- (3) The instrument shall be calibrated before use on each day of its use by the procedures specified in Method 21 of 40 CFR part 60, appendix A.
- (4) Calibration gases shall be:
- (i) Zero air (less than 10 parts per million of hydrocarbon in air); and
 - (ii) Mixtures of methane in air at the concentrations specified in paragraphs (b)(4)(ii)(A) through (b)(4)(ii)(C) of this section. A calibration gas other than methane in air may be used if the instrument does not respond to methane or if the instrument does not meet the performance criteria specified in paragraph (b)(2)(i) of this section. In such cases, the calibration gas may be a mixture of one or more of the compounds to be measured in air.
 - (A) For Phase I, a mixture of methane or other compounds, as applicable, in air at a concentration of approximately, but less than, 10,000 parts per million.
 - (B) For Phase II, a mixture of methane or other compounds, as applicable, and air at a concentration of approximately, but less than, 10,000 parts per million for agitators, 5,000 parts per million for pumps, and 500 parts per million for all other equipment, except as provided in paragraph (b)(4)(iii) of this section.
 - (C) For Phase III, a mixture of methane or other compounds, as applicable, and air at a concentration of approximately, but less than, 10,000 parts per million methane for agitators; 2,000 parts per million for pumps in food/medical service; 5,000 parts per million for pumps in polymerizing monomer service; 1,000 parts per million for all other pumps; and 500 parts per million for all other equipment, except as provided in paragraph (b)(4)(iii) of this section.
 - (iii) The instrument may be calibrated at a higher methane concentration than the concentration specified for that piece of equipment. The concentration of the calibration gas may exceed the concentration specified as a leak by no more than 2,000 parts per million. If the monitoring instrument's design allows for multiple calibration scales, then the lower scale shall be calibrated with a calibration gas that is no higher than 2,000 parts per million above the concentration specified as a leak and the highest scale shall be calibrated with a calibration gas that is approximately equal to 10,000 parts per million. If only one scale on an instrument will be used during monitoring, the owner or operator need not calibrate the scales that will not be used during that day's monitoring.

- (5) Monitoring shall be performed when the equipment is in organic HAP service, in use with an acceptable surrogate volatile organic compound which is not an organic HAP, or is in use with any other detectable gas or vapor.
- (6) Monitoring data that do not meet the criteria specified in paragraphs (b)(1) through (b)(5) of this section may be used to qualify for less frequent monitoring under the provisions in § 63.168(d)(2) and (d)(3) or § 63.174(b)(3)(ii) or (b)(3)(iii) of this subpart provided the data meet the conditions specified in paragraphs (b)(6)(i) and (b)(6)(ii) of this section.
 - (i) The data were obtained before April 22, 1994.
 - (ii) The departures from the criteria specified in paragraphs (b)(1) through (b)(5) of this section or from the specified monitoring frequency of § 63.168(c) are minor and do not significantly affect the quality of the data. Examples of minor departures are monitoring at a slightly different frequency (such as every six weeks instead of monthly or quarterly), following the performance criteria of section 3.1.2(a) of Method 21 of appendix A of 40 CFR part 60 instead of paragraph (b)(2) of this section, or monitoring at a different leak definition if the data would indicate the presence or absence of a leak at the concentration specified in this subpart. Failure to use a calibrated instrument is not considered a minor departure.
- (c) When equipment is monitored for compliance as required in §§ 63.164(i), 63.165(a) or (e)(1), and 63.172(f) or when equipment subject to a leak definition of 500 ppm is monitored for leaks as required by this subpart, the owner or operator may elect to adjust or not to adjust the instrument readings for background. If an owner or operator elects to not adjust instrument readings for background, the owner or operator shall monitor the equipment according to the procedures specified in paragraphs (b)(1) through (4) of this section. In such case, all instrument readings shall be compared directly to the applicable leak definition to determine whether there is a leak. If an owner or operator elects to adjust instrument readings for background, the owner or operator shall monitor the equipment according to the procedures specified in paragraphs (c)(1) through (c)(4) of this section.
 - (1) The requirements of paragraphs (b) (1) through (4) of this section shall apply.
 - (2) The background level shall be determined, using the same procedures that will be used to determine whether the equipment is leaking.
 - (3) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Method 21 of 40 CFR part 60, appendix A.
 - (4) The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 parts per million for determining compliance.
- (d)
 - (1) Each piece of equipment within a process unit that can reasonably be expected to contain equipment in organic HAP service is presumed to be in organic HAP service unless an owner or operator demonstrates that the piece of equipment is not in organic HAP service. For a piece of equipment to be considered not in organic HAP service, it must be determined that the percent organic HAP content can be reasonably expected not to exceed 5 percent by weight on an annual average basis. For purposes of determining the percent organic HAP content of the process fluid that is contained in or contacts equipment, Method 18 of 40 CFR part 60, appendix A shall be used. ASTM D6420-18 (incorporated by reference, see § 63.14) may also be used in lieu of Method 18, if

the target compounds are all known and are all listed in Section 1.1 of ASTM D6420-18 as measurable; ASTM D6420-18 must not be used for methane and ethane; and ASTM D6420-18 may not be used as a total VOC method.

(2)

(i) An owner or operator may use good engineering judgment rather than the procedures in paragraph (d)(1) of this section to determine that the percent organic HAP content does not exceed 5 percent by weight. When an owner or operator and the Administrator do not agree on whether a piece of equipment is not in organic HAP service, however, the procedures in paragraph (d)(1) of this section shall be used to resolve the disagreement.

(ii) Conversely, the owner or operator may determine that the organic HAP content of the process fluid does not exceed 5 percent by weight by, for example, accounting for 98 percent of the content and showing that organic HAP is less than 3 percent.

(3) If an owner or operator determines that a piece of equipment is in organic HAP service, the determination can be revised after following the procedures in paragraph (d)(1) of this section, or by documenting that a change in the process or raw materials no longer causes the equipment to be in organic HAP service.

(4) Samples used in determining the percent organic HAP content shall be representative of the process fluid that is contained in or contacts the equipment.

(e) When a flare is used to comply with § 63.172(d), the owner or operator shall comply with paragraphs (e)(1) through (3) of this section, except as specified in paragraph (a) of § 63.108. The owner or operator is not required to conduct a performance test to determine percent emission reduction or outlet organic HAP or TOC concentration.

(1) Conduct a visible emission test using the techniques specified in § 63.11(b)(4).

(2) Determine the net heating value of the gas being combusted using the techniques specified in § 63.11(b)(6).

(3) Determine the exit velocity using the techniques specified in either § 63.11(b)(7)(i) (and § 63.11(b)(7)(iii), where applicable) or § 63.11(b)(8), as appropriate.

(f) The following procedures shall be used to pressure test batch product-process equipment for pressure or vacuum loss to demonstrate compliance with the requirements of § 63.178(b)(3)(i) of this subpart.

(1) The batch product-process equipment train shall be pressurized with a gas to a pressure less than the set pressure of any safety relief devices or valves or to a pressure slightly above the operating pressure of the equipment, or alternatively, the equipment shall be placed under a vacuum.

(2) Once the test pressure is obtained, the gas source or vacuum source shall be shut off.

(3) The test shall continue for not less than 15 minutes unless it can be determined in a shorter period of time that the allowable rate of pressure drop or of pressure rise was exceeded. The pressure in the batch product-process equipment shall be measured after the gas or vacuum source is shut off and at the end of the test period. The rate of change in pressure in the batch product-process equipment shall be calculated using the following equation:

$$\Delta \frac{P}{t} = \frac{(|P_f - P_i|)}{(t_f - t_i)}$$

where:

$\Delta P/t$ = Change in pressure, psig/hr.

P_f = Final pressure, psig.

P_i = Initial pressure, psig.

$t_f - t_i$ = Elapsed time, hours.

- (4) The pressure shall be measured using a pressure measurement device (gauge, manometer, or equivalent) which has a precision of ± 2.5 millimeter mercury in the range of test pressure and is capable of measuring pressures up to the relief set pressure of the pressure relief device. If such a pressure measurement device is not reasonably available, the owner or operator shall use a pressure measurement device with a precision of at least + 10 percent of the test pressure of the equipment and shall extend the duration of the test for the time necessary to detect a pressure loss or rise that equals a rate of one psig per hour.
- (5) An alternative procedure may be used for leak testing the equipment if the owner or operator demonstrates the alternative procedure is capable of detecting a pressure loss or rise.
- (g) The following procedures shall be used to pressure-test batch product-process equipment using a liquid to demonstrate compliance with the requirements of § 63.178(b)(3)(ii) of this subpart.
 - (1) The batch product-process equipment train, or section of the train, shall be filled with the test liquid (e.g., water, alcohol) until normal operating pressure is obtained. Once the equipment is filled, the liquid source shall be shut off.
 - (2) The test shall be conducted for a period of at least 60 minutes, unless it can be determined in a shorter period of time that the test is a failure.
 - (3) Each seal in the equipment being tested shall be inspected for indications of liquid dripping or other indications of fluid loss. If there are any indications of liquids dripping or of fluid loss, a leak is detected.
 - (4) An alternative procedure may be used for leak testing the equipment, if the owner or operator demonstrates the alternative procedure is capable of detecting losses of fluid.

[59 FR 19568, Apr. 22, 1994, as amended at 59 FR 48177, Sept. 20, 1994; 61 FR 31440, June 20, 1996; 62 FR 2792, Jan. 17, 1997; 66 FR 6936, Jan. 22, 2001; 89 FR 43225, May 16, 2024]

§ 63.181 Recordkeeping requirements.

- (a) An owner or operator of more than one process unit subject to the provisions of this subpart may comply with the recordkeeping requirements for these process units in one recordkeeping system if the system identifies each record by process unit and the program being implemented (e.g., quarterly monitoring,

quality improvement) for each type of equipment. All records and information required by this section shall be maintained in a manner that can be readily accessed at the plant site. This could include physically locating the records at the plant site or accessing the records from a central location by computer at the plant site.

- (b) Except as provided in paragraph (e) of this section, the following information pertaining to all equipment in each process unit subject to the requirements in §§ 63.162 through 63.174 of this subpart shall be recorded:

(1)

- (i) A list of identification numbers for equipment (except connectors exempt from monitoring and recordkeeping identified in § 63.174 of this subpart and instrumentation systems) subject to the requirements of this subpart. Connectors need not be individually identified if all connectors in a designated area or length of pipe subject to the provisions of this subpart are identified as a group, and the number of connectors subject is indicated. With respect to connectors, the list shall be complete no later than the completion of the initial survey required by § 63.174 (b)(1) or (b)(2) of this subpart.
- (ii) A schedule by process unit for monitoring connectors subject to the provisions of § 63.174(a) of this subpart and valves subject to the provisions of § 63.168(d) of this subpart.
- (iii) Physical tagging of the equipment to indicate that it is in organic HAP service is not required. Equipment subject to the provisions of this subpart may be identified on a plant site plan, in log entries, or by other appropriate methods.

(2)

- (i) A list of identification numbers for equipment that the owner or operator elects to equip with a closed-vent system and control device, under the provisions of § 63.163(g), § 63.164(h), § 63.165(c) or (e)(4), or § 63.173(f), as applicable.
- (ii) A list of identification numbers for compressors that the owner or operator elects to designate as operating with an instrument reading of less than 500 parts per million above background, under the provisions of § 63.164(i) of this subpart.
- (iii) Identification of surge control vessels or bottoms receivers subject to the provisions of this subpart that the owner or operator elects to equip with a closed-vent system and control device, under the provisions of § 63.170 of this subpart.

(3)

- (i) A list of identification numbers for pressure relief devices subject to the provisions in § 63.165(a) or (e)(1), as applicable.
- (ii) A list of identification numbers for pressure relief devices equipped with rupture disks, under the provisions of § 63.165(d), (e)(2)(ii), or (e)(2)(iii), as applicable.

(4) Identification of instrumentation systems subject to the provisions of this subpart. Individual components in an instrumentation system need not be identified.

(5) Identification of screwed connectors subject to the requirements of § 63.174(c)(2) of this subpart. Identification can be by area or grouping as long as the total number within each group or area is recorded.

- (6) The following information shall be recorded for each dual mechanical seal system:
 - (i) Design criteria required in §§ 63.163(e)(6)(i), 63.164(e)(2), and 63.173(d)(6)(i) of this subpart and an explanation of the design criteria; and
 - (ii) Any changes to these criteria and the reasons for the changes.
- (7) The following information pertaining to all pumps subject to the provisions of § 63.163(j), valves subject to the provisions of § 63.168(h) and (i) of this subpart, agitators subject to the provisions of § 63.173(h) through (j), and connectors subject to the provisions of § 63.174(f) and (g) of this subpart shall be recorded:
 - (i) Identification of equipment designated as unsafe to monitor, difficult to monitor, or unsafe to inspect and the plan for monitoring or inspecting this equipment.
 - (ii) A list of identification numbers for the equipment that is designated as difficult to monitor, an explanation of why the equipment is difficult to monitor, and the planned schedule for monitoring this equipment.
 - (iii) A list of identification numbers for connectors that are designated as unsafe to repair and an explanation why the connector is unsafe to repair.
- (8)
 - (i) A list of valves removed from and added to the process unit, as described in § 63.168(e)(1) of this subpart, if the net credits for removed valves is expected to be used.
 - (ii) A list of connectors removed from and added to the process unit, as described in § 63.174(i)(1) of this subpart, and documentation of the integrity of the weld for any removed connectors, as required in § 63.174(j) of this subpart. This is not required unless the net credits for removed connectors is expected to be used.
- (9)
 - (i) For batch process units that the owner or operator elects to monitor as provided under § 63.178(c) of this subpart, a list of equipment added to batch product process units since the last monitoring period required in § 63.178(c)(3)(ii) and (3)(iii) of this subpart.
 - (ii) Records demonstrating the proportion of the time during the calendar year the equipment is in use in a batch process that is subject to the provisions of this subpart. Examples of suitable documentation are records of time in use for individual pieces of equipment or average time in use for the process unit. These records are not required if the owner or operator does not adjust monitoring frequency by the time in use, as provided in § 63.178(c)(3)(iii) of this subpart.
- (10) For any leaks detected as specified in §§ 63.163 and 63.164; §§ 63.168 and 63.169; and §§ 63.172 through 63.174 of this subpart, a weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment.
- (11) For each pressure relief device subject to the pressure release management work practice standards in § 63.165(e), owners and operators must keep the records specified in paragraphs (b)(11)(i) through (iii) of this section in addition to the records specified in paragraph (f) of this section.
 - (i) Records of the prevention measures implemented as required in § 63.165(e)(3)(ii).

- (ii) Records of the number of releases during each calendar year. Keep these records for the current calendar year and the past 5 calendar years.
- (iii) For each release to the atmosphere, owners and operators must keep the records specified in paragraphs (b)(11)(iii)(A) through (D) of this section.
 - (A) The start and end time and date of each pressure release to the atmosphere.
 - (B) Records of any data, assumptions, and calculations used to estimate of the mass quantity of each organic HAP released during the event.
 - (C) Records of the root cause analysis and corrective action analysis conducted as required in § 63.165(e)(3)(iii), including an identification of the affected facility, a statement noting whether the event resulted from the same root cause(s) identified in a previous analysis and either a description of the recommended corrective action(s) or an explanation of why corrective action is not necessary under § 63.165(e)(7)(i).
 - (D) For any corrective action analysis for which implementation of corrective actions are required in § 63.165(e)(7), a description of the corrective action(s) completed within the first 45 days following the discharge and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates.
- (12) For equipment in ethylene oxide service, as defined in § 63.101, records of the percent ethylene oxide content of the process fluid and the method used to determine it.
- (c) For visual inspections of equipment subject to the provisions of this subpart (e.g., § 63.163(b)(3), § 63.163(e)(4)(i)), the owner or operator shall document that the inspection was conducted and the date of the inspection. The owner or operator shall maintain records as specified in paragraph (d) of this section for leaking equipment identified in this inspection, except as provided in paragraph (e) of this section. These records shall be retained for 2 years.
- (d) When each leak is detected as specified in §§ 63.163 and 63.164; §§ 63.168 and 63.169; and §§ 63.172 through 63.174 of this subpart, the following information shall be recorded and kept for 2 years:
 - (1) The instrument and the equipment identification number and the operator name, initials, or identification number.
 - (2) The date the leak was detected and the date of first attempt to repair the leak.
 - (3) The date of successful repair of the leak.
 - (4) Maximum instrument reading measured by Method 21 of 40 CFR part 60, appendix A after it is successfully repaired or determined to be nonreparable.
 - (5) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.
 - (i) The owner or operator may develop a written procedure that identifies the conditions that justify a delay of repair. The written procedures may be included as part of the startup/shutdown/malfunction plan, required by § 63.6(e)(3), for the source or may be part of a separate document that is maintained at the plant site. In such cases, reasons for delay of repair may be documented by citing the relevant sections of the written procedure. For each source as defined in § 63.101, and for each source as defined in § 63.191, on and after July 15, 2027, the

sentence "The written procedures may be included as part of the startup/shutdown/malfunction plan, required by § 63.6(e)(3), for the source or may be part of a separate document that is maintained at the plant site." in this paragraph no longer applies.

- (ii) If delay of repair was caused by depletion of stocked parts, there must be documentation that the spare parts were sufficiently stocked on-site before depletion and the reason for depletion.
- (6) Dates of process unit shutdowns that occur while the equipment is unrepaired.
- (7)
 - (i) Identification, either by list, location (area or grouping), or tagging of connectors that have been opened or otherwise had the seal broken since the last monitoring period required in § 63.174(b) of this subpart, as described in § 63.174(c)(1) of this subpart, unless the owner or operator elects to comply with the provisions of § 63.174(c)(1)(ii) of this subpart.
 - (ii) The date and results of monitoring as required in § 63.174(c) of this subpart. If identification of connectors that have been opened or otherwise had the seal broken is made by location under paragraph (d)(7)(i) of this section, then all connectors within the designated location shall be monitored.
- (8) The date and results of the monitoring required in § 63.178(c)(3)(i) of this subpart for equipment added to a batch process unit since the last monitoring period required in § 63.178 (c)(3)(ii) and (c)(3)(iii) of this subpart. If no leaking equipment is found in this monitoring, the owner or operator shall record that the inspection was performed. Records of the actual monitoring results are not required.
- (9) Copies of the periodic reports as specified in § 63.182(d) of this subpart, if records are not maintained on a computerized database capable of generating summary reports from the records.
- (e) The owner or operator of a batch product process who elects to pressure test the batch product process equipment train to demonstrate compliance with this subpart is exempt from the requirements of paragraphs (b), (c), (d), and (f) of this section. Instead, the owner or operator shall maintain records of the following information:
 - (1) The identification of each product, or product code, produced during the calendar year. It is not necessary to identify individual items of equipment in a batch product process equipment train.
 - (2) [Reserved]
 - (3) Physical tagging of the equipment to identify that it is in organic HAP service and subject to the provisions of this subpart is not required. Equipment in a batch product process subject to the provisions of this subpart may be identified on a plant site plan, in log entries, or by other appropriate methods.
 - (4) The dates of each pressure test required in § 63.178(b) of this subpart, the test pressure, and the pressure drop observed during the test.
 - (5) Records of any visible, audible, or olfactory evidence of fluid loss.
 - (6) When a batch product process equipment train does not pass two consecutive pressure tests, the following information shall be recorded in a log and kept for 2 years:
 - (i) The date of each pressure test and the date of each leak repair attempt.

- (ii) Repair methods applied in each attempt to repair the leak.
 - (iii) The reason for the delay of repair.
 - (iv) The expected date for delivery of the replacement equipment and the actual date of delivery of the replacement equipment.
 - (v) The date of successful repair.
- (f) The dates and results of each compliance test required for compressors subject to the provisions in § 63.164(i) and the dates and results of the monitoring following a pressure release for each pressure relief device subject to the provisions in §§ 63.165 (a) and (b) of this subpart. The results shall include:
 - (1) The background level measured during each compliance test.
 - (2) The maximum instrument reading measured at each piece of equipment during each compliance test.
- (g) The owner or operator shall maintain records of the information specified in paragraphs (g)(1) through (g)(3) of this section for closed-vent systems and control devices subject to the provisions of § 63.172 of this subpart. The records specified in paragraph (g)(1) of this section shall be retained for the life of the equipment. The records specified in paragraphs (g)(2) and (g)(3) of this section shall be retained for 2 years.
 - (1) The design specifications and performance demonstrations specified in paragraphs (g)(1)(i) through (g)(1)(iv) of this section.
 - (i) Detailed schematics, design specifications of the control device, and piping and instrumentation diagrams.
 - (ii) The dates and descriptions of any changes in the design specifications.
 - (iii) Except as specified in paragraph (a) of § 63.108, the flare design (i.e., steam-assisted, air-assisted, or non-assisted) and the results of the compliance demonstration required by § 63.11(b).
 - (iv) A description of the parameter or parameters monitored, as required in § 63.172(e) of this subpart, to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring.
 - (2) Records of operation of closed-vent systems and control devices, as specified in paragraphs (g)(2)(i) through (g)(2)(iii) of this section.
 - (i) Except as specified in paragraph (a) of § 63.108, dates and durations when the closed-vent systems and control devices required in §§ 63.163 through 63.166, and § 63.170 are not operated as designed as indicated by the monitored parameters, including periods when a flare pilot light system does not have a flame.
 - (ii) Dates and durations during which the monitoring system or monitoring device is inoperative.
 - (iii) Dates and durations of start-ups and shutdowns of control devices required in §§ 63.163 through 63.166, and § 63.170 of this subpart.
 - (3) Records of inspections of closed-vent systems subject to the provisions of § 63.172, as specified in paragraphs (g)(3)(i) through (iii) of this section.

- (i) For each inspection conducted in accordance with the provisions of § 63.172(f)(1) or (f)(2) of this subpart during which no leaks were detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.
 - (ii) For each inspection conducted in accordance with the provisions of § 63.172(f)(1) or (f)(2) of this subpart during which leaks were detected, the information specified in paragraph (d) of this section shall be recorded.
 - (iii) For each source as defined in § 63.101, and for each source as defined in § 63.191, beginning no later than the compliance dates specified in § 63.100(k)(10), the owner or operator must comply with this paragraph in addition to the requirements in paragraphs (g)(3)(i) and (ii) of this section. For each flow event from a bypass line subject to the requirements in § 63.172(j), the owner or operator must maintain records sufficient to determine whether or not the detected flow included flow requiring control. For each flow event from a bypass line requiring control that is released either directly to the atmosphere or to a control device not meeting the requirements in this subpart, the owner or operator must include an estimate of the volume of gas, the concentration of organic HAP in the gas and the resulting emissions of organic HAP that bypassed the control device using process knowledge and engineering estimates.
- (h) Each owner or operator of a process unit subject to the requirements of §§ 63.175 and 63.176 of this subpart shall maintain the records specified in paragraphs (h)(1) through (h)(9) of this section for the period of the quality improvement program for the process unit.
- (1) For owners or operators who elect to use a reasonable further progress quality improvement program, as specified in § 63.175(d) of this subpart:
 - (i) All data required in § 63.175(d)(2) of this subpart.
 - (ii) The percent leaking valves observed each quarter and the rolling average percent reduction observed in each quarter.
 - (iii) The beginning and ending dates while meeting the requirements of § 63.175(d) of this subpart.
 - (2) For owners or operators who elect to use a quality improvement program of technology review and improvement, as specified in § 63.175(e) of this subpart:
 - (i) All data required in § 63.175(e)(2) of this subpart.
 - (ii) The percent leaking valves observed each quarter.
 - (iii) Documentation of all inspections conducted under the requirements of § 63.175(e)(4) of this subpart, and any recommendations for design or specification changes to reduce leak frequency.
 - (iv) The beginning and ending dates while meeting the requirements of § 63.175(e) of this subpart.
 - (3) For owners or operators subject to the requirements of the pump quality improvement program as specified in § 63.176 of this subpart:
 - (i) All data required in § 63.176(d)(2) of this subpart.
 - (ii) The rolling average percent leaking pumps.

- (iii) Documentation of all inspections conducted under the requirements of § 63.176(d)(4) of this subpart, and any recommendations for design or specification changes to reduce leak frequency.
 - (iv) The beginning and ending dates while meeting the requirements of § 63.176(d) of this subpart.
- (4) If a leak is not repaired within 15 calendar days after discovery of the leak, the reason for the delay and the expected date of successful repair.
- (5) Records of all analyses required in §§ 63.175(e) and 63.176(d) of this subpart. The records will include the following:
 - (i) A list identifying areas associated with poorer than average performance and the associated service characteristics of the stream, the operating conditions and maintenance practices.
 - (ii) The reasons for rejecting specific candidate superior emission performing valve or pump technology from performance trials.
 - (iii) The list of candidate superior emission performing valve or pump technologies, and documentation of the performance trial program items required under §§ 63.175(e)(6)(iii) and 63.176(d)(6)(iii) of this subpart.
 - (iv) The beginning date and duration of performance trials of each candidate superior emission performing technology.
- (6) All records documenting the quality assurance program for valves or pumps as specified in §§ 63.175(e)(7) and 63.176(d)(7) of this subpart.
- (7) Records indicating that all valves or pumps replaced or modified during the period of the quality improvement program are in compliance with the quality assurance requirements in § 63.175(e)(7) and § 63.176(d)(7) of this subpart.
- (8) Records documenting compliance with the 20 percent or greater annual replacement rate for pumps as specified in § 63.176(d)(8) of this subpart.
- (9) Information and data to show the corporation has fewer than 100 employees, including employees providing professional and technical contracted services.
- (i) The owner or operator of equipment in heavy liquid service shall comply with the requirements of either paragraph (i)(1) or (i)(2) of this section, as provided in paragraph (i)(3) of this section.
 - (1) Retain information, data, and analyses used to determine that a piece of equipment is in heavy liquid service.
 - (2) When requested by the Administrator, demonstrate that the piece of equipment or process is in heavy liquid service.
 - (3) A determination or demonstration that a piece of equipment or process is in heavy liquid service shall include an analysis or demonstration that the process fluids do not meet the definition of "in light liquid service." Examples of information that could document this include, but are not limited to, records of chemicals purchased for the process, analyses of process stream composition, engineering calculations, or process knowledge.

- (j) Identification, either by list, location (area or group) of equipment in organic HAP service less than 300 hours per year within a process unit subject to the provisions of this subpart under § 63.160 of this subpart.
- (k) Owners and operators choosing to comply with the requirements of § 63.179 of this subpart shall maintain the following records:
 - (1) Identification of the process unit(s) and the organic HAP's they handle.
 - (2) A schematic of the process unit, enclosure, and closed-vent system.
 - (3) A description of the system used to create a negative pressure in the enclosure to ensure that all emissions are routed to the control device.
 - (1) For fenceline monitoring systems subject to § 63.184, each owner or operator must keep the records specified in paragraphs (l)(1) through (11) of this section.
 - (1) Coordinates of all passive tube and canister monitors, including co-located samplers and field blanks, and if applicable, the meteorological station. The owner or operator shall determine the coordinates using an instrument with an accuracy of at least 3 meters. The coordinates shall be in decimal degrees with at least five decimal places.
 - (2) The start and stop times and dates for each sample, as well as the tube or canister identifying information.
 - (3) Sampling period average temperature and barometric pressure measurements.
 - (4) For each outlier determined in accordance with Section 9.2 of Method 325A of appendix A of this part the sampler location of and the concentration of the outlier and the evidence used to conclude that the result is an outlier. The evidence must include documentation of accidental contamination by the sample handler. High sample results attributed to unknown causes are not outliers if there is no evidence of sample contamination and the sample does not meet the requirements in Section 9.2 of Method 325A of appendix A of this part.
 - (5) For samples that will be adjusted for offsite impacts, the location of and the concentration measured simultaneously by the additional sampler(s), and the perimeter samplers to which it applies.
 - (6) Individual sample results, the calculated Δc for each monitored compound for each sampling period and the two samples used to determine it, whether correction for offsite impacts was used, and the annual average Δc for each monitored compound calculated after each sampling period.
 - (7) Method detection limit for each sample, including co-located samples and blanks.
 - (8) Documentation of the root cause analysis and any resulting corrective action taken each time an action level is exceeded, including the dates the root cause analysis was initiated and the resulting correction action(s) were taken. If real-time sampling techniques are required under § 63.184(e)(3)(B), the location of the real-time monitors for each 48-hour period.
 - (9) Any corrective action plan developed under § 63.184(f).
 - (10) Other records as required by Methods 325A, 325B, and 327 of appendix A of this part.

- (11) If monitoring is conducted using canisters in accordance with § 63.184(b), if a near-field source correction is used as provided in § 63.184(g), or if an alternative test method is used that provides time-resolved measurements, records of hourly meteorological data, including temperature, barometric pressure, wind speed and wind direction, calculated daily unit vector wind direction and daily sigma theta, and other records specified in the site-specific monitoring plan.

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§ 63.182 Reporting requirements.

- (a) Each owner or operator of a source subject to this subpart shall submit the reports listed in paragraphs (a)(1) through (a)(5) of this section. Owners or operators requesting an extension of compliance shall also submit the report listed in paragraph (a)(6) of this section.
- (1) An Initial Notification described in paragraph (b) of this section, and
 - (2) A Notification of Compliance Status described in paragraph (c) of this section,
 - (3) Periodic Reports described in paragraph (d) of this section,
 - (4) Fenceline Monitoring Reports described in paragraph (e) of this section, and
 - (5) [Reserved]
 - (6) Pursuant to section 112(i)(3)(B) of the Act, an owner or operator may request an extension allowing an existing source up to 1 additional year beyond the compliance date specified in the subpart that references this subpart.
 - (i) For purposes of this subpart, a request for an extension shall be submitted to the operating permit authority as part of the operating permit application. If the State in which the source is located does not have an approved operating permit program, a request for an extension shall be submitted to the Administrator as a separate submittal. The dates specified in § 63.6(i) of subpart A of this part for submittal of requests for extensions shall not apply to sources subject to this subpart.
 - (ii) A request for an extension of compliance must include the data described in § 63.6(i)(6)(i) (A), (B), and (D) of subpart A of this part.
 - (iii) The requirements in § 63.6(i)(8) through (i)(14) of subpart A of this part will govern the review and approval of requests for extensions of compliance with this subpart.
- (b) Each owner or operator of an existing or new source subject to the provisions of this subpart shall submit a written Initial Notification to the Administrator, containing the information described in paragraph (b)(1), according to the schedule in paragraph (b)(2) of this section. The Initial Notification provisions in § 63.9(b)(1) through (b)(3) of subpart A of this part shall not apply to owners or operators of sources subject to this subpart.
- (1) The Initial Notification shall include the following information:
 - (i) The name and address of the owner or operator;
 - (ii) The address (physical location) of the affected source;
 - (iii) An identification of the chemical manufacturing processes subject to this subpart; and

- (iv) A statement of whether the source can achieve compliance by the applicable compliance date specified in the subpart in 40 CFR part 63 that references this subpart.
- (2) The Initial Notification shall be submitted according to the schedule in paragraph (b)(2)(i), (b)(2)(ii), or (b)(2)(iii) of this section, as applicable.
 - (i) For an existing source, the Initial Notification shall be submitted within 120 calendar days after the date of promulgation or no later than 120 calendar days after the source becomes subject to this subpart, whichever is later.
 - (ii) For a new source that has an initial start-up 90 days after the date of promulgation of this subpart or later, the application for approval of construction or reconstruction required by § 63.5(d) of subpart A of this part shall be submitted in lieu of the Initial Notification. The application shall be submitted as soon as practicable before the construction or reconstruction is planned to commence (but it need not be sooner than 90 days after the date of promulgation of the subpart that references this subpart). For a new source that reclassifies to major source status after January 19, 2021 and greater than 90 days after the initial start-up, the source shall submit the initial notification required by § 63.9(b) no later than 120 days after the source becomes subject to this subpart.
 - (iii) For a new source that has an initial start-up prior to 90 days after the date of promulgation of the applicable subpart, the Initial Notification shall be submitted within 90 days after the date of promulgation of the subpart that references this subpart, or no later than 120 calendar days after the source becomes subject to this subpart, whichever is later.
- (c) Each owner or operator of a source subject to this subpart shall submit a Notification of Compliance Status within 90 days after the compliance dates specified in the subpart in this part 63 that references this subpart, except as provided in paragraph (c)(4) of this section. The owner or operator shall also submit a supplement to the Notification of Compliance Status as specified in paragraphs (c)(5) and (6) of this section, if applicable.
 - (1) The notification shall provide the information listed in paragraphs (c)(1)(i) through (c)(1)(iv) of this section for each process unit subject to the requirements of § 63.163 through § 63.174 of this subpart.
 - (i) Process unit identification.
 - (ii) Number of each equipment type (e.g., valves, pumps) excluding equipment in vacuum service.
 - (iii) Method of compliance with the standard (for example, “monthly leak detection and repair” or “equipped with dual mechanical seals”).
 - (iv) Planned schedule for each phase of the requirements in § 63.163 and § 63.168 of this subpart.
 - (2) The notification shall provide the information listed in paragraphs (c)(2)(i) and (c)(2)(ii) of this section for each process unit subject to the requirements of § 63.178(b) of this subpart.
 - (i) Batch products or product codes subject to the provisions of this subpart, and
 - (ii) Planned schedule for pressure testing when equipment is configured for production of products subject to the provisions of this subpart.
 - (3) The notification shall provide the information listed in paragraphs (c)(3)(i) and (c)(3)(ii) of this section for each process unit subject to the requirements in § 63.179 of this subpart.

- (i) Process unit identification.
 - (ii) A description of the system used to create a negative pressure in the enclosure and the control device used to comply with the requirements of § 63.172 of this subpart.
- (4) For existing sources subject to subpart F of this part, the Notification of Compliance Status shall be submitted for the group of process units with the earliest compliance date specified in § 63.100(k) of subpart F of this part, by no later than 90 days after the compliance date for that group. The Notification of Compliance Status for each subsequent group shall be submitted as part of the first periodic report that is due not less than 90 days after the compliance date for that group.
- (5) For pressure relief devices subject to the pressure release management work practice standards in § 63.165(e), owners and operators must also submit the information listed in paragraphs (c)(5)(i) and (ii) of this section in a supplement to the Notification of Compliance Status within 150 days after the first applicable compliance date for pressure relief device monitoring.
 - (i) A description of the monitoring system to be implemented, including the relief devices and process parameters to be monitored, and a description of the alarms or other methods by which operators will be notified of a pressure release.
 - (ii) A description of the prevention measures to be implemented for each affected pressure relief device.
- (6) For equipment that are in ethylene oxide service, as defined in § 63.101, owners and operators must also submit the information in this paragraph in a supplement to the Notification of Compliance Status within 150 days after the first applicable compliance date. The supplement to the Notification of Compliance Status must identify all equipment that are in ethylene oxide service, and include the percent ethylene oxide content of the process fluid and the method used to determine it.
- (d) The owner or operator of a source subject to this subpart shall submit Periodic Reports. On and after July 15, 2027 or once the reporting template for this subpart has been available on the CEDRI website for 1 year, whichever date is later, owners and operators must submit all subsequent reports following the procedure specified in § 63.9(k), except any medium submitted through mail must be sent to the attention of the Hazardous Organic Chemical Manufacturing Sector Lead. Owners and operators must use the appropriate electronic report template on the CEDRI website (<https://www.epa.gov/electronic-reporting-air-emissions/cedri>) for this subpart. The date report templates become available will be listed on the CEDRI website. Unless the Administrator or delegated state agency or other authority has approved a different schedule for submission of reports under § 63.9(i) and § 63.10(a), the report must be submitted by the deadline specified in this subpart, regardless of the method in which the report is submitted. All Periodic Reports must include the following general information: company name, address (including county), and beginning and ending dates of the reporting period.
 - (1) A report containing the information in paragraphs (d)(2), (d)(3), and (d)(4) of this section shall be submitted semiannually starting 6 months after the Notification of Compliance Status, as required in paragraph (c) of this section. The first periodic report shall cover the first 6 months after the compliance date specified in § 63.100(k)(3) of subpart F. Each subsequent periodic report shall cover the 6 month period following the preceding period.
 - (2) For each process unit complying with the provisions of § 63.163 through § 63.174, the summary information listed in paragraphs (d)(2)(i) through (xix) of this paragraph for each monitoring period during the 6-month period.

- (i) The number of valves for which leaks were detected as described in § 63.168(b) of this subpart, the percent leakers, and the total number of valves monitored;
- (ii) The number of valves for which leaks were not repaired as required in § 63.168(f) of this subpart, identifying the number of those that are determined nonreparable;
- (iii) The number of pumps for which leaks were detected as described in § 63.163(b) of this subpart, the percent leakers, and the total number of pumps monitored;
- (iv) The number of pumps for which leaks were not repaired as required in § 63.163(c) of this subpart;
- (v) The number of compressors for which leaks were detected as described in § 63.164(f) of this subpart;
- (vi) The number of compressors for which leaks were not repaired as required in § 63.164(g) of this subpart;
- (vii) The number of agitators for which leaks were detected as described in § 63.173(a) and (b) of this subpart;
- (viii) The number of agitators for which leaks were not repaired as required in § 63.173(c) of this subpart;
- (ix) The number of connectors for which leaks were detected as described in § 63.174(a) of this subpart, the percent of connectors leaking, and the total number of connectors monitored;
- (x) [Reserved]
- (xi) The number of connectors for which leaks were not repaired as required in § 63.174(d) of this subpart, identifying the number of those that are determined nonreparable;
- (xii) [Reserved]
- (xiii) The facts that explain any delay of repairs and, where appropriate, why a process unit shutdown was technically infeasible.
- (xiv) The results of all monitoring to show compliance with §§ 63.164(i), 63.165(a), and 63.172(f) of this subpart conducted within the semiannual reporting period.
- (xv) If applicable, the initiation of a monthly monitoring program under § 63.168(d)(1)(i) of this subpart, or a quality improvement program under either §§ 63.175 or 63.176 of this subpart.
- (xvi) If applicable, notification of a change in connector monitoring alternatives as described in § 63.174(c)(1) of this subpart.
- (xvii) If applicable, the compliance option that has been selected under § 63.172(n).
- (xviii) Compliance reports for pressure relief devices subject to the requirements § 63.165(e) must include the information specified in paragraphs (d)(2)(xviii)(A) through (C) of this section.
 - (A) For pressure relief devices in organic HAP gas or vapor service, pursuant to § 63.165(e)(1), report the instrument readings and dates for all readings of 500 ppm or greater.
 - (B) For pressure relief devices in organic HAP gas or vapor service subject to § 63.165(e)(2), report the instrument readings and dates of instrument monitoring conducted.

- (C) For pressure relief devices in organic HAP service subject to § 63.165(e)(3), report each pressure release to the atmosphere, including pressure relief device identification name or number, the start date, start time, and duration (in minutes) of the pressure release; an estimate of the mass quantity in pounds of each organic HAP released; the results of any root cause analysis and corrective action analysis completed during the reporting period, including the corrective actions implemented during the reporting period; and, if applicable, the implementation schedule for planned corrective actions to be implemented subsequent to the reporting period.
- (ix) For each source as defined in § 63.101, and for each source as defined in § 63.191, beginning no later than the compliance dates specified in § 63.100(k)(10), the owner or operator must comply with this paragraph in addition to the requirements in paragraphs (d)(2)(i) through (d)(2)(xviii) of this section. For bypass lines subject to the requirements in § 63.172(j), the Periodic Report must include the start date, start time, duration in hours, estimate of the volume of gas in standard cubic feet, the concentration of organic HAP in the gas in parts per million by volume and the resulting mass emissions of organic HAP in pounds that bypass a control device. For periods when the flow indicator is not operating, report the start date, start time, and duration in hours.
- (3) For owners or operators electing to meet the requirements of § 63.178(b) of this subpart, the report shall include the information listed in paragraphs (i) through (v) of this paragraph for each process unit.
 - (i) Batch product process equipment train identification;
 - (ii) The number of pressure tests conducted;
 - (iii) The number of pressure tests where the equipment train failed the pressure test;
 - (iv) The facts that explain any delay of repairs; and
 - (v) The results of all monitoring to determine compliance with § 63.172(f) of this subpart.
- (4) The information listed in paragraph (c) of this section for the Notification of Compliance Status for process units with later compliance dates. Any revisions to items reported in earlier Notification of Compliance Status, if the method of compliance has changed since the last report.
- (e) For fenceline monitoring systems subject to § 63.184, each owner or operator must submit Fenceline Monitoring Reports on a quarterly basis using the appropriate electronic report template on the CEDRI website (<https://www.epa.gov/electronic-reporting-air-emissions/cedri>) for this subpart and following the procedure specified in § 63.9(k), except any medium submitted through mail must be sent to the attention of the Hazardous Organic Chemical Manufacturing Sector Lead. The first quarterly report must be submitted once the owner or operator has obtained 12 months of data. The first quarterly report must cover the period beginning on the compliance date that is specified in § 63.100(k)(12) and ending on March 31, June 30, September 30 or December 31, whichever date is the first date that occurs after the owner or operator has obtained 12 months of data (i.e., the first quarterly report will contain between 12 and 15 months of data). Each subsequent quarterly report must cover one of the following reporting periods: Quarter 1 from January 1 through March 31; Quarter 2 from April 1 through June 30; Quarter 3 from July 1 through September 30; and Quarter 4 from October 1 through December 31. Each quarterly report must be electronically submitted no later than 45 calendar days following the end of the reporting period.

- (1) Facility name and address (including the county).
- (2) Year and reporting quarter (i.e., Quarter 1, Quarter 2, Quarter 3, or Quarter 4).
- (3) For each passive tube or canister monitor: The latitude and longitude location coordinates; the sampler name; and identification of the type of sampler (i.e., regular monitor, extra monitor, duplicate, field blank, inactive). Coordinates must be in decimal degrees with at least five decimal places.
- (4) The beginning and ending dates for each sampling period.
- (5) Individual sample results for each monitored compound, reported in units of $\mu\text{g}/\text{m}^3$, for each monitor for each sampling period that ends during the reporting period. Results below the method detection limit must be flagged as below the detection limit and reported at the method detection limit.
- (6) Data flags for each outlier determined in accordance with Section 9.2 of Method 325A of appendix A of this part. For each outlier, the owner or operator must submit the individual sample result of the outlier, as well as the evidence used to conclude that the result is an outlier. The evidence must include documentation of accidental contamination by the sample handler. High sample results attributed to unknown causes are not outliers if there is no evidence of sample contamination and the sample does not meet the requirements in Section 9.2 of Method 325A of appendix A of this part.
- (7) The concentration difference (Δc) for each monitored compound for each sampling period and the annual average Δc for each monitored compound for each sampling period.
- (8) Indication of whether the owner or operator was required to develop a corrective action plan under § 63.184(f).
- (9) Data flags for each monitor for each analyte that was skipped for the sampling period, if the owner or operator uses an alternative sampling frequency under § 63.184(a)(3)(iii) or § 63.184(b)(2)(iii).

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§ 63.183 Implementation and enforcement.

- (a) This subpart can be implemented and enforced by the U.S. EPA, or a delegated authority such as the applicable State, local, or Tribal agency. If the U.S. EPA Administrator has delegated authority to a State, local, or Tribal agency, then that agency, in addition to the U.S. EPA, has the authority to implement and enforce this subpart. Contact the applicable U.S. EPA Regional Office to find out if implementation and enforcement of this subpart is delegated to a State, local, or Tribal agency.
- (b) In delegating implementation and enforcement authority of this subpart to a State, local, or Tribal agency under subpart E of this part, the authorities contained in paragraph (c) of this section are retained by the Administrator of U.S. EPA and cannot be transferred to the State, local, or Tribal agency.
- (c) The authorities that cannot be delegated to State, local, or Tribal agencies are as specified in paragraphs (c)(1) through (5) of this section.
 - (1) Approval of alternatives to the requirements in §§ 63.160, 63.162 through 63.176, 63.178 through 63.179. Follow the applicable procedures of § 63.177 to request an alternative means of emission limitation for batch processes and enclosed-vented process units. Where these standards reference

another subpart, the cited provisions will be delegated according to the delegation provisions of the referenced subpart. Where these standards reference another subpart and modify the requirements, the requirements shall be modified as described in this subpart. Delegation of the modified requirements will also occur according to the delegation provisions of the referenced subpart.

- (2) Approval of major alternatives to test methods under § 63.7(e)(2)(ii) and (f), as defined in § 63.90, and as required in this subpart.
- (3) Approval of major alternatives to monitoring under § 63.8(f), as defined in § 63.90, and as required in this subpart.
- (4) Approval of major alternatives to recordkeeping and reporting under § 63.10(f), as defined in § 63.90, and as required in this subpart.
- (5) Approval of an alternative to any electronic reporting to the EPA required by this subpart.

[68 FR 37345, June 23, 2003, as amended at 89 FR 43228, May 16, 2024]

§ 63.184 Fenceline monitoring provisions.

For each source as defined in § 63.101, and for each source as defined in § 63.191, beginning no later than the compliance dates specified in § 63.100(k)(12), the owner or operator must conduct sampling along the facility property boundary and analyze the samples in accordance with paragraphs (a) through (i) of this section. Sampling of benzene, 1,3-butadiene, chloroprene, and ethylene dichloride must be conducted in accordance with paragraph (a) of this section. Sampling of ethylene oxide and vinyl chloride must be conducted in accordance with paragraph (b) of this section. Paragraphs (c) through (i) of this section apply for any compound required to be sampled.

- (a) The owner or operator must conduct sampling along the facility property boundary and analyze the samples in accordance with Methods 325A and 325B of appendix A to this part and paragraphs (a)(1) through (3) of this section. The monitoring perimeter may be located inside the facility, away from the facility property boundary. However, the monitoring perimeter must encompass all potential sources of the target analyte(s) specified in paragraph (a)(1) of this section that are located within the facility's property boundary.
 - (1) The owner or operator must monitor the target analyte(s), as specified in paragraphs (a)(1)(i) through (iv) of this section. The owner or operator must follow the procedure in Section 9.6 of Method 325B of appendix A to this part to determine the detection limit of benzene, 1,3-butadiene, chloroprene, and ethylene dichloride for each sampler used to collect samples and blanks.
 - (i) If an affected source uses, produces, stores, or emits benzene, the owner or operator must include benzene as a target analyte.
 - (ii) If an affected source uses, produces, stores, or emits 1,3-butadiene, the owner or operator must include 1,3-butadiene as a target analyte.
 - (iii) If an affected source uses, produces, stores, or emits chloroprene, the owner or operator must include chloroprene as a target analyte.
 - (iv) If an affected source uses, produces, stores, or emits ethylene dichloride, the owner or operator must include ethylene dichloride as a target analyte.
 - (2) The owner or operator must determine passive monitor locations in accordance with Section 8.2 of Method 325A of appendix A to this part.

- (i) As it pertains to this subpart, known sources of VOCs, as used in Section 8.2.1.3 in Method 325A of appendix A to this part for siting passive monitors, means a wastewater treatment unit, process unit, or any emission source requiring control according to the requirements of this subpart, including marine vessel loading operations. For marine vessel loading operations, one passive monitor should be sited on the shoreline adjacent to the dock. For this subpart, an additional monitor is not required if the only emission sources within 50 meters of the monitoring boundary are equipment leak sources satisfying all of the conditions in paragraphs (a)(2)(i)(A) through (C) of this section. If a leak is found, it must be repaired no later than 15 calendar days after it is detected with no provisions for delay of repair. If a repair is not completed within 15 calendar days, the additional passive monitor specified in Section 8.2.1.3 in Method 325A of appendix A to this part must be used.
 - (A) The equipment leak sources in organic HAP service within 50 meters of the monitoring boundary are limited to valves, pumps, connectors, sampling connections, and open-ended lines. If compressors, pressure relief devices, or agitators in organic HAP service are present within 50 meters of the monitoring boundary, the additional passive monitoring location specified in Section 8.2.1.3 in Method 325A of appendix A to this part must be used.
 - (B) All equipment leak sources in gas or light liquid service (and in organic HAP service), including valves, pumps, connectors, sampling connections and open-ended lines, must be monitored using Method 21 of appendix A-7 to 40 CFR part 60 no less frequently than quarterly with no provisions for skip period monitoring, or according to the provisions of § 63.11(c) Alternative Work practice for monitoring equipment for leaks. For the purpose of this provision, a leak is detected if the instrument reading equals or exceeds the applicable limits in paragraphs (a)(2)(i)(B)(1) through (5) of this section:
 - (1) For valves, pumps or connectors at an existing source, an instrument reading of 10,000 ppmv.
 - (2) For valves or connectors at a new source, an instrument reading of 500 ppmv.
 - (3) For pumps at a new source, an instrument reading of 2,000 ppmv.
 - (4) For sampling connections or open-ended lines, an instrument reading of 500 ppmv above background.
 - (5) For equipment monitored according to the Alternative Work practice for monitoring equipment for leaks, the leak definitions contained in § 63.11(c)(6)(i) through (iii).
 - (C) All equipment leak sources in organic HAP service, including sources in gas, light liquid and heavy liquid service, must be inspected using visual, audible, olfactory, or any other detection method at least monthly. A leak is detected if the inspection identifies a potential leak to the atmosphere or if there are indications of liquids dripping.
- (ii) If there are 19 or fewer monitoring locations, the owner or operator must collect at least one co-located duplicate sample per sampling period and at least one field blank per sampling period. If there are 20 or more monitoring locations, the owner or operator must collect at least two co-located duplicate samples per sampling period and at least one field blank per sampling period. The co-located duplicates may be collected at any of the perimeter sampling.

- (iii) Samplers are not required to be placed along internal roads, waterways, or other right of ways that may bisect the facility. If a facility is bounded by a waterway on one or more sides, the shoreline is considered the facility property boundary.
- (3) The owner or operator must use a sampling period and sampling frequency as specified in paragraphs (a)(3)(i) through (iii) of this section.
- (i) **Sampling period.** A 14-day sampling period must be used, unless a shorter sampling period is determined to be necessary under paragraph (e) or (g) of this section. A sampling period is defined as the period during which sampling tube is deployed at a specific sampling location with the diffusive sampling end cap in-place and does not include the time required to analyze the sample. For the purpose of this subpart, a 14-day sampling period may be no shorter than 13 calendar days and no longer than 15 calendar days, but the routine sampling period must be 14 calendar days.
 - (ii) **Base sampling frequency.** Except as provided in paragraph (a)(3)(iii) of this section, the frequency of sample collection must be once each contiguous 14-day sampling period, such that the beginning of the next 14-day sampling period begins immediately upon the completion of the previous 14-day sampling period.
 - (iii) **Alternative sampling frequency for burden reduction.** When an individual monitor consistently achieves results for a particular analyte at or below the level specified in paragraph (a)(4) of this section, the owner or operator may elect to use the applicable minimum sampling frequency specified in paragraphs (a)(3)(iii)(A) through (E) of this section for that monitoring site for that analyte. When calculating Δc for the monitoring period when using this alternative for burden reduction, use zero for the lowest sampling result for each monitoring period where one or more samples was not taken and/or analyzed for the analyte(s) that qualifies for this alternative sampling frequency. This alternative for burden reduction is determined on an analyte specific basis. If an owner or operator is not required to sample for a particular analyte for a particular monitoring site in accordance with this paragraph (a)(3)(iii), the owner or operator must still sample for any other analytes required by paragraph (a)(1) of this section at the frequency specified in paragraph (a)(3)(ii) of this section, unless the other analyte(s) also qualifies for this alternative for burden reduction.
 - (A) For the analyte of interest, if every sample at a monitoring site is at or below the level specified in paragraph (a)(4) of this section for 2 years (52 consecutive samples), every other sampling period can be skipped for that analyte for that monitoring site, i.e., sampling will occur approximately once per month.
 - (B) For the analyte of interest, if every sample at a monitoring site that is monitored at the frequency specified in paragraph (a)(3)(iii)(A) of this section is at or below the level specified in paragraph (a)(4) of this section for 2 years (i.e., 26 consecutive "monthly" samples), five 14-day sampling periods can be skipped for that analyte for that monitoring site following each period of sampling, i.e., sampling will occur approximately once per quarter.
 - (C) For the analyte of interest, if every sample at a monitoring site that is monitored at the frequency specified in paragraph (a)(3)(iii)(B) of this section is at or below the level specified in paragraph (a)(4) of this section for 2 years (i.e., 8 consecutive quarterly samples), twelve 14-day sampling periods can be skipped for that analyte for that monitoring site following each period of sampling, i.e., sampling will occur twice a year.

- (D) For the analyte of interest, if every sample at a monitoring site that is monitored at the frequency specified in paragraph (a)(3)(iii)(C) of this section is at or below the level specified in paragraph (a)(4) of this section for 2 years (*i.e.*, 4 consecutive semiannual samples), only one sample per year is required for that analyte for that monitoring site. For yearly sampling, samples shall occur at least 10 months but no more than 14 months apart.
 - (E) If at any time a sample for a monitoring site that is monitored for the analyte at the frequency specified in paragraph (a)(3)(iii)(A) through (D) of this section returns a result for the analyte that is above the level specified in paragraph (a)(4) of this section, the sampling site must return to the original sampling requirements for the analyte of contiguous 14-day sampling periods with no skip periods for one quarter (six 14-day sampling periods). If every sample collected for the analyte during this quarter is at or below the level specified in paragraph (a)(4) of this section, the owner or operator may revert back to the reduced monitoring schedule applicable for that analyte for that monitoring site prior to the sample reading exceeding the level specified in paragraph (a)(4) of this section. If any sample collected for the analyte during this quarter is above the level specified in paragraph (a)(4) of this section, that monitoring site must return to the original sampling requirements for that analyte of contiguous 14-day sampling periods with no skip periods for a minimum of two years. The burden reduction requirements can be used again for that analyte for that monitoring site once the requirements of paragraph (a)(3)(iii)(A) of this section are met again, *i.e.*, after 52 contiguous 14-day samples with no results above the level specified in paragraph (a)(4) of this section.
- (4) To use the alternative sampling frequency outlined in paragraph (a)(3) of this section, an individual monitor must consistently achieve results for the analyte at or below the level specified in paragraphs (a)(4)(i) through (iii) of this section.
- (i) For benzene, the results must be consistently at or below 0.9 $\mu\text{g}/\text{m}^3$.
 - (ii) For 1,3-butadiene, the results must be consistently at or below 0.3 $\mu\text{g}/\text{m}^3$.
 - (iii) For ethylene dichloride, the results must be consistently at or below 0.4 $\mu\text{g}/\text{m}^3$.
- (b) The owner or operator must conduct sampling along the facility property boundary and analyze the samples in accordance with Method 327 of appendix A to this part and paragraphs (b)(1) through (3) of this section.
- (1) The owner or operator must monitor the target analyte(s), as specified in paragraphs (b)(1)(i) and (ii) of this section.
- (i) If an affected source uses, produces, stores, or emits ethylene oxide, the owner or operator must include ethylene oxide as a target analyte.
 - (ii) If an affected source uses, produces, stores, or emits vinyl chloride, the owner or operator must include vinyl chloride as a target analyte.
- (2) The owner or operator must use a sampling period and sampling frequency as specified in paragraphs (b)(2)(i) and (ii) of this section.
- (i) **Sampling period.** A 24-hour sampling period must be used, unless a shorter sampling period is determined to be necessary under paragraph (e) or (g) of this section. A sampling period is defined as the period during which the canister is deployed at a specific sampling location and

actively sampling and does not include the time required to analyze the sample. For the purpose of this subpart, a 24-hour sampling period may be no shorter than 23 hours and no longer than 25 hours.

- (ii) **Base sampling frequency.** Except as provided in paragraph (b)(2)(iii) of this section, the frequency of sample collection must be once every 5 calendar days, such that the beginning of each sampling period begins approximately 96 hours ($\pm$ 24 hours) from the end of the previous sample.
- (iii) **Alternative sampling frequency for burden reduction.** This alternative is only applicable for the measurement of vinyl chloride from sites with a monitoring perimeter less than or equal to 5,000 meters. When an individual sampling point consistently achieves results at or below $0.3 \mu\text{g}/\text{m}^3$, the owner or operator may elect to use the applicable minimum sampling frequency specified in paragraphs (b)(2)(iii)(A) through (E) of this section for that sampling site for vinyl chloride. If ethylene oxide is a required analyte, the owner or operator must continue to monitor ethylene oxide at the frequency specified in paragraph (b)(2)(ii) of this section. When calculating Δc for the monitoring period when using this alternative for burden reduction, use zero for the lowest sampling result for each monitoring period where one or more samples was not taken for vinyl chloride.
 - (A) If every sample at a monitoring site is at or below $0.3 \mu\text{g}/\text{m}^3$ for 2 years (52 consecutive samples), every other sampling period can be skipped for that sampling site, *i.e.*, sampling will occur approximately once per month.
 - (B) If every sample at a sampling site that is monitored at the frequency specified in paragraph (b)(2)(iii)(A) of this section is at or below $0.3 \mu\text{g}/\text{m}^3$ for 2 years (*i.e.*, 26 consecutive "monthly" samples), five 14-day sampling periods can be skipped for that sampling site following each period of sampling, *i.e.*, sampling will occur approximately once per quarter.
 - (C) If every sample at a sampling site that is monitored at the frequency specified in paragraph (b)(2)(iii)(B) of this section is at or below $0.3 \mu\text{g}/\text{m}^3$ for 2 years (*i.e.*, 8 consecutive quarterly samples), twelve 14-day sampling periods can be skipped for that sampling site following each period of sampling, *i.e.*, sampling will occur twice a year.
 - (D) If every sample at a sampling site that is monitored at the frequency specified in paragraph (b)(2)(iii)(C) of this section is at or below $0.3 \mu\text{g}/\text{m}^3$ for 2 years (*i.e.*, 4 consecutive semiannual samples), only one sample per year is required for that sampling site. For yearly sampling, samples shall occur at least 10 months but no more than 14 months apart.
 - (E) If at any time a sample for a sampling site that is monitored at the frequency specified in paragraphs (b)(2)(iii)(A) through (E) of this section returns a result that is above $0.3 \mu\text{g}/\text{m}^3$, the sampling site must return to the original sampling requirements of sampling every 5 calendar days with no skip periods for one quarter (18 5-day sampling periods). If every sample collected during this quarter is at or below $0.3 \mu\text{g}/\text{m}^3$, the owner or operator may revert back to the reduced monitoring schedule applicable for that sampling site prior to the sample reading exceeding $0.3 \mu\text{g}/\text{m}^3$. If any sample collected during this quarter is above $0.3 \mu\text{g}/\text{m}^3$, that sampling site must return to the original sampling requirements of sampling every 5 calendar days with no skip periods for a minimum of two years. The

burden reduction requirements can be used again for that sampling site once the requirements of paragraph (b)(2)(ii)(A) of this section are met again, *i.e.*, after 146 consecutive samples with no results above $0.3 \mu\text{g}/\text{m}^3$.

- (3) The owner or operator must determine canister sample locations in accordance with paragraphs (b)(3)(i) through (v) of this section.
 - (i) The monitoring perimeter must be located on or inside the facility property boundary. If the monitoring perimeter is located away from the facility property boundary, the monitoring perimeter must encompass all potential sources of the target analyte(s) specified in paragraph (b)(1) of this section that are located within the facility's property boundary. If the site contains process units that are disconnected (*i.e.*, one or more process areas are not within the boundary of the main facility), the owner or operator must follow the requirements in paragraph (b)(3)(v) of this section. Canisters are not required to be placed along internal roads, waterways, or other right of ways that may bisect the facility. If a facility is bounded by a waterway on one or more sides, the shoreline is considered the facility property boundary.
 - (ii) The owner or operator must place 8 canisters around the monitoring perimeter during each sampling period.
 - (iii) To determine sampling locations, measure the length of the monitoring perimeter.
 - (A) Locate the point on the monitoring perimeter that is closest to sources of the target analyte(s). If one of the target analytes is ethylene oxide, this point must be the point on the monitoring perimeter that is closest to the sources of ethylene oxide.
 - (B) If the monitoring perimeter is less than or equal to 5,000 meters, divide the monitoring perimeter into 8 evenly spaced sampling points, with one point located in accordance with the requirements of paragraph (b)(3)(iii)(A) of this section.
 - (C) If the monitoring perimeter is greater than 5,000 meters, but less than or equal to 10,000 meters, divide the monitoring perimeter into 16 evenly spaced sampling points, with one point located in accordance with the requirements of paragraph (b)(3)(iii)(A) of this section.
 - (D) If the monitoring perimeter is greater than 10,000 meters, divide the monitoring perimeter into 24 evenly spaced sampling points, with one point located in accordance with the requirements of paragraph (b)(3)(iii)(A) of this section.
 - (iv) Place canisters on the monitoring perimeter at the sampling points as follows.
 - (A) If there are only 8 sampling points for the site, monitor each sampling point during each sampling period.
 - (B) If there are 16 sampling points for the site, number the sampling points consecutively along the monitoring perimeter. During the first sampling period, monitor the odd numbered sampling points. During the second sampling period, monitor the even numbered sampling points. Continue to alternate between the odd numbered and even numbered sampling points in subsequent sampling periods.
 - (C) If there are 24 sampling points for the site, number the sampling points consecutively along the monitoring perimeter. During the first sampling period, monitor every third sampling point starting with the first sampling point (*i.e.*, points 1, 4, 7, etc.). During the

second sampling period, monitor every third sampling point starting with the second sampling point (i.e., points 2, 5, 8, etc.). During the third sampling period, monitor every third sampling point starting with the third sampling point (i.e., points 3, 6, 9, etc.). Continue to alternate between these placements for each subsequent sampling period (i.e., the fourth sampling period will include every third sampling point starting with the first sampling point, the fifth sampling period will include every third sampling point starting with the second sampling point, and so on).

(v) If the site consists of small areas disconnected from the main facility, additional monitors must be placed on these areas in accordance with paragraphs (b)(3)(v)(A) through (C) of this section. The monitoring perimeter for the disconnected area(s) must be located between the property boundary of the area and the process unit(s), such that the monitoring perimeter for the disconnected area encompasses all potential sources of the target analyte(s) specified in paragraph (b)(1) of this section.

(A) If the disconnected area is less than 50 acres, the owner or operator must sample at two locations each sampling period. One location must be placed in the expected prevailing wind direction for the sampling period, downwind of the main source of emissions of the target analyte(s). The other location must be located on the monitoring perimeter at 180 degrees from the first sample location.

(B) If the disconnected area is equal to or greater than 50 acres but less than or equal to 150 acres, the owner or operator must sample at four equally spaced locations. One sampling point must be located on the monitoring perimeter at the point that is closest to sources of the target analyte(s). If one of the target analytes is ethylene oxide, this point must be the point on the monitoring perimeter that is closest to the sources of ethylene oxide.

(C) If the disconnected area is greater than 150 acres, the sampling points for the disconnected area must be determined according to paragraphs (b)(3)(ii) through (iv) of this section.

(4) At least one co-located duplicate sample and at least one field blank must be collected per sampling period.

(5) The owner or operator must follow the procedures in Method 327 of appendix A to this part to determine the detection limit of the target analyte(s) and requirements for quality assurance samples.

(c) The owner or operator must collect and record meteorological data according to the applicable requirements in paragraphs (c)(1) through (3) of this section.

(1) If monitoring is conducted under paragraph (b) of this section, if a near-field source correction is used as provided in paragraph (g)(2) of this section, or if an alternative test method is used that provides time-resolved measurements, the owner or operator must use an on-site meteorological station in accordance with Section 8.3 of Method 325A of appendix A to this part. Collect and record hourly average meteorological data, including temperature, barometric pressure, wind speed and wind direction and calculate daily unit vector wind direction and daily sigma theta.

- (2) For cases other than those specified in paragraph (c)(1) of this section, the owner or operator must collect and record sampling period average temperature and barometric pressure using either an on-site meteorological station in accordance with Section 8.3 of Method 325A of appendix A to this part or, alternatively, using data from a National Weather Service (NWS) meteorological station provided the NWS meteorological station is within 40 kilometers (25 miles) of the facility.
- (3) If an on-site meteorological station is used, the owner or operator must follow the calibration and standardization procedures for meteorological measurements in EPA-454/B-08-002 (incorporated by reference, see § 63.14).
- (d) Within 45 days of completion of each sampling period, the owner or operator must determine whether the results are above or below the action level for each measured compound as follows. If the owner or operator is required to monitor any small disconnected area(s) of the facility under paragraph (b)(3)(v) of this section, the procedure for determining whether the results are above or below the action level for each measured compound must be performed for the disconnected area(s) separately.
 - (1) The owner or operator must determine the facility impact on the concentration (Δc) of each compound for each sampling period according to either paragraph (d)(1)(i) or (ii) of this section, as applicable.
 - (i) Except when near-field source correction is used as provided in paragraph (d)(1)(ii) of this section, the owner or operator must determine the highest and lowest sample results for each compound individually from the sample pool and calculate each compound's Δc as the difference in these concentrations. Co-located samples must be averaged together for the purposes of determining the concentration at a particular sampling location, and, if applicable, for determining Δc . The owner or operator must adhere to the following procedures when one or more samples for the sampling period are below the method detection limit for a particular compound:
 - (A) If the lowest detected value of a compound is below detection, the owner or operator must use zero as the lowest sample result when calculating Δc .
 - (B) If all sample results are below the method detection limit, the owner or operator must use the highest method detection limit for the sample set as the highest sample result and zero as the lowest sample result when calculating Δc .
 - (C) In the case of co-located samples, if one sample is above the method detection limit while the other sample is below the method detection limit, the owner or operator must use the method detection limit as the result for the sample that is below the method detection limit for purposes of averaging the results to determine the concentration at a particular sampling location, and, if applicable, for determining Δc .
 - (ii) When near-field source correction for a compound is used as provided in paragraph (g) of this section, the owner or operator must determine Δc using the calculation protocols outlined in paragraph (d)(1)(i) of this section, except as provided in this paragraph (d)(1)(ii), and the additional requirements in paragraph (g)(2) of this section, as well as any additional requirements outlined in the approved site-specific monitoring plan. The Δc for the compound for the sampling period is equal to the higher of the values in paragraphs (d)(1)(ii)(A) and (B) of this section.
 - (A) The highest corrected sample result for the compound from a sampling location where near-field source correction for the compound is used during the sampling period.

- (B) The difference in concentration between the highest sample result that was not corrected for a near-field source for the compound during the sampling period and the lowest sample result for the compound for the sampling period.
- (2) The owner or operator must calculate the annual average Δc for each monitored compound as follows:
 - (i) For sampling conducted under paragraph (a) of this section, the annual average Δc for each compound is based on the average of the Δc values for the 26 most recent 14-day sampling periods. The owner or operator must update this annual average value after receiving the results of each subsequent 14-day sampling period.
 - (ii) For sampling conducted under paragraph (b) of this section, the annual average Δc for each compound is based on the average of the Δc values for the 73 most recent sampling periods. The owner or operator must update this annual average value after receiving the results of each subsequent sampling period.
- (3) The action level for each compound is listed in paragraphs (d)(3)(i) through (vi) of this section. If the annual average Δc value for a compound is greater than the listed action level for the compound, the concentration is above the action level, and the owner or operator must conduct a root cause analysis and corrective action in accordance with paragraph (e) of this section.
 - (i) The action level for benzene is 9 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) on an annual average basis.
 - (ii) The action level for 1,3-butadiene is 3 $\mu\text{g}/\text{m}^3$ on an annual average basis.
 - (iii) The action level for chloroprene is 0.8 $\mu\text{g}/\text{m}^3$ on an annual average basis.
 - (iv) The action level for ethylene oxide is 0.2 $\mu\text{g}/\text{m}^3$ on an annual average basis.
 - (v) The action level for vinyl chloride is 3 $\mu\text{g}/\text{m}^3$ on an annual average basis.
 - (vi) The action level for ethylene dichloride is 4 $\mu\text{g}/\text{m}^3$ on an annual average basis.
- (e) Once any action level in paragraph (d)(3) of this section has been exceeded, the owner or operator must take the following actions to bring the annual average Δc back below the action level(s).
 - (1) Within 5 days of updating the annual average value as required in paragraph (d)(2) of this section and determining that any action level in paragraph (d)(3) of this section has been exceeded (*i.e.*, in no case longer than 50 days after completion of the sampling period), the owner or operator must initiate a root cause analysis to determine appropriate corrective action. A root cause analysis is an assessment conducted through a process of investigation to determine the primary underlying cause and all other contributing causes to an exceedance of an action level(s) set forth in paragraph (d)(3) of this section.
 - (i) The initial root cause analysis may include, but is not limited to:
 - (A) Leak inspection using Method 21 of appendix A-7 to 40 CFR part 60, optical gas imaging, or handheld monitors.
 - (B) Visual inspection to determine the cause of the high emissions.
 - (C) Operator knowledge of process changes (*e.g.*, a malfunction or release event).

(ii) If the initial root cause cannot be identified using the type of techniques described in paragraph (e)(1)(i) of this section, the owner or operator must employ more frequent sampling and analysis to determine the root cause of the exceedance.

(A) The owner or operator may first employ additional monitoring points and shorter sampling periods for Methods 325A and 325B of appendix A to this part for benzene, 1,3-butadiene, chloroprene, or ethylene dichloride or more frequent sampling with Method 327 of appendix A to this part for ethylene oxide or vinyl chloride to determine the root cause of the exceedance.

(B) If the owner or operator has not determined the root cause of the exceedance within 30 days of determining that the action level has been exceeded, the owner or operator must employ the appropriate real-time sampling techniques (e.g., mobile gas chromatographs, optical spectroscopy instruments, sensors) to locate the cause of the exceedance. If the root cause is not identified after 48 hours, either the real-time monitor must be relocated or an additional real-time monitor must be added. Relocation or addition of extra real-time monitors must continue after each 48-hour period of nonidentification until the owner or operator can identify the root cause of the exceedance.

(2) If the underlying primary and other contributing causes of the exceedance are deemed to be under the control of the owner or operator, the owner or operator must take appropriate corrective action as expeditiously as possible to bring annual average fenceline concentrations back below the action level(s) set forth in paragraph (d)(3) of this section. At a minimum, the corrective actions taken must address the underlying primary and other contributing cause(s) determined in the root cause analysis to prevent future exceedances from the same underlying cause(s).

(3) The root cause analysis must be completed and initial corrective actions taken no later than 45 days after determining there is an exceedance of an action level.

(4) Until the annual average Δc is below the action level again, following completion of the initial corrective action, the owner or operator must conduct a new root cause analysis according to this paragraph (e), and if required, submit a corrective action plan under paragraph (f) of this section following any sampling period for which the sampling start time begins after the completion of the initial corrective actions and for which the Δc for the sampling period is greater than the level specified in paragraphs (e)(4)(i) through (vi) of this section for the compound(s) that initially exceeded the action level.

(i) For benzene, a sampling period Δc of $9 \mu\text{g}/\text{m}^3$.

(ii) For 1,3-butadiene, a sampling period Δc of $3 \mu\text{g}/\text{m}^3$.

(iii) For chloroprene, a sampling period Δc of $0.8 \mu\text{g}/\text{m}^3$.

(iv) For ethylene dichloride, a sampling period Δc of $4 \mu\text{g}/\text{m}^3$.

(v) For ethylene oxide, a sampling period Δc of $0.2 \mu\text{g}/\text{m}^3$.

(vi) For vinyl chloride, a sampling period Δc of $3 \mu\text{g}/\text{m}^3$.

(f) An owner or operator must develop a corrective action plan if the conditions in paragraphs (f)(1), (2), or (3) of this section are met. The corrective action plan must describe the corrective action(s) completed to date, additional measures that the owner or operator proposes to employ to reduce annual average fenceline concentrations below the action level(s) set forth in paragraph (d)(3) of this section, and a

schedule for completion of these measures. The corrective action plan does not need to be approved by the Administrator. However, if upon review, the Administrator disagrees with the additional measures outlined in the plan, the owner or operator must revise and resubmit the plan within 7 calendar days of receiving comments from the Administrator.

- (1) If the compound that exceeded the action level was benzene, 1,3-butadiene, chloroprene, or ethylene dichloride, the owner or operator must develop a corrective action plan if, upon completion of the root cause analysis and initial corrective actions required in paragraph (e) of this section, the Δc value for the next sampling period, for which the sampling start time begins after the completion of the initial corrective actions, is greater than the level specified in paragraphs (f)(1)(i) through (iv) of this section for the compound(s) that initially exceeded the action level. The corrective action plan must include the implementation of real-time sampling techniques to locate the primary and other contributing causes of the exceedance. The owner or operator must submit the corrective action plan to the Administrator within 60 days after receiving the analytical results indicating that the Δc value for the sampling period following the completion of the initial corrective action is greater than the level specified in paragraphs (f)(1)(i) through (iv) of this section.
 - (i) For benzene, a sampling period Δc of $9 \mu\text{g}/\text{m}^3$.
 - (ii) For 1,3-butadiene, a sampling period Δc of $3 \mu\text{g}/\text{m}^3$.
 - (iii) For chloroprene, a sampling period Δc of $0.8 \mu\text{g}/\text{m}^3$.
 - (iv) For ethylene dichloride, a sampling period Δc of $4 \mu\text{g}/\text{m}^3$.
- (2) If the compound that exceeded the action level was ethylene oxide or vinyl chloride, the owner or operator must develop a corrective action plan if, upon completion of the root cause analysis and initial corrective actions required in paragraph (e) of this section, the Δc value for any of the next three sampling periods, for which the sampling start time begins after the completion of the initial corrective actions, is greater than the level specified in paragraphs (f)(2)(i) and (ii) of this section for the compound(s) that initially exceeded the action level. The corrective action plan must include the implementation of real-time sampling techniques to locate the primary and other contributing causes of the exceedance. The owner or operator must submit the corrective action plan to the Administrator within 60 days after receiving the analytical results indicating that the Δc value for the sampling period following the completion of the initial corrective action is greater than the level specified in paragraphs (f)(2)(i) and (ii) of this section.
 - (i) For ethylene oxide, a sampling period Δc of $0.2 \mu\text{g}/\text{m}^3$.
 - (ii) For vinyl chloride, a sampling period Δc of $3 \mu\text{g}/\text{m}^3$.
- (3) The owner or operator must develop a corrective action plan if complete implementation of all corrective measures identified in the root cause analysis required by paragraph (e) of this section will require more than 45 days. The owner or operator must submit the corrective action plan to the Administrator no later than 60 days following the completion of the root cause analysis required in paragraph (e) of this section.
- (g) An owner or operator may request approval from the Administrator for a site-specific monitoring plan to account for offsite upwind sources according to the requirements in paragraphs (g)(1) through (4) of this section.

- (1) The owner or operator must prepare and submit a site-specific monitoring plan and receive approval of the site-specific monitoring plan prior to using the near-field source alternative calculation for determining Δc provided in paragraph (g)(2) of this section. The site-specific monitoring plan must include, at a minimum, the elements specified in paragraphs (g)(1)(i) through (vi) of this section. The procedures in Section 12 of Method 325A of appendix A to this part are not required, but may be used, if applicable, when determining near-field source contributions.
 - (i) Identification of the near-field source or sources.
 - (ii) Location of the additional monitoring stations that will be used to determine the near-field source concentration contribution. The owner or operator must use additional monitoring stations to determine the near-field source contribution.
 - (iii) Identification of the fenceline monitoring locations impacted by the near-field source. If more than one near-field source is present, identify the near-field source or sources that are expected to contribute to the concentration at that monitoring location.
 - (iv) A description of (including sample calculations illustrating) the planned data reduction; the treatment of invalid data, data below detection limits, and data collected during calm wind periods; and calculations to determine the near-field source concentration contribution for each monitoring location.
 - (v) A detailed description of the measurement technique, measurement location(s), the standard operating procedures, measurement frequency, recording frequency, measurement detection limit, and data quality indicators to ensure accuracy, precision, and validity of the data.
 - (vi) A detailed description of how data will be handled during periods of calm wind conditions (*i.e.*, less than 2 miles per hour).
- (2) When an approved site-specific monitoring plan is used, the owner or operator must determine Δc for comparison with the action level according to paragraph (d) of this section. When determining the highest and lowest sample results for use in the Δc calculation, the concentration for any monitor that has been corrected using an approved site-specific monitoring plan will be corrected according to the procedures specified in paragraphs (g)(2)(i) and (ii) of this section.
 - (i) For each monitoring location corrected using the site-specific monitoring plan, the corrected fenceline concentration at that monitoring station will be equal to the fenceline concentration measured with Methods 325A and 325B or Method 327 of appendix A to this part minus the near-field source contributing concentration at the measurement location determined using the additional measurements and calculation procedures included in the site-specific monitoring plan.
 - (ii) If the fenceline concentration at the monitoring station is below the method detection limit for Methods 325A and 325B or Method 327 of appendix A to this part, no near-field source contribution can be subtracted from that monitoring station for that sampling period.
- (3) The site-specific monitoring plan must be submitted and approved as described in paragraphs (g)(3)(i) through (iv) of this section.
 - (i) The site-specific monitoring plan must be submitted to the Administrator for approval.

- (ii) The site-specific monitoring plan must also be submitted to the following address: U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Sector Policies and Programs Division, U.S. EPA Mailroom (E143-01), Attention: Hazardous Organic Chemical Manufacturing Sector Lead, 109 T.W. Alexander Drive, P.O. Box 12055, Research Triangle Park, NC 27711. Electronic copies in lieu of hard copies may also be submitted to fencelineplan@epa.gov.
 - (iii) The Administrator will approve or disapprove the plan in 90 days. The plan is considered approved if the Administrator either approves the plan in writing or fails to disapprove the plan in writing. The 90-day period begins when the Administrator receives the plan.
 - (iv) If the Administrator finds any deficiencies in the site-specific monitoring plan and disapproves the plan in writing, the owner or operator may revise and resubmit the site-specific monitoring plan following the requirements in paragraphs (g)(3)(i) and (ii) of this section. The 90-day period starts over with the resubmission of the revised monitoring plan.
- (4) The approval by the Administrator of a site-specific monitoring plan will be based on the completeness, accuracy and reasonableness of the request for a site-specific monitoring plan. Factors that the Administrator will consider in reviewing the request for a site-specific monitoring plan include, but are not limited to, those described in paragraphs (g)(4)(i) through (v) of this section.
- (i) The identification of the near-field source or sources and evidence of how the sources impact the fenceline concentrations.
 - (ii) The location(s) selected for additional monitoring to determine the near-field source concentration contribution.
 - (iii) The identification of the fenceline monitoring locations impacted by the near-field source or sources.
 - (iv) The appropriateness of the planned data reduction and calculations to determine the near-field source concentration contribution for each monitoring location, including the handling of invalid data, data below the detection limit, and data during calm periods.
 - (v) The adequacy of the description of and rationale for the measurement technique, measurement location(s), the standard operation procedure, measurement frequency, recording frequency, measurement detection limit, and data quality indicators to ensure accuracy, precision, and validity of the data.
- (h) The owner or operator must comply with the applicable recordkeeping and reporting requirements in §§ 63.181 and 63.182.
- (i) As outlined in § 63.7(f), the owner or operator may submit a request for an alternative test method. At a minimum, the request must follow the requirements outlined in paragraphs (i)(1) through (7) of this section.
- (1) The alternative method may be used in lieu of all or a partial number of passive samplers required in Method 325A of appendix A to this part or the canister sampling locations required under paragraph (b) of this section.
 - (2) The alternative method must be validated according to Method 301 in appendix A to this part or contain performance-based procedures and indicators to ensure self-validation.

- (3) The method detection limit must nominally be at least one-third of the action level for the compound(s) that will be monitored with the alternative method. The alternate test method must describe the procedures used to provide field verification of the detection limit.
- (4) If the alternative test method will be used to replace some or all passive samplers required under paragraph (a) of this section, the spatial coverage must be equal to or better than the spatial coverage provided in Method 325A of appendix A to this part. If the alternative test method will be used to replace some or all canisters required under paragraph (b) of this section, the spatial coverage must be equal to or better than the spatial coverage provided under paragraph (b) of this section.
 - (i) For path average concentration open-path instruments, the physical path length of the measurement must be no more than a passive sample footprint (the spacing that would be provided by the sorbent traps when following Method 325A of appendix A to this part) or canister sample footprint, as applicable. For example, if Method 325A requires spacing monitors A and B 610 meters (2,000 feet) apart, then the physical path length limit for the measurement at that portion of the fenceline must be no more than 610 meters (2,000 feet).
 - (ii) For range resolved open-path instrument or approach, the instrument or approach must be able to resolve an average concentration over each passive sampler footprint or canister sample footprint within the path length of the instrument.
 - (iii) The extra samplers required in Sections 8.2.1.3 of Method 325A of appendix A to this part may be omitted when they fall within the path length of an open-path instrument.
- (5) At a minimum, non-integrating alternative test methods must provide a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.
- (6) For alternative test methods capable of real time measurements (less than a 5 minute sampling and analysis cycle), the alternative test method may allow for elimination of data points corresponding to outside emission sources for purpose of calculation of the high point for the two week average. The alternative test method approach must have wind speed, direction and stability class of the same time resolution and within the footprint of the instrument.
- (7) For purposes of averaging data points to determine the Δc for the individual sampling period, all results measured under the method detection limit must use the method detection limit. For purposes of averaging data points for the individual sampling period low sample result, all results measured under the method detection limit must use zero.

[89 FR 43228, May 16, 2024]

Table 1 to Subpart H of Part 63—Batch Processes

[MONITORING FREQUENCY FOR EQUIPMENT OTHER THAN CONNECTORS]

Operating time (% of year)	Equivalent continuous process monitoring frequency time in use		
	Monthly	Quarterly	Semiannually
0 to <25	Quarterly	Annually	Annually.
25 to <50	Quarterly	Semiannually	Annually.
50 to <75	Bimonthly	Three times	Semiannually.
75 to 100	Monthly	Quarterly	Semiannually.

[89 FR 43234, May 16, 2024]

Table 2 to Subpart H of Part 63—Surge Control Vessels and Bottoms Receivers at Existing Sources

Vessel capacity (cubic meters)	Vapor pressure ¹ (kilopascals)
75 ≤ capacity <151	≥13.1
151 ≤ capacity	^a ≥5.2

¹ Maximum true vapor pressure of total organic HAP at operating temperature as defined in subpart G of this part.

[89 FR 43234, May 16, 2024]

Table 3 to Subpart H of Part 63—Surge Control Vessels and Bottoms Receivers at New Sources

Vessel capacity (cubic meters)	Vapor pressure ¹ (kilopascals)
38 ≤ capacity <151	≥13.1
151 ≤ capacity	≥0.7

¹ Maximum true vapor pressure of total organic HAP at operating temperature as defined in subpart G of this part.

[89 FR 43234, May 16, 2024]

Table 4 to Subpart H of Part 63—Applicable 40 CFR Part 63 General Provisions

40 CFR part 63, subpart A, provisions applicable to subpart H
§ 63.1(a)(1), (a)(2), (a)(3), (a)(13), (a)(14), (b)(2) and (c)(4).
§ 63.2.
§ 63.5(a)(1), (a)(2), (b), (d)(1)(ii), (d)(4), (e), (f)(1) and (f)(2).
§ 63.6(a), (b)(3), (c)(5), (i)(1), (i)(2), (i)(4)(i)(A), (i)(5) through (i)(14), (i)(16) and (j).
§ 63.9(a)(2), (b)(4)(i), ^a (b)(4)(ii), (b)(4)(iii), (b)(5), ^a (c), (d), (j) and (k).
§ 63.10(d)(4).
§ 63.11 (c), (d), and (e).
§ 63.12(b).
^a The notifications specified in § 63.9(b)(4)(i) and (b)(5) shall be submitted at the times specified in 40 CFR part 65.

[89 FR 43234, May 16, 2024]

This content is from the eCFR and is authoritative but unofficial.

Title 40 —Protection of Environment

Chapter I —Environmental Protection Agency

Subchapter C —Air Programs

Part 63 —National Emission Standards for Hazardous Air Pollutants for Source Categories

Authority: 42 U.S.C. 7401 *et seq.*

Source: 57 FR 61992, Dec. 29, 1992, unless otherwise noted.

Subpart SS National Emission Standards for Closed Vent Systems, Control Devices, Recovery Devices and Routing to a Fuel Gas System or a Process

§ 63.980 Applicability.

§ 63.981 Definitions.

§ 63.982 Requirements.

§ 63.983 Closed vent systems.

§ 63.984 Fuel gas systems and processes to which storage vessel, transfer rack, or equipment leak regulated material emissions are routed.

§ 63.985 Nonflare control devices used to control emissions from storage vessels and low throughput transfer racks.

§ 63.986 Nonflare control devices used for equipment leaks only.

§ 63.987 Flare requirements.

§ 63.988 Incinerators, boilers, and process heaters.

§ 63.989 *[Reserved]*

§ 63.990 Absorbers, condensers, and carbon adsorbers used as control devices.

§ 63.991 *[Reserved]*

§ 63.992 Implementation and enforcement.

§ 63.993 Absorbers, condensers, carbon adsorbers and other recovery devices used as final recovery devices.

§ 63.994 Halogen scrubbers and other halogen reduction devices.

§ 63.995 Other control devices.

§ 63.996 General monitoring requirements for control and recovery devices.

§ 63.997 Performance test and compliance assessment requirements for control devices.

§ 63.998 Recordkeeping requirements.

§ 63.999 Notifications and other reports.

Subpart SS—National Emission Standards for Closed Vent Systems, Control Devices, Recovery Devices and Routing to a Fuel Gas System or a Process

Source: 64 FR 34866, June 29, 1999, unless otherwise noted.

§ 63.980 Applicability.

The provisions of this subpart include requirements for closed vent systems, control devices and routing of air emissions to a fuel gas system or process. These provisions apply when another subpart references the use of this subpart for such air emission control. These air emission standards are placed here for administrative convenience and only apply to those owners and operators of facilities subject to a referencing subpart. The provisions of 40 CFR part 63, subpart A (General Provisions) do not apply to this subpart except as specified in a referencing subpart.

§ 63.981 Definitions.

Alternative test method means any method of sampling and analyzing for an air pollutant that is not a reference test or equivalent method, and that has been demonstrated to the Administrator's satisfaction, using Method 301 in appendix A of this part 63, or previously approved by the Administrator prior to the promulgation date of standards for an affected source or affected facility under a referencing subpart, to produce results adequate for the Administrator's determination that it may be used in place of a test method specified in this subpart.

Boiler means any enclosed combustion device that extracts useful energy in the form of steam and is not an incinerator or a process heater.

By compound means by individual stream components, not carbon equivalents.

Closed vent system means a system that is not open to the atmosphere and is composed of piping, ductwork, connections, and, if necessary, flow inducing devices that transport gas or vapor from an emission point to a control device. Closed vent system does not include the vapor collection system that is part of any tank truck or railcar.

Closed vent system shutdown means a work practice or operational procedure that stops production from a process unit or part of a process unit during which it is technically feasible to clear process material from a closed vent system or part of a closed vent system consistent with safety constraints and during which repairs can be effected. An unscheduled work practice or operational procedure that stops production from a process unit or part of a process unit for less than 24 hours is not a closed vent system shutdown. An unscheduled work practice or operational procedure that would stop production from a process unit or part of a process unit for a shorter period of time than would be required to clear the closed vent system or part of the closed vent system of materials and start up the unit, and would result in greater emissions than delay of repair of leaking components until the next scheduled closed vent system shutdown, is not a closed vent system shutdown. The use of spare equipment and technically feasible bypassing of equipment without stopping production are not closed vent system shutdowns.

Combustion device means an individual unit of equipment, such as a flare, incinerator, process heater, or boiler, used for the combustion of organic emissions.

Continuous parameter monitoring system (CPMS) means the total equipment that may be required to meet the data acquisition and availability requirements of this part, used to sample, condition (if applicable), analyze, and provide a record of process or control system parameters.

Continuous record means documentation, either in hard copy or computer readable form, of data values measured at least once every 15 minutes and recorded at the frequency specified in § 63.998(b).

Control device means, with the exceptions noted below, a combustion device, recovery device, recapture device, or any combination of these devices used to comply with this subpart or a referencing subpart. For process vents from continuous unit operations at affected sources in subcategories where the applicability criteria includes a TRE index value, recovery devices are not considered to be control devices. Primary condensers on steam strippers or fuel gas systems are not considered to be control devices.

Control System means the combination of the closed vent system and the control devices used to collect and control vapors or gases from a regulated emission source.

Day means a calendar day.

Ductwork means a conveyance system such as those commonly used for heating and ventilation systems. It is often made of sheet metal and often has sections connected by screws or crimping. Hard-piping is not ductwork.

Final recovery device means the last recovery device on a process vent stream from a continuous unit operation at an affected source in a subcategory where the applicability criteria includes a TRE index value. The final recovery device usually discharges to a combustion device, recapture device, or directly to the atmosphere.

First attempt at repair, for the purposes of this subpart, means to take action for the purpose of stopping or reducing leakage of organic material to the atmosphere, followed by monitoring as specified in § 63.983(c) to verify whether the leak is repaired, unless the owner or operator determines by other means that the leak is not repaired.

Flame zone means the portion of the combustion chamber in a boiler or process heater occupied by the flame envelope.

Flow indicator means a device which indicates whether gas flow is, or whether the valve position would allow gas flow to be, present in a line.

Fuel gas means gases that are combusted to derive useful work or heat.

Fuel gas system means the offsite and onsite piping and flow and pressure control system that gathers gaseous streams generated by onsite operations, may blend them with other sources of gas, and transports the gaseous streams for use as fuel gas in combustion devices or in-process combustion equipment such as furnaces and gas turbines, either singly or in combination.

Hard-piping means pipe or tubing that is manufactured and properly installed using good engineering judgment and standards, such as ANSI B31.3.

High throughput transfer rack means those transfer racks that transfer a total of 11.8 million liters per year or greater of liquid containing regulated material.

Incinerator means an enclosed combustion device that is used for destroying organic compounds. Auxiliary fuel may be used to heat waste gas to combustion temperatures. Any energy recovery section present is not physically formed into one manufactured or assembled unit with the combustion section; rather, the energy recovery section is a separate section following the combustion section and the two are joined by ducts or connections carrying flue gas. The above energy recovery section limitation does not apply to an energy recovery section used solely to preheat the incoming vent stream or combustion air.

Low throughput transfer rack means those transfer racks that transfer less than a total of 11.8 million liters per year of liquid containing regulated material.

Operating parameter value means a minimum or maximum value established for a control device parameter which, if achieved by itself or in combination with one or more other operating parameter values, determines that an owner or operator has complied with an applicable emission limit or operating limit.

Organic monitoring device means a unit of equipment used to indicate the concentration level of organic compounds based on a detection principle such as infra-red, photo ionization, or thermal conductivity.

Owner or operator means any person who owns, leases, operates, controls, or supervises a regulated source or a stationary source of which a regulated source is a part.

Performance level means the level at which the regulated material in the gases or vapors vented to a control or recovery device is removed, recovered, or destroyed. Examples of control device performance levels include: achieving a minimum organic reduction efficiency expressed as a percentage of regulated material removed or destroyed in the control device inlet stream on a weight-basis; achieving an organic concentration in the control device exhaust stream that is less than a maximum allowable limit expressed in parts per million by volume on a dry basis corrected to 3 percent oxygen if a combustion device is the control device and supplemental combustion air is used to combust the emissions; or maintaining appropriate control device operating parameters indicative of the device performance at specified values.

Performance test means the collection of data resulting from the execution of a test method (usually three emission test runs) used to demonstrate compliance with a relevant emission limit as specified in the performance test section of this subpart or in the referencing subpart.

Primary fuel means the fuel that provides the principal heat input to a device. To be considered primary, the fuel must be able to sustain operation without the addition of other fuels.

Process heater means an enclosed combustion device that transfers heat liberated by burning fuel directly to process streams or to heat transfer liquids other than water. A process heater may, as a secondary function, heat water in unfired heat recovery sections.

Recapture device means an individual unit of equipment capable of and used for the purpose of recovering chemicals, but not normally for use, reuse, or sale. For example, a recapture device may recover chemicals primarily for disposal. Recapture devices include, but are not limited to, absorbers, carbon adsorbers, and condensers. For purposes of the monitoring, recordkeeping and reporting requirements of this subpart, recapture devices are considered recovery devices.

Recovery device means an individual unit of equipment capable of and normally used for the purpose of recovering chemicals for fuel value (i.e., net positive heating value), use, reuse, or for sale for fuel value, use, or reuse. Examples of equipment that may be recovery devices include absorbers, carbon adsorbers, condensers, oil-water separators or organic-water separators, or organic removal devices such as decanters, strippers, or thin-film evaporation units. For purposes of the monitoring, recordkeeping, and reporting requirements of this subpart, recapture devices are considered recovery devices.

Recovery operations equipment means the equipment used to separate the components of process streams. Recovery operations equipment includes distillation units, condensers, etc. Equipment used for wastewater treatment shall not be considered recovery operations equipment.

Referencing subpart means the subpart which refers an owner or operator to this subpart.

Regulated material, for purposes of this subpart, refers to vapors from volatile organic liquids (VOL), volatile organic compounds (VOC), or hazardous air pollutants (HAP), or other chemicals or groups of chemicals that are regulated by a referencing subpart.

Regulated source for the purposes of this subpart, means the stationary source, the group of stationary sources, or the portion of a stationary source that is regulated by a relevant standard or other requirement established pursuant to a referencing subpart.

Repaired, for the purposes of this subpart, means that equipment; is adjusted, or otherwise altered, to eliminate a leak as defined in the applicable sections of this subpart; and unless otherwise specified in applicable provisions of this subpart, is inspected as specified in § 63.983(c) to verify that emissions from the equipment are below the applicable leak definition.

Routed to a process or route to a process means the gas streams are conveyed to any enclosed portion of a process unit where the emissions are recycled and/or consumed in the same manner as a material that fulfills the same function in the process; and/or transformed by chemical reaction into materials that are not regulated materials; and/or incorporated into a product; and/or recovered.

Run means one of a series of emission or other measurements needed to determine emissions for a representative operating period or cycle as specified in this subpart. Unless otherwise specified, a run may be either intermittent or continuous within the limits of good engineering practice.

Secondary fuel means a fuel fired through a burner other than the primary fuel burner that provides supplementary heat in addition to the heat provided by the primary fuel.

Sensor means a device that measures a physical quantity or the change in a physical quantity, such as temperature, pressure, flow rate, pH, or liquid level.

Specific gravity monitoring device means a unit of equipment used to monitor specific gravity and having a minimum accuracy of ± 0.02 specific gravity units.

Supplemental combustion air means the air that is added to a vent stream after the vent stream leaves the unit operation. Air that is part of the vent stream as a result of the nature of the unit operation is not considered supplemental combustion air. Air required to operate combustion device burner(s) is not considered supplemental combustion air. Air required to ensure the proper operation of catalytic oxidizers, to include the intermittent addition of air upstream of the catalyst bed to maintain a minimum threshold flow rate through the catalyst bed or to avoid excessive temperatures in the catalyst bed, is not considered to be supplemental combustion air.

Temperature monitoring device means a unit of equipment used to monitor temperature and having a minimum accuracy of ± 1 percent of the temperature being monitored expressed in degrees Celsius or ± 1.2 degrees Celsius ($^{\circ}\text{C}$), whichever is greater.

[64 FR 34866, June 29, 1999, as amended at 64 FR 63705, Nov. 22, 1999; 67 FR 46277, July 12, 2002]

§ 63.982 Requirements.

- (a) **General compliance requirements for storage vessels, process vents, transfer racks, and equipment leaks.** An owner or operator who is referred to this subpart for controlling regulated material emissions from storage vessels, process vents, low and high throughput transfer racks, or equipment leaks by venting emissions through a closed vent system to a flare, nonflare control device or routing to a fuel gas system or process shall comply with the applicable requirements of paragraphs (a)(1) through (4) of this section.
- (1) **Storage vessels.** The owner or operator shall comply with the applicable provisions of paragraphs (b), (c)(1), and (d) of this section.

- (2) **Process vents.** The owner or operator shall comply with the applicable provisions of paragraphs (b), (c)(2), and (e) of this section.
- (3) **Transfer racks.**
 - (i) For low throughput transfer racks, the owner or operator shall comply with the applicable provisions of paragraphs (b), (c)(1), and (d) of this section.
 - (ii) For high throughput transfer racks, the owner or operator shall comply with the applicable provisions of paragraphs (b), (c)(2), and (d) of this section.
- (4) **Equipment leaks.** The owner or operator shall comply with the applicable provisions of paragraphs (b), (c)(3), and (d) of this section.
- (b) **Closed vent system and flare.** Owners or operators that vent emissions through a closed vent system to a flare shall meet the requirements in § 63.983 for closed vent systems; § 63.987 for flares; § 63.997 (a), (b) and (c) for provisions regarding flare compliance assessments; the monitoring, recordkeeping, and reporting requirements referenced therein; and the applicable recordkeeping and reporting requirements of §§ 63.998 and 63.999. No other provisions of this subpart apply to emissions vented through a closed vent system to a flare.
- (c) **Closed vent system and nonflare control device.** Owners or operators who control emissions through a closed vent system to a nonflare control device shall meet the requirements in § 63.983 for closed vent systems, the applicable recordkeeping and reporting requirements of §§ 63.998 and 63.999, and the applicable requirements listed in paragraphs (c)(1) through (3) of this section.
 - (1) For storage vessels and low throughput transfer racks, the owner or operator shall meet the requirements in § 63.985 for nonflare control devices and the monitoring, recordkeeping, and reporting requirements referenced therein. No other provisions of this subpart apply to low throughput transfer rack emissions or storage vessel emissions vented through a closed vent system to a nonflare control device unless specifically required in the monitoring plan submitted under § 63.985(c).
 - (2) For process vents and high throughput transfer racks, the owner or operator shall meet the requirements applicable to the control devices being used in § 63.988, § 63.990 or § 63.995; the applicable general monitoring requirements of § 63.996 and the applicable performance test requirements and procedures of § 63.997; and the monitoring, recordkeeping and reporting requirements referenced therein. Owners or operators subject to halogen reduction device requirements under a referencing subpart must also comply with § 63.994 and the monitoring, recordkeeping, and reporting requirements referenced therein. The requirements of §§ 63.984 through 63.986 do not apply to process vents or high throughput transfer racks.
 - (3) For equipment leaks, owners or operators shall meet the requirements in § 63.986 for nonflare control devices used for equipment leak emissions and the monitoring, recordkeeping, and reporting requirements referenced therein. No other provisions of this subpart apply to equipment leak emissions vented through a closed vent system to a nonflare control device.
- (d) **Route to a fuel gas system or process.** Owners or operators that route emissions to a fuel gas system or to a process shall meet the requirements in § 63.984, the monitoring, recordkeeping, and reporting requirements referenced therein, and the applicable recordkeeping and reporting requirements of §§ 63.998 and 63.999. No other provisions of this subpart apply to emissions being routed to a fuel gas system or process.

- (e) **Final recovery devices.** Owners or operators who use a final recovery device to maintain a TRE above a level specified in a referencing subpart shall meet the requirements in § 63.993 and the monitoring, recordkeeping, and reporting requirements referenced therein that are applicable to the recovery device being used; the applicable monitoring requirements in § 63.996 and the recordkeeping and reporting requirements referenced therein; and the applicable recordkeeping and reporting requirements of §§ 63.998 and 63.999. No other provisions of this subpart apply to process vent emissions routed to a final recovery device.
- (f) **Combined emissions.** When emissions from different emission types (e.g., emissions from process vents, transfer racks, and/or storage vessels) are combined, an owner or operator shall comply with the requirements of either paragraph (f)(1) or (2) of this section.
 - (1) Comply with the applicable requirements of this subpart for each kind of emissions in the stream (e.g., the requirements of paragraph (a)(2) of this section for process vents, and the requirements of paragraph (a)(3) of this section for transfer racks); or
 - (2) Comply with the first set of requirements identified in paragraphs (f)(2)(i) through (iii) of this section which applies to any individual emission stream that is included in the combined stream. Compliance with paragraphs (f)(2)(i) through (iii) of this section constitutes compliance with all other emissions requirements for other emission streams.
 - (i) The requirements of § 63.982(a)(2) for process vents, including applicable monitoring, recordkeeping, and reporting;
 - (ii) The requirements of § 63.982(a)(3)(ii) for high throughput transfer racks, including applicable monitoring, recordkeeping, and reporting;
 - (iii) The requirements of § 63.982(a)(1) or (a)(3)(i) for control of emissions from storage vessels or low throughput transfer racks, including applicable monitoring, recordkeeping, and reporting.

[64 FR 34866, June 29, 1999, as amended at 64 FR 63705, Nov. 22, 1999]

§ 63.983 Closed vent systems.

- (a) **Closed vent system equipment and operating requirements.** Except for closed vent systems operated and maintained under negative pressure, the provisions of this paragraph apply to closed vent systems collecting regulated material from a regulated source.
 - (1) **Collection of emissions.** Each closed vent system shall be designed and operated to collect the regulated material vapors from the emission point, and to route the collected vapors to a control device.
 - (2) **Period of operation.** Closed vent systems used to comply with the provisions of this subpart shall be operated at all times when emissions are vented to, or collected by, them.
 - (3) **Bypass monitoring.** Except for equipment needed for safety purposes such as pressure relief devices, low leg drains, high point bleeds, analyzer vents, and open-ended valves or lines, the owner or operator shall comply with the provisions of either paragraphs (a)(3)(i) or (ii) of this section for each closed vent system that contains bypass lines that could divert a vent stream to the atmosphere.
 - (i) Properly install, maintain, and operate a flow indicator that is capable of taking periodic readings. Records shall be generated as specified in § 63.998(d)(1)(ii)(A). The flow indicator shall be installed at the entrance to any bypass line.

- (ii) Secure the bypass line valve in the non-diverting position with a car-seal or a lock-and-key type configuration. Records shall be generated as specified in § 63.998(d)(1)(ii)(B).
- (4) **Loading arms at transfer racks.** Each closed vent system collecting regulated material from a transfer rack shall be designed and operated so that regulated material vapors collected at one loading arm will not pass through another loading arm in the rack to the atmosphere.
- (5) **Pressure relief devices in a transfer rack's closed vent system.** The owner or operator of a transfer rack subject to the provisions of this subpart shall ensure that no pressure relief device in the transfer rack's closed vent system shall open to the atmosphere during loading. Pressure relief devices needed for safety purposes are not subject to this paragraph.
- (b) **Closed vent system inspection and monitoring requirements.** The provisions of this subpart apply to closed vent systems collecting regulated material from a regulated source. Inspection records shall be generated as specified in § 63.998(d)(1)(iii) and (iv) of this section.
 - (1) Except for any closed vent systems that are designated as unsafe or difficult to inspect as provided in paragraphs (b)(2) and (3) of this section, each closed vent system shall be inspected as specified in paragraph (b)(1)(i) or (ii) of this section.
 - (i) If the closed vent system is constructed of hard-piping, the owner or operator shall comply with the requirements specified in paragraphs (b)(1)(i)(A) and (B) of this section.
 - (A) Conduct an initial inspection according to the procedures in paragraph (c) of this section; and
 - (B) Conduct annual inspections for visible, audible, or olfactory indications of leaks.
 - (ii) If the closed vent system is constructed of ductwork, the owner or operator shall conduct an initial and annual inspection according to the procedures in paragraph (c) of this section.
 - (2) Any parts of the closed vent system that are designated, as described in § 63.998(d)(1)(i), as unsafe to inspect are exempt from the inspection requirements of paragraph (b)(1) of this section if the conditions of paragraphs (b)(2)(i) and (ii) of this section are met.
 - (i) The owner or operator determines that the equipment is unsafe-to-inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with paragraph (b)(1) of this section; and
 - (ii) The owner or operator has a written plan that requires inspection of the equipment as frequently as practical during safe-to-inspect times. Inspection is not required more than once annually.
 - (3) Any parts of the closed vent system that are designated, as described in § 63.998(d)(1)(i), as difficult-to-inspect are exempt from the inspection requirements of paragraph (b)(1) of this section if the provisions of paragraphs (b)(3)(i) and (ii) of this section apply.
 - (i) The owner or operator determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters (7 feet) above a support surface; and
 - (ii) The owner or operator has a written plan that requires inspection of the equipment at least once every 5 years.
 - (4) For each bypass line, the owner or operator shall comply with paragraph (b)(4)(i) or (ii) of this section.

- (i) If a flow indicator is used, take a reading at least once every 15 minutes.
- (ii) If the bypass line valve is secured in the non-diverting position, visually inspect the seal or closure mechanism at least once every month to verify that the valve is maintained in the non-diverting position, and the vent stream is not diverted through the bypass line.

(c) ***Closed vent system inspection procedures.*** The provisions of this paragraph apply to closed vent systems collecting regulated material from a regulated source.

(1) Each closed vent system subject to this paragraph shall be inspected according to the procedures specified in paragraphs (c)(1)(i) through (vii) of this section.

- (i) Inspections shall be conducted in accordance with Method 21 of 40 CFR part 60, appendix A, except as specified in this section.
- (ii) Except as provided in (c)(1)(iii) of this section, the detection instrument shall meet the performance criteria of Method 21 of 40 CFR part 60, appendix A, except the instrument response factor criteria in section 3.1.2(a) of Method 21 must be for the representative composition of the process fluid and not of each individual VOC in the stream. For process streams that contain nitrogen, air, water, or other inerts that are not organic HAP or VOC, the representative stream response factor must be determined on an inert-free basis. The response factor may be determined at any concentration for which the monitoring for leaks will be conducted.
- (iii) If no instrument is available at the plant site that will meet the performance criteria of Method 21 specified in paragraph (c)(1)(ii) of this section, the instrument readings may be adjusted by multiplying by the representative response factor of the process fluid, calculated on an inert-free basis as described in paragraph (c)(1)(ii) of this section.
- (iv) The detection instrument shall be calibrated before use on each day of its use by the procedures specified in Method 21 of 40 CFR part 60, appendix A.
- (v) Calibration gases shall be as specified in paragraphs (c)(1)(v)(A) through (C) of this section.
 - (A) Zero air (less than 10 parts per million hydrocarbon in air); and
 - (B) Mixtures of methane in air at a concentration less than 10,000 parts per million. A calibration gas other than methane in air may be used if the instrument does not respond to methane or if the instrument does not meet the performance criteria specified in paragraph (c)(1)(ii) of this section. In such cases, the calibration gas may be a mixture of one or more of the compounds to be measured in air.
 - (C) If the detection instrument's design allows for multiple calibration scales, then the lower scale shall be calibrated with a calibration gas that is no higher than 2,500 parts per million.
- (vi) An owner or operator may elect to adjust or not adjust instrument readings for background. If an owner or operator elects not to adjust readings for background, all such instrument readings shall be compared directly to 500 parts per million to determine whether there is a leak. If an owner or operator elects to adjust instrument readings for background, the owner or operator shall measure background concentration using the procedures in this section. The owner or operator shall subtract the background reading from the maximum concentration indicated by the instrument.

- (vii) If the owner or operator elects to adjust for background, the arithmetic difference between the maximum concentration indicated by the instrument and the background level shall be compared with 500 parts per million for determining whether there is a leak.
- (2) The instrument probe shall be traversed around all potential leak interfaces as described in Method 21 of 40 CFR part 60, appendix A.
- (3) Except as provided in paragraph (c)(4) of this section, inspections shall be performed when the equipment is in regulated material service, or in use with any other detectable gas or vapor.
- (4) Inspections of the closed vent system collecting regulated material from a transfer rack shall be performed only while a tank truck or railcar is being loaded or is otherwise pressurized to normal operating conditions with regulated material or any other detectable gas or vapor.
- (d) **Closed vent system leak repair provisions.** The provisions of this paragraph apply to closed vent systems collecting regulated material from a regulated source.
 - (1) If there are visible, audible, or olfactory indications of leaks at the time of the annual visual inspections required by paragraph (b)(1)(i)(B) of this section, the owner or operator shall follow the procedure specified in either paragraph (d)(1)(i) or (ii) of this section.
 - (i) The owner or operator shall eliminate the leak.
 - (ii) The owner or operator shall monitor the equipment according to the procedures in paragraph (c) of this section.
 - (2) Leaks, as indicated by an instrument reading greater than 500 parts per million by volume above background or by visual inspections, shall be repaired as soon as practical, except as provided in paragraph (d)(3) of this section. Records shall be generated as specified in § 63.998(d)(1)(iii) when a leak is detected.
 - (i) A first attempt at repair shall be made no later than 5 days after the leak is detected.
 - (ii) Except as provided in paragraph (d)(3) of this section, repairs shall be completed no later than 15 days after the leak is detected or at the beginning of the next introduction of vapors to the system, whichever is later.
 - (3) Delay of repair of a closed vent system for which leaks have been detected is allowed if repair within 15 days after a leak is detected is technically infeasible or unsafe without a closed vent system shutdown, as defined in § 63.981, or if the owner or operator determines that emissions resulting from immediate repair would be greater than the emissions likely to result from delay of repair. Repair of such equipment shall be completed as soon as practical, but not later than the end of the next closed vent system shutdown.

[64 FR 34866, June 29, 1999, as amended at 64 FR 63705, Nov. 22, 1999; 67 FR 46277, July 12, 2002]

§ 63.984 Fuel gas systems and processes to which storage vessel, transfer rack, or equipment leak regulated material emissions are routed.

- (a) **Equipment and operating requirements for fuel gas systems and processes.**
 - (1) Except during periods of start-up, shutdown and malfunction as specified in the referencing subpart, the fuel gas system or process shall be operating at all times when regulated material emissions are routed to it.

- (2) The owner or operator of a transfer rack subject to the provisions of this subpart shall ensure that no pressure relief device in the transfer rack's system returning vapors to a fuel gas system or process shall open to the atmosphere during loading. Pressure relief devices needed for safety purposes are not subject to this paragraph.

(b) ***Fuel gas system and process compliance assessment.***

- (1) If emissions are routed to a fuel gas system, there is no requirement to conduct a performance test or design evaluation.
- (2) If emissions are routed to a process, the regulated material in the emissions shall meet one or more of the conditions specified in paragraphs (b)(2)(i) through (iv) of this section. The owner or operator of storage vessels subject to this paragraph shall comply with the compliance demonstration requirements in paragraph (b)(3) of this section.
 - (i) Recycled and/or consumed in the same manner as a material that fulfills the same function in that process;
 - (ii) Transformed by chemical reaction into materials that are not regulated materials;
 - (iii) Incorporated into a product; and/or
 - (iv) Recovered.
- (3) To demonstrate compliance with paragraph (b)(2) of this section for a storage vessel, the owner or operator shall prepare a design evaluation (or engineering assessment) that demonstrates the extent to which one or more of the conditions specified in paragraphs (b)(2)(i) through (iv) of this section are being met.

- (c) ***Statement of connection.*** For storage vessels and transfer racks, the owner or operator shall submit the statement of connection reports for fuel gas systems specified in § 63.999(b)(1)(ii), as appropriate.

§ 63.985 Nonflare control devices used to control emissions from storage vessels and low throughput transfer racks.

- (a) ***Nonflare control device equipment and operating requirements.*** The owner or operator shall operate and maintain the nonflare control device so that the monitored parameters defined as required in paragraph (c) of this section remain within the ranges specified in the Notification of Compliance Status whenever emissions of regulated material are routed to the control device except during periods of start-up, shutdown, and malfunction as specified in the referencing subpart.
- (b) ***Nonflare control device design evaluation or performance test requirements.*** When using a control device other than a flare, the owner or operator shall comply with the requirements in paragraphs (b)(1)(i) or (ii) of this section, except as provided in paragraphs (b)(2) and (3) of this section.
 - (1) ***Design evaluation or performance test results.*** The owner or operator shall prepare and submit with the Notification of Compliance Status, as specified in § 63.999(b)(2), either a design evaluation that includes the information specified in paragraph (b)(1)(i) of this section, or the results of the performance test as described in paragraph (b)(1)(ii) of this section.
 - (i) ***Design evaluation.*** The design evaluation shall include documentation demonstrating that the control device being used achieves the required control efficiency during the reasonably expected maximum storage vessel filling or transfer loading rate. This documentation is to include a description of the gas stream that enters the control device, including flow and

regulated material content, and the information specified in paragraphs (b)(1)(i)(A) through (E) of this section, as applicable. For storage vessels, the description of the gas stream that enters the control device shall be provided for varying liquid level conditions. This documentation shall be submitted with the Notification of Compliance Status as specified in § 63.999(b)(2).

- (A) The efficiency determination is to include consideration of all vapors, gases, and liquids, other than fuels, received by the control device.
 - (B) If an enclosed combustion device with a minimum residence time of 0.5 seconds and a minimum temperature of 760 °C is used to meet an emission reduction requirement specified in a referencing subpart for storage vessels and transfer racks, documentation that those conditions exist is sufficient to meet the requirements of paragraph (b)(1)(i) of this section.
 - (C) Except as provided in paragraph (b)(1)(i)(B) of this section for enclosed combustion devices, the design evaluation shall include the estimated autoignition temperature of the stream being combusted, the flow rate of the stream, the combustion temperature, and the residence time at the combustion temperature.
 - (D) For carbon adsorbers, the design evaluation shall include the estimated affinity of the regulated material vapors for carbon, the amount of carbon in each bed, the number of beds, the humidity, the temperature, the flow rate of the inlet stream and, if applicable, the desorption schedule, the regeneration stream pressure or temperature, and the flow rate of the regeneration stream. For vacuum desorption, pressure drop shall be included.
 - (E) For condensers, the design evaluation shall include the final temperature of the stream vapors, the type of condenser, and the design flow rate of the emission stream.
- (ii) **Performance test.** A performance test, whether conducted to meet the requirements of this section, or to demonstrate compliance for a process vent or high throughput transfer rack as required by § 63.988(b), § 63.990(b), or § 63.995(b), is acceptable to demonstrate compliance with emission reduction requirements for storage vessels and transfer racks. The owner or operator is not required to prepare a design evaluation for the control device as described in paragraph (b)(1)(i) of this section if a performance test will be performed that meets the criteria specified in paragraphs (b)(1)(ii)(A) and (B) of this section.
- (A) The performance test will demonstrate that the control device achieves greater than or equal to the required control device performance level specified in a referencing subpart for storage vessels or transfer racks; and
 - (B) The performance test meets the applicable performance test requirements and the results are submitted as part of the Notification of Compliance Status as specified in § 63.999(b)(2).
- (2) **Exceptions.** A design evaluation or performance test is not required if the owner or operator uses a combustion device meeting the criteria in paragraph (b)(2)(i), (ii), (iii), or (iv) of this section.
- (i) A boiler or process heater with a design heat input capacity of 44 megawatts (150 million British thermal units per hour) or greater.
 - (ii) A boiler or process heater burning hazardous waste for which the owner or operator meets the requirements specified in paragraph (b)(2)(ii)(A) or (B) of this section.

- (A) The boiler or process heater has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 266, subpart H, or
- (B) The boiler or process heater has certified compliance with the interim status requirements of 40 CFR part 266, subpart H.
- (iii) A hazardous waste incinerator for which the owner or operator meets the requirements specified in paragraph (b)(2)(iii)(A) or (B) of this section.
 - (A) The incinerator has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 264, subpart O; or
 - (B) The incinerator has certified compliance with the interim status requirements of 40 CFR part 265, subpart O; or
- (iv) A boiler or process heater into which the vent stream is introduced with the primary fuel.
- (3) **Prior design evaluations or performance tests.** If a design evaluation or performance test is required in the referencing subpart or was previously conducted and submitted for a storage vessel or low throughput transfer rack, then a performance test or design evaluation is not required.

(c) **Nonflare control device monitoring requirements.**

- (1) The owner or operator shall submit with the Notification of Compliance Status, a monitoring plan containing the information specified in § 63.999(b)(2)(i) and (ii) to identify the parameters that will be monitored to assure proper operation of the control device.
- (2) The owner or operator shall monitor the parameters specified in the Notification of Compliance Status or in the operating permit application or amendment. Records shall be generated as specified in § 63.998(d)(2)(i).

§ 63.986 Nonflare control devices used for equipment leaks only.

(a) **Equipment and operating requirements.**

- (1) Owners or operators using a nonflare control device to meet the applicable requirements of a referencing subpart for equipment leaks shall meet the requirements of this section.
- (2) Control devices used to comply with the provisions of this subpart shall be operated at all times when emissions are vented to them.

(b) **Performance test requirements.** A performance test is not required for any nonflare control device used only to control emissions from equipment leaks.

(c) **Monitoring requirements.** Owners or operators of control devices that are used to comply only with the provisions of a referencing subpart for control of equipment leak emissions shall monitor these control devices to ensure that they are operated and maintained in conformance with their design. The owner or operator shall maintain the records as specified in § 63.998(d)(4).

§ 63.987 Flare requirements.

(a) **Flare equipment and operating requirements.** Flares subject to this subpart shall meet the performance requirements in 40 CFR 63.11(b) (General Provisions).

(b) **Flare compliance assessment.**

- (1) The owner or operator shall conduct an initial flare compliance assessment of any flare used to comply with the provisions of this subpart. Flare compliance assessment records shall be kept as specified in § 63.998(a)(1) and a flare compliance assessment report shall be submitted as specified in § 63.999(a)(2). An owner or operator is not required to conduct a performance test to determine percent emission reduction or outlet regulated material or total organic compound concentration when a flare is used.
- (2) [Reserved]
- (3) Flare compliance assessments shall meet the requirements specified in paragraphs (b)(3)(i) through (iv) of this section.
 - (i) Method 22 of appendix A of part 60 shall be used to determine the compliance of flares with the visible emission provisions of this subpart. The observation period is 2 hours, except for transfer racks as provided in (b)(3)(i)(A) or (B) of this section.
 - (A) For transfer racks, if the loading cycle is less than 2 hours, then the observation period for that run shall be for the entire loading cycle.
 - (B) For transfer racks, if additional loading cycles are initiated within the 2-hour period, then visible emissions observations shall be conducted for the additional cycles.
 - (ii) The net heating value of the gas being combusted in a flare shall be calculated using Equation 1:

$$H_T = K_1 \sum_{j=1}^n D_j H_j \quad [\text{Eq. 1}]$$

Where:

H_T = Net heating value of the sample, megajoules per standard cubic meter; where the net enthalpy per mole of offgas is based on combustion at 25 °C and 760 millimeters of mercury (30 inches of mercury), but the standard temperature for determining the volume corresponding to one mole is 20 °C;

$K_1 = 1.740 \times 10^{-7}$ (parts per million by volume)⁻¹ (gram-mole per standard cubic meter) (megajoules per kilocalories), where the standard temperature for gram mole per standard cubic meter is 20 °C;

n = number of sample components;

D_j = Concentration of sample component j , in parts per million by volume on a wet basis, as measured for organics by Method 18 of 40 CFR part 60, appendix A, or by ASTM D6420-18 (incorporated by reference, see § 63.14) under the conditions specified in § 63.997(e)(2)(iii)(D)(1) through (3). Hydrogen and carbon monoxide are measured by ASTM D1946-90 (Reapproved 1994) (incorporated by reference, see § 63.14); and

H_j = Net heat of combustion of sample component j , kilocalories per gram mole at 25 °C and 760 millimeters of mercury (30 inches of mercury).

- (iii) The actual exit velocity of a flare shall be determined by dividing the volumetric flow rate (in unit of standard temperature and pressure), as determined by Method 2, 2A, 2C, 2D, 2F, or 2G of 40 CFR part 60, appendix A, as appropriate, by the unobstructed (free) cross sectional area of the flare tip.
- (iv) Flare flame or pilot monitors, as applicable, shall be operated during any flare compliance assessment.
- (c) **Flare monitoring requirements.** Where a flare is used, the following monitoring equipment is required: a device (including but not limited to a thermocouple, ultra-violet beam sensor, or infrared sensor) capable of continuously detecting that at least one pilot flame or the flare flame is present. Flare flame monitoring and compliance records shall be kept as specified in § 63.998(a)(1) and reported as specified in § 63.999(a).

[64 FR 34866, June 29, 1999, as amended at 64 FR 63705, Nov. 22, 1999; 67 FR 46277, July 12, 2002; 85 FR 40417, July 6, 2020]

§ 63.988 Incinerators, boilers, and process heaters.

- (a) **Equipment and operating requirements.**
 - (1) Owners or operators using incinerators, boilers, or process heaters to meet a weight-percent emission reduction or parts per million by volume outlet concentration requirement specified in a referencing subpart shall meet the requirements of this section.
 - (2) Incinerators, boilers, or process heaters used to comply with the provisions of a referencing subpart and this subpart shall be operated at all times when emissions are vented to them.
 - (3) For boilers and process heaters, the vent stream shall be introduced into the flame zone of the boiler or process heater.
- (b) **Performance test requirements.**
 - (1) Except as specified in § 63.997(b), and paragraph (b)(2) of this section, the owner or operator shall conduct an initial performance test of any incinerator, boiler, or process heater used to comply with the provisions of a referencing subpart and this subpart according to the procedures in § 63.997. Performance test records shall be kept as specified in § 63.998(a)(2) and a performance test report shall be submitted as specified in § 63.999(a)(2). As provided in § 63.985(b)(1), a design evaluation may be used as an alternative to the performance test for storage vessels and low throughput transfer rack controls. As provided in § 63.986(b), no performance test is required for equipment leaks.
 - (2) An owner or operator is not required to conduct a performance test when any of the control devices specified in paragraphs (b)(2)(i) through (iv) of this section are used.
 - (i) A hazardous waste incinerator for which the owner or operator has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 264, subpart O, or has certified compliance with the interim status requirements of 40 CFR part 265, subpart O;
 - (ii) A boiler or process heater with a design heat input capacity of 44 megawatts (150 million British thermal units per hour) or greater;
 - (iii) A boiler or process heater into which the vent stream is introduced with the primary fuel or is used as the primary fuel; or

- (iv) A boiler or process heater burning hazardous waste for which the owner or operator meets the requirements specified in paragraph (b)(2)(iv)(A) or (B) of this section.
 - (A) The boiler or process heater has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 266, subpart H; or
 - (B) The boiler or process heater has certified compliance with the interim status requirements of 40 CFR part 266, subpart H.

(c) **Incinerator, boiler, and process heater monitoring requirements.** Where an incinerator, boiler, or process heater is used, a temperature monitoring device capable of providing a continuous record that meets the provisions specified in paragraph (c)(1), (2), or (3) of this section is required. Any boiler or process heater in which all vent streams are introduced with primary fuel or are used as the primary fuel is exempt from monitoring. Monitoring results shall be recorded as specified in § 63.998(b) and (c), as applicable. General requirements for monitoring and continuous parameter monitoring systems are contained in the referencing subpart and § 3.996.

- (1) Where an incinerator other than a catalytic incinerator is used, a temperature monitoring device shall be installed in the fire box or in the ductwork immediately downstream of the fire box in a position before any substantial heat exchange occurs.
- (2) Where a catalytic incinerator is used, temperature monitoring devices shall be installed in the gas stream immediately before and after the catalyst bed.
- (3) Where a boiler or process heater of less than 44 megawatts (150 million British thermal units per hour) design heat input capacity is used and the regulated vent stream is not introduced as or with the primary fuel, a temperature monitoring device shall be installed in the fire box.

§ 63.989 [Reserved]

§ 63.990 Absorbers, condensers, and carbon adsorbers used as control devices.

(a) **Equipment and operating requirements.**

- (1) Owners or operators using absorbers, condensers, or carbon adsorbers to meet a weight-percent emission reduction or parts per million by volume outlet concentration requirement specified in a referencing subpart shall meet the requirements of this section.
- (2) Absorbers, condensers, and carbon adsorbers used to comply with the provisions of a referencing subpart and this subpart shall be operated at all times when emissions are vented to them.

(b) **Performance test requirements.** Except as specified in § 63.997(b), the owner or operator shall conduct an initial performance test of any absorber, condenser, or carbon adsorber used as a control device to comply with the provisions of the referencing subpart and this subpart according to the procedures in § 63.997. Performance test records shall be kept as specified in § 63.998(a)(2) and a performance test report shall be submitted as specified in § 63.999(a)(2). As provided in § 63.985(b)(1), a design evaluation may be used as an alternative to the performance test for storage vessels and low throughput transfer rack controls. As provided in § 63.986(b), no performance test is required to demonstrate compliance for equipment leaks.

- (c) **Monitoring requirements.** Where an absorber, condenser, or carbon adsorber is used as a control device, either an organic monitoring device capable of providing a continuous record, or the monitoring devices specified in paragraphs (c)(1) through (3), as applicable, shall be used. Monitoring results shall be recorded as specified in § 63.998(b) and (c), as applicable. General requirements for monitoring and continuous parameter monitoring systems are contained in a referencing subpart and § 63.996.
- (1) Where an absorber is used, a scrubbing liquid temperature monitoring device and a specific gravity monitoring device, each capable of providing a continuous record, shall be used. If the difference between the specific gravity of the saturated scrubbing fluid and specific gravity of the fresh scrubbing fluid is less than 0.02 specific gravity units, an organic monitoring device capable of providing a continuous record shall be used.
- (2) Where a condenser is used, a condenser exit (product side) temperature monitoring device capable of providing a continuous record shall be used.
- (3) Where a carbon adsorber is used, an integrating regeneration stream flow monitoring device having an accuracy of ± 10 percent or better, capable of recording the total regeneration stream mass or volumetric flow for each regeneration cycle; and a carbon bed temperature monitoring device, capable of recording the carbon bed temperature after each regeneration and within 15 minutes of completing any cooling cycle, shall be used.

§ 63.991 [Reserved]

§ 63.992 Implementation and enforcement.

- (a) This subpart can be implemented and enforced by the U.S. Environmental Protection Agency (EPA), or a delegated authority such as the applicable State, local, or tribal agency. If the EPA Administrator has delegated authority to a State, local, or tribal agency, then that agency has the authority to implement and enforce this subpart. Contact the applicable EPA Regional Office to find out if this subpart is delegated to a State, local, or tribal agency.
- (b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency under section 40 CFR part 63, subpart E, the authorities contained in paragraphs (b)(1) through (5) of this section are retained by the EPA Administrator and are not transferred to the State, local, or tribal agency.
- (1) Approval of alternatives to the nonopacity emissions standards in §§ 63.983(a) and (d), 63.984, 63.985(a), 63.986(a), 63.987(a), 63.988(a), 63.990(a), 63.993(a), 63.994(a), and 63.995(a) under § 63.6(g). Where these standards reference another subpart, the cited provisions will be delegated according to the delegation provisions of the referenced subpart.
- (2) [Reserved]
- (3) Approval of major changes to test methods under § 63.7(e)(2)(ii) and (f) and as defined in § 63.90.
- (4) Approval of major changes to monitoring under § 63.8(f) and as defined in § 63.90.
- (5) Approval of major changes to recordkeeping and reporting under § 63.10(f) and as defined in § 63.90.

[67 FR 46277, July 12, 2002]

§ 63.993 Absorbers, condensers, carbon adsorbers and other recovery devices used as final recovery devices.

(a) Final recovery device equipment and operating requirements.

- (1) Owners or operators using a final recovery device to maintain a TRE above a level specified in a referencing subpart shall meet the requirements of this section.
- (2) Recovery devices used to comply with the provisions of a referencing subpart and this subpart shall be operated at all times when emissions are vented to them.

(b) Recovery device performance test requirements. There are no performance test requirements for recovery devices. TRE index value determination information shall be recorded as specified in § 63.998(a)(3).

(c) Recovery device monitoring requirements.

- (1) Where an absorber is the final recovery device in the recovery system and the TRE index value is between the level specified in a referencing subpart and 4.0, either an organic monitoring device capable of providing a continuous record or a scrubbing liquid temperature monitoring device and a specific gravity monitoring device, each capable of providing a continuous record, shall be used. If the difference between the specific gravity of the saturated scrubbing fluid and specific gravity of the fresh scrubbing fluid is less than 0.02 specific gravity units, an organic monitoring device capable of providing a continuous record shall be used. Monitoring results shall be recorded as specified in § 63.998(b) and (c), as applicable. General requirements for monitoring and continuous parameter monitoring systems are contained in § 63.996.
- (2) Where a condenser is the final recovery device in the recovery system and the TRE index value is between the level specified in a referencing subpart and 4.0, an organic monitoring device capable of providing a continuous record or a condenser exit (product side) temperature monitoring device capable of providing a continuous record shall be used. Monitoring results shall be recorded as specified in § 63.998(b) and (c), as applicable. General requirements for monitoring and continuous parameter monitoring systems are contained in a referencing subpart and § 63.996.
- (3) Where a carbon adsorber is the final recovery device in the recovery system and the TRE index value is between the level specified in a referencing subpart and 4.0, an organic monitoring device capable of providing a continuous record or an integrating regeneration stream flow monitoring device having an accuracy of ± 10 percent or better, capable of recording the total regeneration stream mass or volumetric flow for each regeneration cycle; and a carbon-bed temperature monitoring device, capable of recording the carbon-bed temperature after each regeneration and within 15 minutes of completing any cooling cycle shall be used. Monitoring results shall be recorded as specified in § 63.998(b) and (c), as applicable. General requirements for monitoring and continuous parameter monitoring systems are contained in a referencing subpart and § 63.996.
- (4) If an owner or operator uses a recovery device other than those listed in this subpart, the owner or operator shall submit a description of planned monitoring, reporting and recordkeeping procedures as specified in a referencing subpart. The Administrator will approve, deny, or modify based on the reasonableness of the proposed monitoring, reporting and recordkeeping requirements as part of the review of the submission or permit application or by other appropriate means.

§ 63.994 Halogen scrubbers and other halogen reduction devices.

(a) Halogen scrubber and other halogen reduction device equipment and operating requirements.

- (1) An owner or operator of a halogen scrubber or other halogen reduction device subject to this subpart shall reduce the overall emissions of hydrogen halides and halogens by the control device performance level specified in a referencing subpart.
- (2) Halogen scrubbers and other halogen reduction devices used to comply with the provisions of a referencing subpart and this subpart shall be operated at all times when emissions are vented to them.

(b) Halogen scrubber and other halogen reduction device performance test requirements.

- (1) An owner or operator of a combustion device followed by a halogen scrubber or other halogen reduction device to control halogenated vent streams in accordance with a referencing subpart and this subpart shall conduct an initial performance test to determine compliance with the control efficiency or emission limits for hydrogen halides and halogens according to the procedures in § 63.997. Performance test records shall be kept as specified in § 63.998(a)(2) and a performance test report shall be submitted as specified in § 63.999(a)(2).
- (2) An owner or operator of a halogen scrubber or other halogen reduction technique used to reduce the vent stream halogen atom mass emission rate prior to a combustion device to comply with a performance level specified in a referencing subpart shall determine the halogen atom mass emission rate prior to the combustion device according to the procedures specified in the referencing subpart. Records of the halogen concentration in the vent stream shall be generated as specified in § 63.998(a)(4).

(c) Halogen scrubber and other halogen reduction device monitoring requirements.

- (1) Where a halogen scrubber is used, the monitoring equipment specified in paragraphs (c)(1)(i) and (ii) of this section is required for the scrubber. Monitoring results shall be recorded as specified in § 63.998(b) and (c), as applicable. General requirements for monitoring and continuous parameter monitoring systems are contained in a referencing subpart and § 63.996.
 - (i) A pH monitoring device capable of providing a continuous record shall be installed to monitor the pH of the scrubber effluent.
 - (ii) A flow meter capable of providing a continuous record shall be located at the scrubber influent for liquid flow. Gas stream flow shall be determined using one of the procedures specified in paragraphs (c)(1)(ii)(A) through (D) of this section.
 - (A) The owner or operator may determine gas stream flow using the design blower capacity, with appropriate adjustments for pressure drop.
 - (B) The owner or operator may measure the gas stream flow at the scrubber inlet.
 - (C) If the scrubber is subject to regulations in 40 CFR parts 264 through 266 that have required a determination of the liquid to gas (L/G) ratio prior to the applicable compliance date for the process unit of which it is part as specified in a referencing subpart, the owner or operator may determine gas stream flow by the method that had been utilized to comply with those regulations. A determination that was conducted prior to that compliance date may be utilized to comply with this subpart if it is still representative.
 - (D) The owner or operator may prepare and implement a gas stream flow determination plan that documents an appropriate method that will be used to determine the gas stream flow. The plan shall require determination of gas stream flow by a method that will at least

provide a value for either a representative or the highest gas stream flow anticipated in the scrubber during representative operating conditions other than start-ups, shutdowns, or malfunctions. The plan shall include a description of the methodology to be followed and an explanation of how the selected methodology will reliably determine the gas stream flow, and a description of the records that will be maintained to document the determination of gas stream flow. The owner or operator shall maintain the plan as specified in a referencing subpart.

- (2) Where a halogen reduction device other than a scrubber is used, the owner or operator shall follow the procedures specified in a referencing subpart in order to establish monitoring parameters.

§ 63.995 Other control devices.

(a) Other control device equipment and operating requirements.

- (1) Owners or operators using a control device other than one listed in §§ 63.985 through 63.990 to meet a weight-percent emission reduction or parts per million by volume outlet concentration requirement specified in a referencing subpart shall meet the requirements of this section.
- (2) Other control devices used to comply with the provisions of a referencing subpart and this subpart shall be operated at all times when emissions are vented to them.

(b) Other control device performance test requirements. An owner or operator using a control device other than those specified in §§ 63.987 through 63.990 to comply with a performance level specified in a referencing subpart, shall perform an initial performance test according to the procedures in § 63.997. Performance test records shall be kept as specified in § 63.998(a)(2) and a performance test report shall be submitted as specified in § 63.999(a)(2).

(c) Other control device monitoring requirements. If an owner or operator uses a control device other than those listed in this subpart, the owner or operator shall submit a description of planned monitoring, recordkeeping and reporting procedures as specified in a referencing subpart. The Administrator will approve, deny, or modify based on the reasonableness of the proposed monitoring, reporting and recordkeeping requirements as part of the review of the submission or permit application or by other appropriate means.

§ 63.996 General monitoring requirements for control and recovery devices.

(a) General monitoring requirements applicability.

- (1) This section applies to the owner or operator of a regulated source required to monitor under this subpart.
- (2) Flares subject to § 63.987(c) are not subject to the requirements of this section.
- (3) Flow indicators are not subject to the requirements of this section.

(b) Conduct of monitoring.

- (1) Monitoring shall be conducted as set forth in this section and in the relevant sections of this subpart unless the provision in either paragraph (b)(1)(i) or (ii) of this section applies.
 - (i) The Administrator specifies or approves the use of minor changes in methodology for the specified monitoring requirements and procedures; or

(ii) The Administrator approves the use of alternatives to any monitoring requirements or procedures as provided in the referencing subpart or paragraph (d) of this section.

(2) When one CPMS is used as a backup to another CPMS, the owner or operator shall report the results from the CPMS used to meet the monitoring requirements of this subpart. If both such CPMS's are used during a particular reporting period to meet the monitoring requirements of this subpart, then the owner or operator shall report the results from each CPMS for the time during the six month period that the instrument was relied upon to demonstrate compliance.

(c) *Operation and maintenance of continuous parameter monitoring systems.*

(1) All monitoring equipment shall be installed, calibrated, maintained, and operated according to manufacturer's specifications or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately.

(2) The owner or operator of a regulated source shall maintain and operate each CPMS as specified in this section, or in a relevant subpart, and in a manner consistent with good air pollution control practices.

(i) The owner or operator of a regulated source shall ensure the immediate repair or replacement of CPMS parts to correct "routine" or otherwise predictable CPMS malfunctions. The necessary parts for routine repairs of the affected equipment shall be readily available.

(ii) If under the referencing subpart, an owner or operator has developed a start-up, shutdown, and malfunction plan, the plan is followed, and the CPMS is repaired immediately, this action shall be recorded as specified in § 63.998(c)(1)(ii)(E).

(iii) The Administrator's determination of whether acceptable operation and maintenance procedures are being used for the CPMS will be based on information that may include, but is not limited to, review of operation and maintenance procedures, operation and maintenance records as specified in § 63.998(c)(1)(i) and (ii), manufacturer's recommendations and specifications, and inspection of the CPMS.

(3) All CPMS's shall be installed and operational, and the data verified as specified in this subpart either prior to or in conjunction with conducting performance tests. Verification of operational status shall, at a minimum, include completion of the manufacturer's written specifications or recommendations for installation, operation, and calibration of the system or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately.

(4) All CPMS's shall be installed such that representative measurements of parameters from the regulated source are obtained.

(5) In accordance with the referencing subpart, except for system breakdowns, repairs, maintenance periods, instrument adjustments, or checks to maintain precision and accuracy, calibration checks, and zero and span adjustments, all continuous parameter monitoring systems shall be in continuous operation when emissions are being routed to the monitored device.

(6) The owner or operator shall establish a range for monitored parameters that indicates proper operation of the control or recovery device. In order to establish the range, the information required in § 63.999(b)(3) shall be submitted in the Notification of Compliance Status or the operating permit application or amendment. The range may be based upon a prior performance test meeting the specifications of § 63.997(b)(1) or a prior TRE index value determination, as applicable, or upon existing ranges or limits established under a referencing subpart. Where the regeneration stream

flow and carbon bed temperature are monitored, the range shall be in terms of the total regeneration stream flow per regeneration cycle and the temperature of the carbon bed determined within 15 minutes of the completion of the regeneration cooling cycle.

(d) ***Alternatives to monitoring requirements*** –

- (1) ***Alternatives to the continuous operating parameter monitoring and recordkeeping provisions.*** An owner or operator may request approval to use alternatives to the continuous operating parameter monitoring and recordkeeping provisions listed in §§ 63.988(c), 63.990(c), 63.993(c), 63.994(c), 63.998(a)(2) through (4), 63.998(c)(2) and (3), as specified in § 63.999(d)(1).
- (2) ***Monitoring a different parameter than those listed.*** An owner or operator may request approval to monitor a different parameter than those established in paragraph (c)(6) of this section or to set unique monitoring parameters if directed by § 63.994(c)(2) or § 63.995(c), as specified in § 63.999(d)(2).

§ 63.997 Performance test and compliance assessment requirements for control devices.

- (a) ***Performance tests and flare compliance assessments.*** Where §§ 63.985 through 63.995 require, or the owner or operator elects to conduct, a performance test of a control device or a halogen reduction device, or a compliance assessment for a flare, the requirements of paragraphs (b) through (d) of this section apply.
- (b) ***Prior test results and waivers.*** Initial performance tests and initial flare compliance assessments are required only as specified in this subpart or a referencing subpart.
 - (1) Unless requested by the Administrator, an owner or operator is not required to conduct a performance test or flare compliance assessment under this subpart if a prior performance test or compliance assessment was conducted using the same methods specified in § 63.997(e) or § 63.987(b)(3), as applicable, and either no process changes have been made since the test, or the owner or operator can demonstrate that the results of the performance test or compliance demonstration, with or without adjustments, reliably demonstrate compliance despite process changes. An owner or operator may request permission to substitute a prior performance test or compliance assessment by written application to the Administrator as specified in § 63.999(a)(1)(iv).
 - (2) Individual performance tests and flare compliance assessments may be waived upon written application to the Administrator, per § 63.999(a)(1)(iii), if, in the Administrator's judgment, the source is meeting the relevant standard(s) on a continuous basis, the source is being operated under an extension or waiver of compliance, or the owner or operator has requested an extension or waiver of compliance and the Administrator is still considering that request.
 - (3) Approval of any waiver granted under this section shall not abrogate the Administrator's authority under the Act or in any way prohibit the Administrator from later canceling the waiver. The cancellation will be made only after notification is given to the owner or operator of the source.
- (c) ***Performance tests and flare compliance assessments schedule.***
 - (1) Unless a waiver of performance testing or flare compliance assessment is obtained under this section or the conditions of a referencing subpart, the owner or operator shall perform such tests as specified in paragraphs (c)(1)(i) through (vii) of this section.

- (i) Within 180 days after the effective date of a relevant standard for a new source that has an initial start-up date before the effective date of that standard; or
 - (ii) Within 180 days after initial start-up for a new source that has an initial start-up date after the effective date of a relevant standard; or
 - (iii) Within 180 days after the compliance date specified in a referencing subpart for an existing source, or within 180 days after start-up of an existing source if the source begins operation after the effective date of the relevant emission standard; or
 - (iv) Within 180 days after the compliance date for an existing source subject to an emission standard established pursuant to section 112(f) of the Act; or
 - (v) Within 180 days after the termination date of the source's extension of compliance or a waiver of compliance for an existing source that obtains an extension of compliance under § 63.1112(a), or waiver of compliance under 40 CFR 61.11; or
 - (vi) Within 180 days after the compliance date for a new source, subject to an emission standard established pursuant to section 112(f) of the Act, for which construction or reconstruction is commenced after the proposal date of a relevant standard established pursuant to section 112(d) of the Act but before the proposal date of the relevant standard established pursuant to section 112(f); or
 - (vii) When the promulgated emission standard in a referencing subpart is more stringent than the standard that was proposed, the owner or operator of a new or reconstructed source subject to that standard for which construction or reconstruction is commenced between the proposal and promulgation dates of the standard shall comply with performance testing requirements within 180 days after the standard's effective date, or within 180 days after start-up of the source, whichever is later. If a promulgated standard in a referencing subpart is more stringent than the proposed standard, the owner or operator may choose to demonstrate compliance initially with either the proposed or the promulgated standard. If the owner or operator chooses to comply with the proposed standard initially, the owner or operator shall conduct a second performance test within 3 years and 180 days after the effective date of the standard, or after start-up of the source, whichever is later, to demonstrate compliance with the promulgated standard.
- (2) The Administrator may require an owner or operator to conduct performance tests and compliance assessments at the regulated source at any time when the action is authorized by section 114 of the Act.
- (3) Unless already permitted by the applicable title V permit, if an owner or operator elects to use a recovery device to replace an existing control device at a later date, or elects to use a different flare, nonflare control device or recovery device to replace an existing flare, nonflare control device or final recovery device at a later date, the owner or operator shall notify the Administrator, either by amendment of the regulated source's title V permit or, if title V is not applicable, by submission of the notice specified in § 63.999(c)(7) before implementing the change. Upon implementing the change, a compliance demonstration or performance test shall be performed according to the provisions of paragraphs (c)(3)(i) through (v) of this section, as applicable, within 180 days. The compliance assessment report shall be submitted to the Administrator within 60 days of completing the determination, as provided in § 63.999(a)(1)(ii).

- (i) For flares used to replace an existing control device, a flare compliance demonstration shall be performed using the methods specified in § 63.987(b);
 - (ii) For flares used to replace an existing final recovery device that is used on an applicable process vent, the owner or operator shall comply with the applicable provisions in a referencing subpart and in this subpart;
 - (iii) For incinerators, boilers, or process heaters used to replace an existing control device, a performance test shall be performed, using the methods specified in § 63.997;
 - (iv) For absorbers, condensers, or carbon adsorbers used to replace an existing control device on a process vent or a transfer rack, a performance test shall be performed, using the methods specified in § 63.997;
 - (v) For absorbers, condensers, or carbon adsorbers used to replace an existing final recovery device on a process vent, the owner or operator shall comply with the applicable provisions of a referencing subpart and this subpart;
- (d) **Performance testing facilities.** If required to do performance testing, the owner or operator of each new regulated source and, at the request of the Administrator, the owner or operator of each existing regulated source, shall provide performance testing facilities as specified in paragraphs (d)(1) through (5) of this section.
 - (1) Sampling ports adequate for test methods applicable to such source. This includes, as applicable, the requirements specified in (d)(1)(i) and (ii) of this section.
 - (i) Constructing the air pollution control system such that volumetric flow rates and pollutant emission rates can be accurately determined by applicable test methods and procedures; and
 - (ii) Providing a stack or duct free of cyclonic flow during performance tests, as demonstrated by applicable test methods and procedures;
 - (2) Safe sampling platform(s);
 - (3) Safe access to sampling platform(s);
 - (4) Utilities for sampling and testing equipment; and
 - (5) Any other facilities that the Administrator deems necessary for safe and adequate testing of a source.
- (e) **Performance test procedures.** Where §§ 63.985 through 63.995 require the owner or operator to conduct a performance test of a control device or a halogen reduction device, the owner or operator shall follow the requirements of paragraphs (e)(1)(i) through (v) of this section, as applicable.
 - (1) **General procedures.**
 - (i) **Continuous unit operations.** For continuous unit operations, performance tests shall be conducted at maximum representative operating conditions for the process, unless the Administrator specifies or approves alternate operating conditions. During the performance test, an owner or operator may operate the control or halogen reduction device at maximum or minimum representative operating conditions for monitored control or halogen reduction device parameters, whichever results in lower emission reduction. Operations during periods of start-up, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test.

- (ii) [Reserved]
- (iii) **Combination of both continuous and batch unit operations.** For a combination of both continuous and batch unit operations, performance tests shall be conducted at maximum representative operating conditions. For the purpose of conducting a performance test on a combined vent stream, maximum representative operating conditions shall be when batch emission episodes are occurring that result in the highest organic HAP emission rate (for the combined vent stream) that is achievable during the 6-month period that begins 3 months before and ends 3 months after the compliance assessment (e.g. TRE calculation, performance test) without causing any of the situations described in paragraphs (e)(1)(iii)(A) through (C) of this section.
 - (A) Causing damage to equipment;
 - (B) Necessitating that the owner or operator make product that does not meet an existing specification for sale to a customer; or
 - (C) Necessitating that the owner or operator make product in excess of demand.
- (iv) **Alternatives to performance test requirements.** Performance tests shall be conducted and data shall be reduced in accordance with the test methods and procedures set forth in this subpart, in each relevant standard, and, if required, in applicable appendices of 40 CFR parts 51, 60, 61, and 63 unless the Administrator specifies one of the provisions in paragraphs (e)(1)(iv)(A) through (E) of this section.
 - (A) Specifies or approves, in specific cases, the use of a test method with minor changes in methodology; or
 - (B) Approves the use of an alternative test method, the results of which the Administrator has determined to be adequate for indicating whether a specific regulated source is in compliance. The alternate method or data shall be validated using the applicable procedures of Method 301 of appendix A of 40 CFR part 63; or
 - (C) Approves shorter sampling times and smaller sample volumes when necessitated by process variables or other factors; or
 - (D) Waives the requirement for the performance test as specified in paragraph (b)(2) of this section because the owner or operator of a regulated source has demonstrated by other means to the Administrator's satisfaction that the regulated source is in compliance with the relevant standard; or
 - (E) Approves the use of an equivalent method.
- (v) **Performance test runs.** Except as provided in paragraphs (e)(1)(v)(A) and (B) of this section, each performance test shall consist of three separate runs using the applicable test method. Each run shall be conducted for at least 1 hour and under the conditions specified in this section. For the purpose of determining compliance with an applicable standard, the arithmetic means of results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances, beyond the owner or operator's control, compliance may, upon the Administrator's approval, be determined using the arithmetic mean of the results of the two other runs.

- (A) For control devices used to control emissions from transfer racks (except low throughput transfer racks that are capable of continuous vapor processing but do not handle continuous emissions or multiple loading arms of a transfer rack that load simultaneously), each run shall represent at least one complete tank truck or tank car loading period, during which regulated materials are loaded, and samples shall be collected using integrated sampling or grab samples taken at least four times per hour at approximately equal intervals of time, such as 15-minute intervals.
 - (B) For intermittent vapor processing systems used for controlling transfer rack emissions (except low throughput transfer racks that do not handle continuous emissions or multiple loading arms of a transfer rack that load simultaneously), each run shall represent at least one complete control device cycle, and samples shall be collected using integrated sampling or grab samples taken at least four times per hour at approximately equal intervals of time, such as 15-minute intervals.
- (2) **Specific procedures.** Where §§ 63.985 through 63.995 require the owner or operator to conduct a performance test of a control device, or a halogen reduction device, an owner or operator shall conduct that performance test using the procedures in paragraphs (e)(2)(i) through (iv) of this section, as applicable. The regulated material concentration and percent reduction may be measured as either total organic regulated material or as TOC minus methane and ethane according to the procedures specified.
 - (i) **Selection of sampling sites.** Method 1 or 1A of 40 CFR part 60, appendix A, as appropriate, shall be used for selection of the sampling sites.
 - (A) For determination of compliance with a percent reduction requirement of total organic regulated material or TOC, sampling sites shall be located as specified in paragraphs (e)(2)(i)(A)(1) and (e)(2)(i)(A)(2) of this section, and at the outlet of the control device.
 - (1) With the exceptions noted below in paragraphs (e)(2)(i)(A)(2) and (3), the control device inlet sampling site shall be located at the exit from the unit operation before any control device.
 - (2) For process vents from continuous unit operations at affected sources in subcategories where the applicability criteria includes a TRE index value, the control device inlet sampling site shall be located after the final recovery device.
 - (3) If a vent stream is introduced with the combustion air or as a secondary fuel into a boiler or process heater with a design capacity less than 44 megawatts, selection of the location of the inlet sampling sites shall ensure the measurement of total organic regulated material or TOC (minus methane and ethane) concentrations, as applicable, in all vent streams and primary and secondary fuels introduced into the boiler or process heater.
 - (B) For determination of compliance with a parts per million by volume total regulated material or TOC limit in a referencing subpart, the sampling site shall be located at the outlet of the control device.
 - (ii) **Gas volumetric flow rate.** The gas volumetric flow rate shall be determined using Method 2, 2A, 2C, 2D, 2F, or 2G of 40 CFR part 60, appendix A, as appropriate.

(iii) **Total organic regulated material or TOC concentration.** To determine compliance with a parts per million by volume total organic regulated material or TOC limit, the owner or operator shall use Method 18 or 25A of 40 CFR part 60, appendix A, as applicable. The ASTM D6420-18 (incorporated by reference, see § 63.14) may be used in lieu of Method 18 of 40 CFR part 60, appendix A, under the conditions specified in paragraphs (e)(2)(iii)(D)(1) through (3) of this section. Alternatively, any other method or data that have been validated according to the applicable procedures in Method 301 of appendix A to this part may be used. The procedures specified in paragraphs (e)(2)(iii)(A), (B), (D), and (E) of this section shall be used to calculate parts per million by volume concentration. The calculated concentration shall be corrected to 3 percent oxygen using the procedures specified in paragraph (e)(2)(iii)(C) of this section if a combustion device is the control device and supplemental combustion air is used to combust the emissions.

(A) **Sampling time.** For continuous unit operations and for a combination of both continuous and batch unit operations, the minimum sampling time for each run shall be 1 hour in which either an integrated sample or a minimum of four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time, such as 15 minute intervals during the run.

(B) **Concentration calculation.** The concentration of either TOC (minus methane or ethane) or total organic regulated material shall be calculated according to paragraph (e)(2)(iii)(B) (1) or (2) of this section.

(1) The TOC concentration (C_{TOC}) is the sum of the concentrations of the individual components and shall be computed for each run using Equation 2.

$$C_{\text{TOC}} = \sum_{i=1}^x \frac{\left(\sum_{j=1}^n C_{ji} \right)}{x} \quad [\text{Eq. 2}]$$

Where:

C_{TOC} = Concentration of TOC (minus methane and ethane), dry basis, parts per million by volume.

x = Number of samples in the sample run.

n = Number of components in the sample.

C_{ji} = Concentration of sample components j of sample i, dry basis, parts per million by volume.

(2) The total organic regulated material (C_{REG}) shall be computed according to Equation 2 in paragraph (e)(2)(iii)(B)(1) of this section except that only the regulated species shall be summed.

(C) **Concentration correction calculation.** The concentration of TOC or total organic regulated material, as applicable, shall be corrected to 3 percent oxygen if a combustion device is the control device and supplemental combustion air is used to combust the emissions.

- (1) The emission rate correction factor (or excess air), integrated sampling and analysis procedures of Method 3B of 40 CFR part 60, appendix A, or the manual method in ANSI/ASME PTC 19.10-1981—Part 10 (incorporated by reference, see § 63.14), shall be used to determine the oxygen concentration. The sampling site shall be the same as that of the organic regulated material or organic compound samples, and the samples shall be taken during the same time that the organic regulated material or organic compound samples are taken.
- (2) The concentration corrected to 3 percent oxygen (C_c) shall be computed using Equation 3.

$$C_c = C_m \left(\frac{17.9}{20.9 - \%O_{2d}} \right) \quad [\text{Eq. 3}]$$

Where:

C_c = Concentration of TOC or organic regulated material corrected to 3 percent oxygen, dry basis, parts per million by volume.

C_m = Concentration of TOC (minus methane and ethane) or organic regulated material, dry basis, parts per million by volume.

$\%O_{2d}$ = Concentration of oxygen, dry basis, percentage by volume.

- (D) To measure the total organic regulated material concentration at the outlet of a control device, use Method 18 of 40 CFR part 60, appendix A, or ASTM D6420-18 (incorporated by reference, see § 63.14). If you have a combustion control device, you must first determine which regulated material compounds are present in the inlet gas stream using process knowledge or the screening procedure described in Method 18. In conducting the performance test, analyze samples collected at the outlet of the combustion control device as specified in Method 18 or ASTM D6420-18 for the regulated material compounds present at the inlet of the control device. The method ASTM D6420-18 may be used only under the conditions specified in paragraphs (e)(2)(iii)(D)(1) through (3) of this section.
 - (1) If the target compounds are all known and are all listed in Section 1.1 of ASTM D6420-18 as measurable.
 - (2) ASTM D6420-18 may not be used for methane and ethane.
 - (3) ASTM D6420-18 may not be used as a total VOC method.
- (E) To measure the TOC concentration, use Method 18 of 40 CFR part 60, appendix A, or use Method 25A of 40 CFR part 60, appendix A, according to the procedures in paragraphs (e)(2)(iii)(E)(1) through (4) of this section.
 - (1) Calibrate the instrument on the predominant regulated material compound.

- (2) The test results are acceptable if the response from the high level calibration gas is at least 20 times the standard deviation for the response from the zero calibration gas when the instrument is zeroed on its most sensitive scale.
- (3) The span value of the analyzer must be less than 100 parts per million by volume.
- (4) Report the results as carbon, calculated according to Equation 25A-1 of Method 25A of 40 CFR part 60, appendix A.

(iv) **Percent reduction calculation.** To determine compliance with a percent reduction requirement, the owner or operator shall use Method 18, 25, or 25A of 40 CFR part 60, appendix A, as applicable. The method ASTM D6420-18 (incorporated by reference, see § 63.14) may be used in lieu of Method 18 of 40 CFR part 60, appendix A, under the conditions specified in paragraphs (e)(2)(iii)(D)(1) through (3) of this section. Alternatively, any other method or data that have been validated according to the applicable procedures in Method 301 of appendix A to this part may be used. The procedures specified in paragraphs (e)(2)(iv)(A) through (I) of this section shall be used to calculate percent reduction efficiency.

(A) **Sampling time.** The minimum sampling time for each run shall be 1 hour in which either an integrated sample or a minimum of four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time, such as 15-minute intervals during the run.

(B) **Mass rate of TOC or total organic regulated material.** The mass rate of either TOC (minus methane and ethane) or total organic regulated material (E_i , E_o) shall be computed as applicable.

(1) Equations 4 and 5 shall be used.

$$E_i = K_2 \left(\sum_{j=1}^n C_{ij} M_{ij} \right) Q_i \quad [\text{Eq. 4}]$$

$$E_o = K_2 \left(\sum_{j=1}^n C_{oj} M_{oj} \right) Q_o \quad [\text{Eq. 5}]$$

Where:

E_i , E_o = Emission rate of TOC (minus methane and ethane) (E_{TOC}) or emission rate of total organic regulated material (E_{RM}) in the sample at the inlet and outlet of the control device, respectively, dry basis, kilogram per hour.

K_2 = Constant, 2.494×10^{-6} (parts per million) $^{-1}$ (gram-mole per standard cubic meter) (kilogram per gram) (minute per hour), where standard temperature (gram-mole per standard cubic meter) is 20 °C.

n = Number of components in the sample.

C_{ij} , C_{oj} = Concentration on a dry basis of organic compound j in parts per million by volume of the gas stream at the inlet and outlet of the control device, respectively. If the TOC emission rate is being calculated, C_{ij} and C_{oj} include all organic compounds measured minus methane and ethane; if the total organic regulated material emissions rate is being calculated, only organic regulated material are included.

M_{ij} , M_{oj} = Molecular weight of organic compound j , gram per gram-mole, of the gas stream at the inlet and outlet of the control device, respectively.

Q_i , Q_o = Process vent flow rate, dry standard cubic meter per minute, at a temperature of 20 °C, at the inlet and outlet of the control device, respectively.

(2)-(3) [Reserved]

- (C) **Percent reduction in TOC or total organic regulated material for continuous unit operations and a combination of both continuous and batch unit operations.** For continuous unit operations and for a combination of both continuous and batch unit operations, the percent reduction in TOC (minus methane and ethane) or total organic regulated material shall be calculated using Equation 6.

$$R = \frac{E_i - E_o}{E_i} (100) \quad [\text{Eq. 6}]$$

Where:

R = Control efficiency of control device, percent.

E_i = Mass rate of TOC (minus methane and ethane) or total organic regulated material at the inlet to the control device as calculated under paragraph (e)(2)(iv)(B) of this section, kilograms TOC per hour or kilograms organic regulated material per hour.

E_o = Mass rate of TOC (minus methane and ethane) or total organic regulated material at the outlet of the control device, as calculated under paragraph (e)(2)(iv)(B) of this section, kilograms TOC per hour or kilograms total organic regulated material per hour.

- (D) **Vent stream introduced with combustion air or as secondary fuel.** If the vent stream entering a boiler or process heater with a design capacity less than 44 megawatts is introduced with the combustion air or as a secondary fuel, the weight-percent reduction of total organic regulated material or TOC (minus methane and ethane) across the device shall be determined by comparing the TOC (minus methane and ethane) or total organic regulated material in all combusted vent streams and primary and secondary fuels with the TOC (minus methane and ethane) or total organic regulated material exiting the combustion device, respectively.
- (E) **Transfer racks.** Method 25A of 40 CFR part 60, appendix A, may also be used for the purpose of determining compliance with the percent reduction requirement for transfer racks.

- (1) If Method 25A of 40 CFR part 60, appendix A, is used to measure the concentration of organic compounds (C_{TOC}), the principal organic regulated material in the vent stream shall be used as the calibration gas.
- (2) An emission testing interval shall consist of each 15-minute period during the performance test. For each interval, a reading from each measurement shall be recorded.
- (3) The average organic compound concentration and the volume measurement shall correspond to the same emissions testing interval.
- (4) The mass at the inlet and outlet of the control device during each testing interval shall be calculated using Equation 7.

$$M_j = FKV_s C_t \quad [\text{Eq. 7}]$$

Where:

M_j = Mass of organic compounds emitted during testing interval j, kilograms.

$F = 10^{-6}$ = Conversion factor, (cubic meters regulated material per cubic meters air) * (parts per million by volume)⁻¹.

K = Density, kilograms per standard cubic meter organic regulated material.

= 659 kilograms per standard cubic meter organic regulated material. (Note: The density term cancels out when the percent reduction is calculated. Therefore, the density used has no effect. The density of hexane is given so that it can be used to maintain the units of M_j .)

V_s = Volume of air-vapor mixture exhausted at standard conditions, 20 °C and 760 millimeters mercury, standard cubic meters.

C_t = Total concentration of organic compounds (as measured) at the exhaust vent, parts per million by volume, dry basis.

- (5) The organic compound mass emission rates at the inlet and outlet of the control device shall be calculated using Equations 8 and 9 as follows:

$$E_i = \frac{\sum_{j=1}^n M_{ij}}{T} \quad [\text{Eq. 8}]$$

$$E_o = \frac{\sum_{j=1}^n M_{oj}}{T} \quad [\text{Eq. 9}]$$

Where:

E_i , E_o = Mass flow rate of organic compounds at the inlet (i) and outlet (o) of the control device, kilograms per hour.

n = Number of testing intervals.

M_{ij} , M_{oj} = Mass of organic compounds at the inlet (i) or outlet (o) during testing interval j , kilograms.

T = Total time of all testing intervals, hours.

- (F) To measure inlet and outlet concentrations of total organic regulated material, use Method 18 of 40 CFR part 60, appendix A, or ASTM D6420-18 (incorporated by reference, see § 63.14), under the conditions specified in paragraphs (e)(2)(iii)(D)(1) through (3) of this section. In conducting the performance test, collect and analyze samples as specified in Method 18 or ASTM D6420-18. You must collect samples simultaneously at the inlet and outlet of the control device. If the performance test is for a combustion control device, you must first determine which regulated material compounds are present in the inlet gas stream (i.e., uncontrolled emissions) using process knowledge or the screening procedure described in Method 18. Quantify the emissions for the regulated material compounds present in the inlet gas stream for both the inlet and outlet gas streams for the combustion device.
- (G) To determine inlet and outlet concentrations of TOC, use Method 25 of 40 CFR part 60, appendix A. Measure the total gaseous non-methane organic (TGNMO) concentration of the inlet and outlet vent streams using the procedures of Method 25. Use the TGNMO concentration in Equations 4 and 5 of paragraph (e)(2)(iv)(B) of this section.
- (H) Method 25A of 40 CFR part 60, appendix A, may be used instead of Method 25 to measure inlet and outlet concentrations of TOC if the condition in either paragraph (e)(2)(iv)(H)(1) or (2) of this section is met.
 - (1) The concentration at the inlet to the control system and the required level of control would result in exhaust TGNMO concentrations of 50 parts per million by volume or less.
 - (2) Because of the high efficiency of the control device, the anticipated TGNMO concentration of the control device exhaust is 50 parts per million by volume or less, regardless of the inlet concentration.
- (I) If the uncontrolled or inlet gas stream to the control device contains formaldehyde, you must conduct emissions testing according to paragraphs (e)(2)(iv)(I)(1) through (3) of this section.
 - (1) Except as specified in paragraph (e)(2)(iv)(I)(3) of this section, if you elect to comply with a percent reduction requirement and formaldehyde is the principal regulated material compound (i.e., greater than 50 percent of the regulated material compounds in the stream by volume), you must use Method 316 or 320 of appendix A to this part, to measure formaldehyde at the inlet and outlet of the control device. Use the percent reduction in formaldehyde as a surrogate for the percent reduction in total regulated material emissions.

- (2) Except as specified in paragraph (e)(2)(iv)(I)(3) of this section, if you elect to comply with an outlet total organic regulated material concentration or TOC concentration limit, and the uncontrolled or inlet gas stream to the control device contains greater than 10 percent (by volume) formaldehyde, you must use Method 316 or 320 of appendix A to this part, to separately determine the formaldehyde concentration. Calculate the total organic regulated material concentration or TOC concentration by totaling the formaldehyde emissions measured using Method 316 or 320 and the other regulated material compound emissions measured using Method 18 or 25/25A of 40 CFR part 60, appendix A.
- (3) You may elect to use ASTM D6348-12e1 (incorporated by reference, § 63.14) in lieu of Method 316 or 320 of appendix A to this part as specified in paragraph (e)(2)(iv)(I)(1) or (2) of this section. To comply with this paragraph, the test plan preparation and implementation in the Annexes to ASTM D6348-03 (incorporated by reference, see § 63.14) Sections A1 through A8 are mandatory; the percent (%) R must be determined for each target analyte using Equation A5.5 of ASTM D6348-03 Annex A5 (Analyte Spiking Technique); and in order for the test data to be acceptable for a compound, the %R must be $70\% \leq R \leq 130\%$. If the %R value does not meet this criterion for a target compound, then the test data is not acceptable for that compound and the test must be repeated for that analyte (i.e., the sampling and/or analytical procedure should be adjusted before a retest). The %R value for each compound must be reported in the test report, and all field measurements must be corrected with the calculated %R value for that compound by using the following equation:

$$\text{Reported Results} = (\text{Measured Concentration in the Stack} \times 100) / \%R.$$

- (3) An owner or operator using a halogen scrubber or other halogen reduction device to control process vent and transfer rack halogenated vent streams in compliance with a referencing subpart, who is required to conduct a performance test to determine compliance with a control efficiency or emission limit for hydrogen halides and halogens, shall follow the procedures specified in paragraphs (e)(3) (i) through (iv) of this section.
- (i) For an owner or operator determining compliance with the percent reduction of total hydrogen halides and halogens, sampling sites shall be located at the inlet and outlet of the scrubber or other halogen reduction device used to reduce halogen emissions. For an owner or operator determining compliance with a kilogram per hour outlet emission limit for total hydrogen halides and halogens, the sampling site shall be located at the outlet of the scrubber or other halogen reduction device and prior to any releases to the atmosphere.
- (ii) Except as provided in paragraph (e)(1)(iv) of this section, Method 26 or Method 26A of 40 CFR part 60, appendix A, shall be used to determine the concentration, in milligrams per dry standard cubic meter, of total hydrogen halides and halogens that may be present in the vent stream. The mass emissions of each hydrogen halide and halogen compound shall be calculated from the measured concentrations and the gas stream flow rate.
- (iii) To determine compliance with the percent removal efficiency, the mass emissions for any hydrogen halides and halogens present at the inlet of the halogen reduction device shall be summed together. The mass emissions of the compounds present at the outlet of the scrubber or other halogen reduction device shall be summed together. Percent reduction shall be determined by comparison of the summed inlet and outlet measurements.

- (iv) To demonstrate compliance with a kilogram per hour outlet emission limit, the test results must show that the mass emission rate of total hydrogen halides and halogens measured at the outlet of the scrubber or other halogen reduction device is below the kilogram per hour outlet emission limit specified in a referencing subpart.

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§ 63.998 Recordkeeping requirements.

(a) *Compliance assessment, monitoring, and compliance records* —

- (1) **Conditions of flare compliance assessment, monitoring, and compliance records.** Upon request, the owner or operator shall make available to the Administrator such records as may be necessary to determine the conditions of flare compliance assessments performed pursuant to § 63.987(b).
 - (i) **Flare compliance assessment records.** When using a flare to comply with this subpart, record the information specified in paragraphs (a)(1)(i)(A) through (C) of this section for each flare compliance assessment performed pursuant to § 63.987(b). As specified in § 63.999(a)(2)(iii)(A), the owner or operator shall include this information in the flare compliance assessment report.
 - (A) Flare design (i.e., steam-assisted, air-assisted, or non-assisted);
 - (B) All visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the flare compliance assessment; and
 - (C) All periods during the flare compliance assessment when all pilot flames are absent or, if only the flare flame is monitored, all periods when the flare flame is absent.
 - (ii) **Monitoring records.** Each owner or operator shall keep up to date and readily accessible hourly records of whether the monitor is continuously operating and whether the flare flame or at least one pilot flame is continuously present. For transfer racks, hourly records are required only while the transfer rack vent stream is being vented.
 - (iii) **Compliance records.**
 - (A) Each owner or operator shall keep records of the times and duration of all periods during which the flare flame or all the pilot flames are absent. This record shall be submitted in the periodic reports as specified in § 63.999(c)(3).
 - (B) Each owner or operator shall keep records of the times and durations of all periods during which the monitor is not operating.
- (2) **Nonflare control device performance test records.**
 - (i) **Availability of performance test records.** Upon request, the owner or operator shall make available to the Administrator such records as may be necessary to determine the conditions of performance tests performed pursuant to § 63.988(b), § 63.990(b), § 63.994(b), or § 63.995(b).
 - (ii) **Nonflare control device and halogen reduction device performance test records.**
 - (A) **General requirements.** Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the data specified in paragraphs (a)(2)(ii)(B) through (C) of this section, as applicable, measured during each

performance test performed pursuant to § 63.988(b), § 63.990(b), § 63.994(b), or § 63.995(b), and also include that data in the Notification of Compliance Status required under § 63.999(b). The same data specified in this section shall be submitted in the reports of all subsequently required performance tests where either the emission control efficiency of a combustion device, or the outlet concentration of TOC or regulated material is determined.

(B) **Nonflare combustion device.** Where an owner or operator subject to the provisions of this paragraph seeks to demonstrate compliance with a percent reduction requirement or a parts per million by volume requirement using a nonflare combustion device the information specified in (a)(2)(ii)(B)(1) through (6) of this section shall be recorded.

- (1) For thermal incinerators, record the fire box temperature averaged over the full period of the performance test.
- (2) For catalytic incinerators, record the upstream and downstream temperatures and the temperature difference across the catalyst bed averaged over the full period of the performance test.
- (3) For a boiler or process heater with a design heat input capacity less than 44 megawatts and a vent stream that is not introduced with or as the primary fuel, record the fire box temperature averaged over the full period of the performance test.
- (4) For an incinerator, record the percent reduction of organic regulated material, if applicable, or TOC achieved by the incinerator determined as specified in § 63.997(e)(2)(iv), as applicable, or the concentration of organic regulated material (parts per million by volume, by compound) determined as specified in § 63.997(e)(2)(iii) at the outlet of the incinerator.
- (5) For a boiler or process heater, record a description of the location at which the vent stream is introduced into the boiler or process heater.
- (6) For a boiler or process heater with a design heat input capacity of less than 44 megawatts and where the process vent stream is introduced with combustion air or used as a secondary fuel and is not mixed with the primary fuel, record the percent reduction of organic regulated material or TOC, or the concentration of regulated material or TOC (parts per million by volume, by compound) determined as specified in § 63.997(e)(2)(iii) at the outlet of the combustion device.

(C) **Other nonflare control devices.** Where an owner or operator seeks to use an absorber, condenser, or carbon adsorber as a control device, the information specified in paragraphs (a)(2)(ii)(C)(1) through (5) of this section shall be recorded, as applicable.

- (1) Where an absorber is used as the control device, the exit specific gravity and average exit temperature of the absorbing liquid averaged over the same time period as the performance test (both measured while the vent stream is normally routed and constituted); or
- (2) Where a condenser is used as the control device, the average exit (product side) temperature averaged over the same time period as the performance test while the vent stream is routed and constituted normally; or

- (3) Where a carbon adsorber is used as the control device, the total regeneration stream mass flow during each carbon-bed regeneration cycle during the period of the performance test, and temperature of the carbon-bed after each regeneration during the period of the performance test (and within 15 minutes of completion of any cooling cycle or cycles; or
 - (4) As an alternative to paragraph (a)(2)(ii)(C)(1), (2), or (3) of this section, the concentration level or reading indicated by an organics monitoring device at the outlet of the absorber, condenser, or carbon adsorber averaged over the same time period as the performance test while the vent stream is normally routed and constituted.
 - (5) For an absorber, condenser, or carbon adsorber used as a control device, the percent reduction of regulated material achieved by the control device or concentration of regulated material (parts per million by volume, by compound) at the outlet of the control device.
- (D) **Halogen reduction devices.** When using a scrubber following a combustion device to control a halogenated vent stream, record the information specified in paragraphs (a)(2)(ii)(D)(1) through (3) of this section.
- (1) The percent reduction or scrubber outlet mass emission rate of total hydrogen halides and halogens as specified in § 63.997(e)(3).
 - (2) The pH of the scrubber effluent averaged over the time period of the performance test; and
 - (3) The scrubber liquid-to-gas ratio averaged over the time period of the performance test.
- (3) **Recovery device monitoring records during TRE index value determination.** For process vents that require control of emissions under a referencing subpart, owners or operators using a recovery device to maintain a TRE above a level specified in the referencing subpart shall maintain the continuous records specified in paragraph (a)(3)(i) through (v) of this section, as applicable, and submit reports as specified in § 63.999(a)(2)(iii)(C).
- (i) Where an absorber is the final recovery device in the recovery system and the saturated scrubbing fluid and specific gravity of the scrubbing fluid is greater than or equal to 0.02 specific gravity units, the exit specific gravity (or alternative parameter that is a measure of the degree of absorbing liquid saturation if approved by the Administrator) and average exit temperature of the absorbing liquid averaged over the same time period as the TRE index value determination (both measured while the vent stream is normally routed and constituted); or
 - (ii) Where a condenser is the final recovery device in the recovery system, the average exit (product side) temperature averaged over the same time period as the TRE index value determination while the vent stream is routed and constituted normally; or
 - (iii) Where a carbon adsorber is the final recovery device in the recovery system, the total regeneration stream mass flow during each carbon-bed regeneration cycle during the period of the TRE index value determination, and temperature of the carbon-bed after each regeneration during the period of the TRE index value determination (and within 15 minutes of completion of any cooling cycle or cycles); or

- (iv) As an alternative to paragraph (a)(3)(i), (ii), or (iii) of this section, the concentration level or reading indicated by an organics monitoring device at the outlet of the absorber, condenser, or carbon adsorber averaged over the same time period as the TRE index value determination while the vent stream is normally routed and constituted.
 - (v) All measurements and calculations performed to determine the TRE index value of the vent stream as specified in a referencing subpart.
- (4) **Halogen concentration records.** Record the halogen concentration in the vent stream determined according to the procedures specified in a referencing subpart. Submit this record in the Notification of Compliance Status, as specified in § 63.999(b)(4). If the owner or operator designates the vent stream as halogenated, then this shall be recorded and reported in the Notification of Compliance Status report.
- (b) **Continuous records and monitoring system data handling –**
- (1) **Continuous records.** Where this subpart requires a continuous record, the owner or operator shall maintain a record as specified in paragraphs (b)(1)(i) through (iv) of this section, as applicable:
 - (i) A record of values measured at least once every 15 minutes or each measured value for systems which measure more frequently than once every 15 minutes; or
 - (ii) A record of block average values for 15-minute or shorter periods calculated from all measured data values during each period or from at least one measured data value per minute if measured more frequently than once per minute.
 - (iii) Where data is collected from an automated continuous parameter monitoring system, the owner or operator may calculate and retain block hourly average values from each 15-minute block average period or from at least one measured value per minute if measured more frequently than once per minute, and discard all but the most recent three valid hours of continuous (15-minute or shorter) records, if the hourly averages do not exclude periods of CPMS breakdown or malfunction. An automated CPMS records the measured data and calculates the hourly averages through the use of a computerized data acquisition system.
 - (iv) A record as required by an alternative approved under a referencing subpart.
 - (2) **Excluded data.** Monitoring data recorded during periods identified in paragraphs (b)(2)(i) through (iii) of this section shall not be included in any average computed to determine compliance with an emission limit in a referencing subpart.
 - (i) Monitoring system breakdowns, repairs, preventive maintenance, calibration checks, and zero (low-level) and high-level adjustments;
 - (ii) Periods of non-operation of the process unit (or portion thereof), resulting in cessation of the emissions to which the monitoring applies; and
 - (iii) Startups, shutdowns, and malfunctions, if the owner or operator operates the source during such periods in accordance with § 63.1111(a) and maintains the records specified in paragraph (d)(3) of this section.
 - (3) **Records of daily averages.** In addition to the records specified in paragraph (a), owners or operators shall keep records as specified in paragraphs (b)(3)(i) and (ii) of this section and submit reports as specified in § 63.999(c), unless an alternative recordkeeping system has been requested and approved under a referencing subpart.

- (i) Except as specified in paragraph (b)(3)(ii) of this section, daily average values of each continuously monitored parameter shall be calculated from data meeting the specifications of paragraph (b)(2) of this section for each operating day and retained for 5 years.
 - (A) The daily average shall be calculated as the average of all values for a monitored parameter recorded during the operating day. The average shall cover a 24-hour period if operation is continuous, or the period of operation per operating day if operation is not continuous (e.g., for transfer racks the average shall cover periods of loading). If values are measured more frequently than once per minute, a single value for each minute may be used to calculate the daily average instead of all measured values.
 - (B) The operating day shall be the period defined in the operating permit or in the Notification of Compliance Status. It may be from midnight to midnight or another daily period.
 - (ii) If all recorded values for a monitored parameter during an operating day are within the range established in the Notification of Compliance Status or in the operating permit, the owner or operator may record that all values were within the range and retain this record for 5 years rather than calculating and recording a daily average for that operating day. In such cases, the owner or operator may not discard the recorded values as allowed in paragraph (b)(1)(iii) of this section.
- (4) [Reserved]
- (5) **Alternative recordkeeping.** For any parameter with respect to any item of equipment associated with a process vent or transfer rack (except low throughput transfer loading racks), the owner or operator may implement the recordkeeping requirements in paragraphs (b)(5)(i) or (ii) of this section as alternatives to the recordkeeping provisions listed in paragraphs (b)(1) through (3) of this section. The owner or operator shall retain each record required by paragraphs (b)(5)(i) or (ii) of this section as provided in a referencing subpart.
- (i) The owner or operator may retain only the daily average value, and is not required to retain more frequently monitored operating parameter values, for a monitored parameter with respect to an item of equipment, if the requirements of paragraphs (b)(5)(i)(A) through (F) of this section are met. The owner or operator shall notify the Administrator in the Notification of Compliance Status as specified in § 63.999(b)(5) or, if the Notification of Compliance Status has already been submitted, in the Periodic Report immediately preceding implementation of the requirements of this paragraph, as specified in § 63.999(c)(6)(iv).
 - (A) The monitoring system is capable of detecting unrealistic or impossible data during periods of operation other than start-ups, shutdowns or malfunctions (e.g., a temperature reading of -200 °C on a boiler), and will alert the operator by alarm or other means. The owner or operator shall record the occurrence. All instances of the alarm or other alert in an operating day constitute a single occurrence.
 - (B) The monitoring system generates a running average of the monitoring values, updated at least hourly throughout each operating day, that have been obtained during that operating day, and the capability to observe this average is readily available to the Administrator on-site during the operating day. The owner or operator shall record the occurrence of any period meeting the criteria in paragraphs (b)(5)(i)(B)(1) through (3) of this section. All instances in an operating day constitute a single occurrence.
 - (1) The running average is above the maximum or below the minimum established limits;

- (2) The running average is based on at least six one-hour average values; and
 - (3) The running average reflects a period of operation other than a start-up, shutdown, or malfunction.
- (C) The monitoring system is capable of detecting unchanging data during periods of operation other than start-ups, shutdowns or malfunctions, except in circumstances where the presence of unchanging data is the expected operating condition based on past experience (e.g., pH in some scrubbers), and will alert the operator by alarm or other means. The owner or operator shall record the occurrence. All instances of the alarm or other alert in an operating day constitute a single occurrence.
- (D) The monitoring system will alert the owner or operator by an alarm, if the running average parameter value calculated under paragraph (b)(5)(i)(B) of this section reaches a set point that is appropriately related to the established limit for the parameter that is being monitored.
- (E) The owner or operator shall verify the proper functioning of the monitoring system, including its ability to comply with the requirements of paragraph (b)(5)(i) of this section, at the times specified in paragraphs (b)(5)(i)(E)(1) through (3) of this section. The owner or operator shall document that the required verifications occurred.
 - (1) Upon initial installation.
 - (2) Annually after initial installation.
 - (3) After any change to the programming or equipment constituting the monitoring system that might reasonably be expected to alter the monitoring system's ability to comply with the requirements of this section.
- (F) The owner or operator shall retain the records identified in paragraphs (b)(5)(i)(F)(1) through (4) of this section.
 - (1) Identification of each parameter, for each item of equipment, for which the owner or operator has elected to comply with the requirements of paragraph (b)(5)(i) of this section.
 - (2) A description of the applicable monitoring system(s), and of how compliance will be achieved with each requirement of paragraph (b)(5)(i)(A) through (E) of this section. The description shall identify the location and format (e.g., on-line storage; log entries) for each required record. If the description changes, the owner or operator shall retain both the current and the most recent superseded description. The description, and the most recent superseded description, shall be retained as provided in the subpart that references this subpart, except as provided in paragraph (b)(5)(i)(F)(1) of this section.
 - (3) A description, and the date, of any change to the monitoring system that would reasonably be expected to affect its ability to comply with the requirements of paragraph (b)(5)(i) of this section.
 - (4) Owners and operators subject to paragraph (b)(5)(i)(F)(2) of this section shall retain the current description of the monitoring system as long as the description is current, but not less than 5 years from the date of its creation. The current description shall

be retained on-site at all times or be accessible from a central location by computer or other means that provides access within 2 hours after a request. The owner or operator shall retain the most recent superseded description at least until 5 years from the date of its creation. The superseded description shall be retained on-site (or accessible from a central location by computer that provides access within 2 hours after a request) at least 6 months after being superseded. Thereafter, the superseded description may be stored off-site.

(ii) If an owner or operator has elected to implement the requirements of paragraph (b)(5)(i) of this section, and a period of 6 consecutive months has passed without an excursion as defined in paragraph (b)(6)(i) of this section, the owner or operator is no longer required to record the daily average value for that parameter for that unit of equipment, for any operating day when the daily average value is less than the maximum, or greater than the minimum established limit. With approval by the Administrator, monitoring data generated prior to the compliance date of this subpart shall be credited toward the period of 6 consecutive months, if the parameter limit and the monitoring were required and/or approved by the Administrator.

(A) If the owner or operator elects not to retain the daily average values, the owner or operator shall notify the Administrator in the next Periodic Report, as specified in § 63.999(c)(6)(i). The notification shall identify the parameter and unit of equipment.

(B) If there is an excursion as defined in paragraph (b)(6)(i) of this section on any operating day after the owner or operator has ceased recording daily averages as provided in paragraph (b)(5)(ii) of this section, the owner or operator shall immediately resume retaining the daily average value for each operating day, and shall notify the Administrator in the next Periodic Report, as specified in § 63.999(c). The owner or operator shall continue to retain each daily average value until another period of 6 consecutive months has passed without an excursion as defined in paragraph (b)(6)(i) of this section.

(C) The owner or operator shall retain the records specified in paragraphs (b)(5)(i)(A) through (F) of this section for the duration specified in a referencing subpart. For any week, if compliance with paragraphs (b)(5)(i)(A) through (D) of this section does not result in retention of a record of at least one occurrence or measured parameter value, the owner or operator shall record and retain at least one parameter value during a period of operation other than a start-up, shutdown, or malfunction.

(6)

(i) For the purposes of this section, an excursion means that the daily average value of monitoring data for a parameter is greater than the maximum, or less than the minimum established value, except as provided in paragraphs (b)(6)(i)(A) and (B) of this section.

(A) The daily average value during any startup, shutdown, or malfunction shall not be considered an excursion if the owner or operator operates the source during such periods in accordance with § 63.1111(a) and maintains the records specified in paragraph (d)(3) of this section.

(B) An excused excursion, as described in paragraph (b)(6)(ii), does not count toward the number of excursions for the purposes of this subpart.

- (ii) One excused excursion for each control device or recovery device for each semiannual period is allowed. If a source has developed a startup, shutdown and malfunction plan, and a monitored parameter is outside its established range or monitoring data are not collected during periods of start-up, shutdown, or malfunction (and the source is operated during such periods in accordance with § 63.1111(a)) or during periods of nonoperation of the process unit or portion thereof (resulting in cessation of the emissions to which monitoring applies), then the excursion is not a violation and, in cases where continuous monitoring is required, the excursion does not count as the excused excursion for determining compliance.

(c) ***Nonflare control and recovery device regulated source monitoring records –***

- (1) ***Monitoring system records.*** For process vents and high throughput transfer racks, the owner or operator subject to this subpart shall keep the records specified in this paragraph, as well as records specified elsewhere in this subpart.
 - (i) For a CPMS used to comply with this part, a record of the procedure used for calibrating the CPMS.
 - (ii) For a CPMS used to comply with this subpart, records of the information specified in paragraphs (c)(ii)(A) through (H) of this section, as indicated in a referencing subpart.
 - (A) The date and time of completion of calibration and preventive maintenance of the CPMS.
 - (B) The “as found” and “as left” CPMS readings, whenever an adjustment is made that affects the CPMS reading and a “no adjustment” statement otherwise.
 - (C) The start time and duration or start and stop times of any periods when the CPMS is inoperative.
 - (D) Records of the occurrence and duration of each start-up, shutdown, and malfunction of CPMS used to comply with this subpart during which excess emissions (as defined in a referencing subpart) occur.
 - (E) For each start-up, shutdown, and malfunction during which excess emissions as defined in a referencing subpart occur, records whether the procedures specified in the source's start-up, shutdown, and malfunction plan were followed, and documentation of actions taken that are not consistent with the plan. These records may take the form of a “checklist,” or other form of recordkeeping that confirms conformance with the start-up, shutdown, and malfunction plan for the event.
 - (F) Records documenting each start-up, shutdown, and malfunction event.
 - (G) Records of CPMS start-up, shutdown, and malfunction event that specify that there were no excess emissions during the event, as applicable.
 - (H) Records of the total duration of operating time.
- (2) ***Combustion control and halogen reduction device monitoring records.***
 - (i) Each owner or operator using a combustion control or halogen reduction device to comply with this subpart shall keep the following records up-to-date and readily accessible, as applicable. Continuous records of the equipment operating parameters specified to be monitored under §§

63.988(c) (incinerator, boiler, and process heater monitoring), 63.994(c) (halogen reduction device monitoring), and 63.995(c) (other combustion systems used as control device monitoring) or approved by the Administrator in accordance with a referencing subpart.

- (ii) Each owner or operator shall keep records of the daily average value of each continuously monitored parameter for each operating day determined according to the procedures specified in paragraph (b)(3)(i) of this section. For catalytic incinerators, record the daily average of the temperature upstream of the catalyst bed and the daily average of the temperature differential across the bed. For halogen scrubbers record the daily average pH and the liquid-to-gas ratio.
- (iii) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible records of periods of operation during which the parameter boundaries are exceeded. The parameter boundaries are established pursuant to § 63.996(c)(6).

(3) ***Monitoring records for recovery devices, absorbers, condensers, carbon adsorbers or other noncombustion systems used as control devices.***

- (i) Each owner or operator using a recovery device to achieve and maintain a TRE index value greater than the control applicability level specified in the referencing subpart but less than 4.0 or using an absorber, condenser, carbon adsorber or other non-combustion system as a control device shall keep readily accessible, continuous records of the equipment operating parameters specified to be monitored under §§ 63.990(c) (absorber, condenser, and carbon adsorber monitoring), 63.993(c) (recovery device monitoring), or 63.995(c) (other noncombustion systems used as a control device monitoring) or as approved by the Administrator in accordance with a referencing subpart. For transfer racks, continuous records are required while the transfer vent stream is being vented.
- (ii) Each owner or operator shall keep records of the daily average value of each continuously monitored parameter for each operating day determined according to the procedures specified in paragraph (b)(3)(i) of this section. If carbon adsorber regeneration stream flow and carbon bed regeneration temperature are monitored, the records specified in paragraphs (c)(3)(ii)(A) and (B) of this section shall be kept instead of the daily averages.
 - (A) Records of total regeneration stream mass or volumetric flow for each carbon-bed regeneration cycle.
 - (B) Records of the temperature of the carbon bed after each regeneration and within 15 minutes of completing any cooling cycle.
- (iii) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible records of periods of operation during which the parameter boundaries are exceeded. The parameter boundaries are established pursuant to § 63.996(c)(6).

(d) ***Other records –***

- (1) ***Closed vent system records.*** For closed vent systems the owner or operator shall record the information specified in paragraphs (d)(1)(i) through (iv) of this section, as applicable.
 - (i) For closed vent systems collecting regulated material from a regulated source, the owner or operator shall record the identification of all parts of the closed vent system, that are designated as unsafe or difficult to inspect, an explanation of why the equipment is unsafe or difficult to inspect, and the plan for inspecting the equipment required by § 63.983(b)(2)(ii) or (iii) of this section.

- (ii) For each closed vent system that contains bypass lines that could divert a vent stream away from the control device and to the atmosphere, the owner or operator shall keep a record of the information specified in either paragraph (d)(1)(ii)(A) or (B) of this section, as applicable.
 - (A) Hourly records of whether the flow indicator specified under § 63.983(a)(3)(i) was operating and whether a diversion was detected at any time during the hour, as well as records of the times of all periods when the vent stream is diverted from the control device or the flow indicator is not operating.
 - (B) Where a seal mechanism is used to comply with § 63.983(a)(3)(ii), hourly records of flow are not required. In such cases, the owner or operator shall record that the monthly visual inspection of the seals or closure mechanisms has been done, and shall record the occurrence of all periods when the seal mechanism is broken, the bypass line valve position has changed, or the key for a lock-and-key type lock has been checked out, and records of any car-seal that has been broken.
 - (iii) For a closed vent system collecting regulated material from a regulated source, when a leak is detected as specified in § 63.983(d)(2), the information specified in paragraphs (d)(1)(iii)(A) through (F) of this section shall be recorded and kept for 5 years.
 - (A) The instrument and the equipment identification number and the operator name, initials, or identification number.
 - (B) The date the leak was detected and the date of the first attempt to repair the leak.
 - (C) The date of successful repair of the leak.
 - (D) The maximum instrument reading measured by the procedures in § 63.983(c) after the leak is successfully repaired or determined to be nonreparable.
 - (E) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 days after discovery of the leak. The owner or operator may develop a written procedure that identifies the conditions that justify a delay of repair. In such cases, reasons for delay of repair may be documented by citing the relevant sections of the written procedure.
 - (F) Copies of the Periodic Reports as specified in § 63.999(c), if records are not maintained on a computerized database capable of generating summary reports from the records.
 - (iv) For each instrumental or visual inspection conducted in accordance with § 63.983(b)(1) for closed vent systems collecting regulated material from a regulated source during which no leaks are detected, the owner or operator shall record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.
- (2) ***Storage vessel and transfer rack records.*** An owner or operator shall keep readily accessible records of the information specified in paragraphs (d)(2)(i) and (ii) of this section, as applicable.
- (i) A record of the measured values of the parameters monitored in accordance with § 63.985(c) or § 63.987(c).
 - (ii) A record of the planned routine maintenance performed on the control system during which the control system does not meet the applicable specifications of § 63.983(a), § 63.985(a), or § 63.987(a), as applicable, due to the planned routine maintenance. Such a record shall include the information specified in paragraphs (d)(2)(ii)(A) through (C) of this section. This information shall be submitted in the Periodic Reports as specified in § 63.999(c)(4).

- (A) The first time of day and date the requirements of § 63.983(a), § 63.985(a), or § 63.987(a), as applicable, were not met at the beginning of the planned routine maintenance, and
 - (B) The first time of day and date the requirements of § 63.983(a), § 63.985(a), or § 63.987(a), as applicable, were met at the conclusion of the planned routine maintenance.
 - (C) A description of the type of maintenance performed.
- (3) **Regulated source and control equipment start-up, shutdown and malfunction records.**
 - (i) Records of the occurrence and duration of each start-up, shutdown, and malfunction of operation of process equipment or of air pollution control equipment used to comply with this part during which excess emissions (as defined in a referencing subpart) occur.
 - (ii) For each start-up, shutdown, and malfunction during which excess emissions occur, records that the procedures specified in the source's start-up, shutdown, and malfunction plan were followed, and documentation of actions taken that are not consistent with the plan. For example, if a start-up, shutdown, and malfunction plan includes procedures for routing control device emissions to a backup control device (e.g., the incinerator for a halogenated stream could be routed to a flare during periods when the primary control device is out of service), records must be kept of whether the plan was followed. These records may take the form of a "checklist," or other form of recordkeeping that confirms conformance with the start-up, shutdown, and malfunction plan for the event.
- (4) **Equipment leak records.** The owner or operator shall maintain records of the information specified in paragraphs (d)(4)(i) and (ii) of this section for closed vent systems and control devices if specified by the equipment leak provisions in a referencing subpart. The records specified in paragraph (d)(4)(i) of this section shall be retained for the life of the equipment. The records specified in paragraph (d)(4)(ii) of this section shall be retained for 5 years.
 - (i) The design specifications and performance demonstrations specified in paragraphs (d)(4)(i)(A) through (C) of this section.
 - (A) Detailed schematics, design specifications of the control device, and piping and instrumentation diagrams.
 - (B) The dates and descriptions of any changes in the design specifications.
 - (C) A description of the parameter or parameters monitored, as required in a referencing subpart, to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring.
 - (ii) Records of operation of closed vent systems and control devices, as specified in paragraphs (d)(4)(ii)(A) through (C) of this section.
 - (A) Dates and durations when the closed vent systems and control devices required are not operated as designed as indicated by the monitored parameters.
 - (B) Dates and durations during which the monitoring system or monitoring device is inoperative.
 - (C) Dates and durations of start-ups and shutdowns of control devices required in this subpart.

- (5) **Records of monitored parameters outside of range.** The owner or operator shall record the occurrences and the cause of periods when the monitored parameters are outside of the parameter ranges documented in the Notification of Compliance Status report. This information shall also be reported in the Periodic Report.

[64 FR 34866, June 29, 1999, as amended at 64 FR 63705, Nov. 22, 1999; 71 FR 20458, Apr. 20, 2006]

§ 63.999 Notifications and other reports.

(a) **Performance test and flare compliance assessment notifications and reports –**

- (1) **General requirements.** General requirements for performance test and flare compliance assessment notifications and reports are specified in paragraphs (a)(1)(i) through (iii) of this section.
- (i) The owner or operator shall notify the Administrator of the intention to conduct a performance test or flare compliance assessment at least 30 days before such a compliance demonstration is scheduled to allow the Administrator the opportunity to have an observer present. If after 30 days notice for such an initially scheduled compliance demonstration, there is a delay (due to operational problems, etc.) in conducting the scheduled compliance demonstration, the owner or operator of an affected facility shall notify the Administrator as soon as possible of any delay in the original demonstration date. The owner or operator shall provide at least 7 days prior notice of the rescheduled date of the compliance demonstration, or arrange a rescheduled date with the Administrator by mutual agreement.
- (ii) Unless specified differently in this subpart or a referencing subpart, performance test and flare compliance assessment reports, not submitted as part of a Notification of Compliance Status report, shall be submitted to the Administrator within 60 days of completing the test or determination.
- (iii) Any application for a waiver of an initial performance test or flare compliance assessment, as allowed by § 63.997(b)(2), shall be submitted no later than 90 days before the performance test or compliance assessment is required. The application for a waiver shall include information justifying the owner or operator's request for a waiver, such as the technical or economic infeasibility, or the impracticality, of the source performing the test.
- (iv) Any application to substitute a prior performance test or compliance assessment for an initial performance test or compliance assessment, as allowed by § 63.997(b)(1), shall be submitted no later than 90 days before the performance test or compliance test is required. The application for substitution shall include information demonstrating that the prior performance test or compliance assessment was conducted using the same methods specified in § 63.997(e) or § 63.987(b)(3), as applicable. The application shall also include information demonstrating that no process changes have been made since the test, or that the results of the performance test or compliance assessment reliably demonstrate compliance despite process changes.
- (2) **Performance test and flare compliance assessment report submittal and content requirements.** Performance test and flare compliance assessment reports shall be submitted as specified in paragraphs (a)(2)(i) through (iii) of this section.

- (i) For performance tests or flare compliance assessments, the Notification of Compliance Status or performance test and flare compliance assessment report shall include one complete test report as specified in paragraph (a)(2)(ii) of this section for each test method used for a particular kind of emission point and other applicable information specified in (a)(2)(iii) of this section. For additional tests performed for the same kind of emission point using the same method, the results and any other information required in applicable sections of this subpart shall be submitted, but a complete test report is not required.
- (ii) A complete test report shall include a brief process description, sampling site description, description of sampling and analysis procedures and any modifications to standard procedures, quality assurance procedures, record of operating conditions during the test, record of preparation of standards, record of calibrations, raw data sheets for field sampling, raw data sheets for field and laboratory analyses, documentation of calculations, and any other information required by the test method.
- (iii) The performance test or flare compliance assessment report shall also include the information specified in (a)(2)(iii)(A) through (C) of this section, as applicable.
 - (A) For flare compliance assessments, the owner or operator shall submit the records specified in § 63.998(a)(1)(i).
 - (B) For nonflare control device and halogen reduction device performance tests as required under § 63.988(b), § 63.990(b), § 63.994(b), or § 63.995(b), also submit the records specified in § 63.998(a)(2)(ii), as applicable.
 - (C) For recovery devices also submit the records specified in § 63.998(a)(3), as applicable.

(b) **Notification of Compliance Status –**

- (1) **Routing storage vessel or transfer rack emissions to a process or fuel gas system.** An owner or operator who elects to comply with § 63.982 by routing emissions from a storage vessel or transfer rack to a process or to a fuel gas system, as specified in § 63.984, shall submit as part of the Notification of Compliance Status the information specified in paragraphs (b)(1)(i) and (ii), or (iii) of this section, as applicable.
 - (i) If storage vessels emissions are routed to a process, the owner or operator shall submit the information specified in § 63.984(b)(2) and (3).
 - (ii) As specified in § 63.984(c), if storage vessels emissions are routed to a fuel gas system, the owner or operator shall submit a statement that the emission stream is connected to the fuel gas system and whether the conveyance system is subject to the requirements of § 63.983.
 - (iii) As specified in § 63.984(c), report that the transfer rack emission stream is being routed to a fuel gas system or process, when complying with a referencing subpart.
- (2) **Routing storage vessel or low throughput transfer rack emissions to a nonflare control device.** An owner or operator who elects to comply with § 63.982 by routing emissions from a storage vessel or low throughput transfer rack to a nonflare control device, as specified in § 63.985, shall submit, with the Notification of Compliance Status required by a referencing subpart, the applicable information specified in paragraphs (b)(2)(i) through (vi) of this section. Owners and operators who elect to comply with § 63.985(b)(1)(i) by submitting a design evaluation shall submit the information specified in paragraphs (b)(2)(i) through (iv) of this section. Owners and operators who elect to comply with § 63.985(b)(1)(ii) by submitting performance test results from a control device for a

storage vessel or low throughput transfer rack shall submit the information specified in paragraphs (b)(2)(i), (ii), (iv), and (v) of this section. Owners and operators who elect to comply with § 63.985(b)(1)(ii) by submitting performance test results from a shared control device shall submit the information specified in paragraph (b)(2)(vi) of this section.

- (i) A description of the parameter or parameters to be monitored to ensure that the control device is being properly operated and maintained, an explanation of the criteria used for selection of that parameter (or parameters), and the frequency with which monitoring will be performed (e.g., when the liquid level in the storage vessel is being raised). If continuous records are specified, indicate whether the provisions of § 63.999(c)(6) apply.
- (ii) The operating range for each monitoring parameter identified in the monitoring plan required by § 63.985(c)(1). The specified operating range shall represent the conditions for which the control device is being properly operated and maintained.
- (iii) The documentation specified in § 63.985(b)(1)(i), if the owner or operator elects to prepare a design evaluation.
- (iv) The provisions of paragraph (c)(6) of this section do not apply to any low throughput transfer rack for which the owner or operator has elected to comply with § 63.985 or to any storage vessel for which the owner or operator is not required, by the applicable monitoring plan established under § 63.985(c)(1), to keep continuous records. If continuous records are required, the owner or operator shall specify in the monitoring plan whether the provisions of paragraph (c)(6) of this section apply.
- (v) A summary of the results of the performance test described in § 63.985(b)(1)(ii). If such a performance test is conducted, submit the results of the performance test, including the information specified in § 63.999(a)(2)(ii) and (iii).
- (vi) Identification of the storage vessel or transfer rack and control device for which the performance test will be submitted, and identification of the emission point(s), if any, that share the control device with the storage vessel or transfer rack and for which the performance test will be conducted.

(3) **Operating range for monitored parameters.** The owner or operator shall submit as part of the Notification of Compliance Status, the operating range for each monitoring parameter identified for each control, recovery, or halogen reduction device as determined pursuant to § 63.996(c)(6). The specified operating range shall represent the conditions for which the control, recovery, or halogen reduction device is being properly operated and maintained. This report shall include the information in paragraphs (b)(3)(i) through (iii) of this section, as applicable, unless the range and the operating day have been established in the operating permit.

- (i) The specific range of the monitored parameter(s) for each emission point;
- (ii) The rationale for the specific range for each parameter for each emission point, including any data and calculations used to develop the range and a description of why the range indicates proper operation of the control, recovery, or halogen reduction device, as specified in paragraphs (b)(3)(ii)(A), (B), or (C) of this section, as applicable.
 - (A) If a performance test or TRE index value determination is required by a referencing subpart for a control, recovery or halogen reduction device, the range shall be based on the parameter values measured during the TRE index value determination or performance test

and may be supplemented by engineering assessments and/or manufacturer's recommendations. TRE index value determinations and performance testing are not required to be conducted over the entire range of permitted parameter values.

- (B) If a performance test or TRE index value determination is not required by a referencing subpart for a control, recovery, or halogen reduction device, the range may be based solely on engineering assessments and/or manufacturer's recommendations.
- (C) The range may be based on ranges or limits previously established under a referencing subpart.
- (iii) A definition of the source's operating day for purposes of determining daily average values of monitored parameters. The definition shall specify the times at which an operating day begins and ends.
- (4) **Halogen reduction device.** The owner or operator shall submit as part of the Notification of Compliance Status the information recorded pursuant to § 63.998(a)(4).
- (5) **Alternative recordkeeping.** The owner or operator shall notify the Administrator in the Notification of Compliance Status if the alternative recordkeeping requirements of § 63.998(b)(5) are being implemented. If the Notification of Compliance Status has already been submitted, the notification must be in the periodic report submitted immediately preceding implementation of the alternative, as specified in paragraph (c)(6)(iv) of this section.

(c) **Periodic reports.**

- (1) Periodic reports shall include the reporting period dates, the total source operating time for the reporting period, and, as applicable, all information specified in this section and in the referencing subpart, including reports of periods when monitored parameters are outside their established ranges.
- (2) For closed vent systems subject to the requirements of § 63.983, the owner or operator shall submit as part of the periodic report the information specified in paragraphs (c)(2)(i) through (iii) of this section, as applicable.
 - (i) The information recorded in § 63.998(d)(1)(iii)(B) through (E);
 - (ii) Reports of the times of all periods recorded under § 63.998(d)(1)(ii)(A) when the vent stream is diverted from the control device through a bypass line; and
 - (iii) Reports of all times recorded under § 63.998(d)(1)(ii)(B) when maintenance is performed in car-sealed valves, when the seal is broken, when the bypass line valve position is changed, or the key for a lock-and-key type configuration has been checked out.
- (3) For flares subject to this subpart, report all periods when all pilot flames were absent or the flare flame was absent as recorded in § 63.998(a)(1)(i)(C).
- (4) For storage vessels, the owner or operator shall include in each periodic report required the information specified in paragraphs (c)(4)(i) through (iii) of this section.
 - (i) For the 6-month period covered by the periodic report, the information recorded in § 63.998(d)(2)(ii)(A) through (C).

- (ii) For the time period covered by the periodic report and the previous periodic report, the total number of hours that the control system did not meet the requirements of § 63.983(a), § 63.985(a), or § 63.987(a) due to planned routine maintenance.
 - (iii) A description of the planned routine maintenance during the next 6-month periodic reporting period that is anticipated to be performed for the control system when it is not expected to meet the required control efficiency. This description shall include the type of maintenance necessary, planned frequency of maintenance, and expected lengths of maintenance periods.
- (5) If a control device other than a flare is used to control emissions from storage vessels or low throughput transfer racks, the periodic report shall describe each occurrence when the monitored parameters were outside of the parameter ranges documented in the Notification of Compliance Status in accordance with paragraph (b)(3) of this section. The description shall include the information specified in paragraphs (c)(5)(i) and (ii) of this section.
 - (i) Identification of the control device for which the measured parameters were outside of the established ranges, and
 - (ii) The cause for the measured parameters to be outside of the established ranges.
- (6) For process vents and transfer racks (except low throughput transfer racks), periodic reports shall include the information specified in paragraphs (c)(6)(i) through (iv) of this section.
 - (i) Periodic reports shall include the daily average values of monitored parameters, calculated as specified in § 63.998(b)(3)(i) for any days when the daily average value is outside the bounds as defined in § 63.998(c)(2)(iii) or (c)(3)(iii), or the data availability requirements defined in paragraphs (c)(6)(i)(A) through (D) of this section are not met, whether these excursions are excused or unexcused excursions. For excursions caused by lack of monitoring data, the duration of periods when monitoring data were not collected shall be specified. An excursion means any of the cases listed in paragraphs (c)(6)(i)(A) through (C) of this section. If the owner or operator elects not to retain the daily average values pursuant to § 63.998(b)(5)(ii)(A), the owner or operator shall report this in the Periodic Report.
 - (A) When the daily average value of one or more monitored parameters is outside the permitted range.
 - (B) When the period of control or recovery device operation is 4 hours or greater in an operating day and monitoring data are insufficient to constitute a valid hour of data for at least 75 percent of the operating hours.
 - (C) When the period of control or recovery device operation is less than 4 hours in an operating day and more than one of the hours during the period of operation does not constitute a valid hour of data due to insufficient monitoring data.
 - (D) Monitoring data are insufficient to constitute a valid hour of data as used in paragraphs (c)(6)(i)(B) and (C) of this section, if measured values are unavailable for any of the 15-minute periods within the hour.
 - (ii) Report all carbon-bed regeneration cycles during which the parameters recorded under § 63.998(a)(2)(ii)(C) were outside the ranges established in the Notification of Compliance Status or in the operating permit.

- (iii) The provisions of paragraph (c)(6)(i) and (ii) of this section do not apply to any low throughput transfer rack for which the owner or operator has elected to comply with § 63.985 or to any storage vessel for which the owner or operator is not required, by the applicable monitoring plan established under § 63.985(c)(1), to keep continuous records. If continuous records are required, the owner or operator shall specify in the monitoring plan whether the provisions of paragraphs (c)(6)(i) and (c)(6)(ii) of this section apply.
- (iv) If the owner or operator has chosen to use the alternative recordkeeping requirements of § 63.998(b)(5), and has not notified the Administrator in the Notification of Compliance Status that the alternative recordkeeping provisions are being implemented as specified in paragraph (b)(5) of this section, the owner or operator shall notify the Administrator in the Periodic Report submitted immediately preceding implementation of the alternative. The notifications specified in § 63.998(b)(5)(ii) shall be included in the next Periodic Report following the identified event.
- (7) As specified in § 63.997(c)(3), if an owner or operator at a facility not required to obtain a title V permit elects at a later date to replace an existing control or recovery device with a different control or recovery device, then the Administrator shall be notified by the owner or operator before implementing the change. This notification may be included in the facility's periodic reporting.

(d) **Requests for approval of monitoring alternatives –**

- (1) **Alternatives to the continuous operating parameter monitoring and recordkeeping provisions.** Requests for approval to use alternatives to continuous operating parameter monitoring and recordkeeping provisions, as provided for in § 63.996(d)(1), shall be submitted as specified in a referencing subpart, and the referencing subpart will govern the review and approval of such requests. The information specified in paragraphs (d)(1)(i) and (ii) of this section shall be included.
 - (i) A description of the proposed alternative system; and
 - (ii) Information justifying the owner or operator's request for an alternative method, such as the technical or economic infeasibility, or the impracticality, of the regulated source using the required method.
- (2) **Monitoring a different parameter than those listed.** Requests for approval to monitor a different parameter than those established in § 63.996(c)(6) of this section or to set unique monitoring parameters, as provided for in § 63.996(d)(2), shall be submitted as specified as specified in a referencing subpart, and the referencing subpart will govern the review and approval of such requests. The information specified in paragraphs (d)(2)(i) through (iii) of this section shall be included in the request.
 - (i) A description of the parameter(s) to be monitored to ensure the control technology or pollution prevention measure is operated in conformance with its design and achieves the specified emission limit, percent reduction, or nominal efficiency, and an explanation of the criteria used to select the parameter(s);
 - (ii) A description of the methods and procedures that will be used to demonstrate that the parameter indicates proper operation of the control device, the schedule for this demonstration, and a statement that the owner or operator will establish a range for the monitored parameter(s) as part of the Notification of Compliance Status if required under a referencing subpart, unless this information has already been submitted; and

- (iii) The frequency and content of monitoring, recording, and reporting, if monitoring and recording is not continuous, or if reports of daily average values when the monitored parameter value is outside the established range will not be included in periodic reports under paragraph (c) of this section. The rationale for the proposed monitoring, recording, and reporting system shall be included.

[64 FR 34866, June 29, 1999, as amended at 64 FR 63705, Nov. 22, 1999]

This content is from the eCFR and is authoritative but unofficial.

Title 40 —Protection of Environment

Chapter I —Environmental Protection Agency

Subchapter C —Air Programs

Part 63 —National Emission Standards for Hazardous Air Pollutants for Source Categories

Authority: 42 U.S.C. 7401 *et seq.*

Source: 57 FR 61992, Dec. 29, 1992, unless otherwise noted.

Subpart EEEE National Emission Standards for Hazardous Air Pollutants: Organic Liquids Distribution (Non-Gasoline)

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Subpart EEEE—National Emission Standards for Hazardous Air Pollutants: Organic Liquids Distribution (Non-Gasoline)

Source: 69 FR 5063, Feb. 3, 2004, unless otherwise noted.

WHAT THIS SUBPART COVERS

§ 63.2330 What is the purpose of this subpart?

This subpart establishes national emission limitations, operating limits, and work practice standards for organic hazardous air pollutants (HAP) emitted from organic liquids distribution (OLD) (non-gasoline) operations at major sources of HAP emissions. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations, operating limits, and work practice standards.

§ 63.2334 Am I subject to this subpart?

- (a) Except as provided for in paragraphs (b) and (c) of this section, you are subject to this subpart if you own or operate an OLD operation that is located at, or is part of, a major source of HAP emissions. An OLD operation may occupy an entire plant site or be collocated with other industrial (e.g., manufacturing) operations at the same plant site.
- (b) Organic liquid distribution operations located at research and development facilities, consistent with section 112(c)(7) of the Clean Air Act (CAA), are not subject to this subpart.
- (c) Organic liquid distribution operations do not include the activities and equipment, including product loading racks, used to process, store, or transfer organic liquids at facilities listed in paragraph (c) (1) and (2) of this section.
 - (1) Oil and natural gas production field facilities, as the term “facility” is defined in § 63.761 of subpart HH.
 - (2) Natural gas transmission and storage facilities, as the term “facility” is defined in § 63.1271 of subpart HHH.

§ 63.2338 What parts of my plant does this subpart cover?

- (a) This subpart applies to each new, reconstructed, or existing OLD operation affected source.
- (b) Except as provided in paragraph (c) of this section, the affected source is the collection of activities and equipment used to distribute organic liquids into, out of, or within a facility that is a major source of HAP. The affected source is composed of:
 - (1) All storage tanks storing organic liquids.
 - (2) All transfer racks at which organic liquids are loaded into or unloaded out of transport vehicles and/or containers.

- (3) All equipment leak components in organic liquids service that are associated with:
 - (i) Storage tanks storing organic liquids;
 - (ii) Transfer racks loading or unloading organic liquids;
 - (iii) Pipelines that transfer organic liquids directly between two storage tanks that are subject to this subpart;
 - (iv) Pipelines that transfer organic liquids directly between a storage tank subject to this subpart and a transfer rack subject to this subpart; and
 - (v) Pipelines that transfer organic liquids directly between two transfer racks that are subject to this subpart.
- (4) All transport vehicles while they are loading or unloading organic liquids at transfer racks subject to this subpart.
- (5) All containers while they are loading or unloading organic liquids at transfer racks subject to this subpart.
- (c) The equipment listed in paragraphs (c)(1) through (3) of this section and used in the identified operations is excluded from the affected source.
 - (1) Storage tanks, transfer racks, transport vehicles, containers, and equipment leak components that are part of an affected source under another 40 CFR part 63 national emission standards for hazardous air pollutants (NESHAP).
 - (2) Non-permanent storage tanks, transfer racks, transport vehicles, containers, and equipment leak components when used in special situation distribution loading and unloading operations (such as maintenance or upset liquids management).
 - (3) Storage tanks, transfer racks, transport vehicles, containers, and equipment leak components when used to conduct maintenance activities, such as stormwater management, liquid removal from tanks for inspections and maintenance, or changeovers to a different liquid stored in a storage tank.
- (d) An affected source is a new affected source if you commenced construction of the affected source after April 2, 2002, and you meet the applicability criteria in § 63.2334 at the time you commenced operation.
- (e) An affected source is reconstructed if you meet the criteria for reconstruction as defined in § 63.2.
- (f) An affected source is existing if it is not new or reconstructed.

[69 FR 5063, Feb. 3, 2004, as amended at 71 FR 42904, July 28, 2006; 85 FR 40761, July 7, 2020]

§ 63.2342 When do I have to comply with this subpart?

- (a) Except as specified in paragraph (e) of this section, if you have a new or reconstructed affected source, you must comply with this subpart according to the schedule identified in paragraph (a)(1), (2), or (3) of this section, as applicable.
 - (1)

- (i) Except as provided in paragraph (a)(1)(ii) of this section, if you startup your new affected source on or before February 3, 2004 or if you reconstruct your affected source on or before February 3, 2004, you must comply with the emission limitations, operating limits, and work practice standards for new and reconstructed sources in this subpart no later than February 3, 2004.
- (ii) For any emission source listed in paragraph § 63.2338(b) at an affected source that commenced construction or reconstruction after April 2, 2002, but before February 3, 2004, that is required to be controlled based on the applicability criteria in this subpart, but:
 - (A) Would not have been required to be controlled based on the applicability criteria as proposed for this subpart, you must comply with the emission limitations, operating limits, and work practice standards for each such emission source based on the schedule found in paragraph (b) of this section or at startup, whichever is later; or
 - (B) Would have been subject to a less stringent degree of control requirement as proposed for this subpart, you must comply with the emission limitations, operating limits, and work practice standards in this subpart for each such emission source based on the schedule found in paragraph (b) of this section or at startup, whichever is later, and if you start up your affected new or reconstructed source before February 5, 2007, you must comply with the emission limitations, operating limits, and work practice standards for each such emission source as proposed for this subpart, until you are required to comply with the emission limitations, operating limits, and work practice standards in this subpart for each such emission source based on the schedule found in paragraph (b) of this section.
- (2) If you commence construction of or reconstruct your affected source after February 3, 2004, you must comply with the emission limitations, operating limits, and work practice standards for new and reconstructed sources in this subpart upon startup of your affected source.
- (3) If, after startup of a new affected source, the total actual annual facility-level organic liquid loading volume at that source exceeds the criteria for control in Table 2 to this subpart, items 9 and 10, the owner or operator must comply with the transfer rack requirements specified in § 63.2346(b) immediately; that is, be in compliance the first day of the period following the end of the 3-year period triggering the control criteria.
- (b) Except as specified in paragraph (e) of this section, if you have an existing affected source, you must comply with this subpart according to the schedule identified in paragraph (b)(1), (2), or (3) of this section, as applicable.
 - (1) If you have an existing affected source, you must comply with the emission limitations, operating limits, and work practice standards for existing affected sources no later than February 5, 2007, except as provided in paragraphs (b)(2) and (3) of this section.
 - (2) Floating roof storage tanks at existing affected sources must be in compliance with the work practice standards in Table 4 to this subpart, item 1, at all times after the next degassing and cleaning activity or within 10 years after February 3, 2004, whichever occurs first. If the first degassing and cleaning activity occurs during the 3 years following February 3, 2004, the compliance date is February 5, 2007.
 - (3)

- (i) If an addition or change other than reconstruction as defined in § 63.2 is made to an existing affected facility that causes the total actual annual facility-level organic liquid loading volume to exceed the criteria for control in Table 2 to this subpart, items 7 and 8, the owner or operator must comply with the transfer rack requirements specified in § 63.2346(b) immediately; that is, be in compliance the first day of the period following the end of the 3-year period triggering the control criteria.
- (ii) If the owner or operator believes that compliance with the transfer rack emission limits cannot be achieved immediately, as specified in paragraph (b)(3)(i) of this section, the owner or operator may submit a request for a compliance extension, as specified in paragraphs (b)(3)(ii)(A) through (I) of this section. Subject to paragraph (b)(3)(ii)(B) of this section, until an extension of compliance has been granted by the Administrator (or a State with an approved permit program) under this paragraph (b)(3)(ii), the owner or operator of the transfer rack subject to the requirements of this section shall comply with all applicable requirements of this subpart. Advice on requesting an extension of compliance may be obtained from the Administrator (or the State with an approved permit program).
 - (A) **Submittal.** The owner or operator shall submit a request for a compliance extension to the Administrator (or a State, when the State has an approved 40 CFR part 70 permit program and the source is required to obtain a 40 CFR part 70 permit under that program, or a State, when the State has been delegated the authority to implement and enforce the emission standard for that source) seeking an extension allowing the source up to 1 additional year to comply with the transfer rack standard, if such additional period is necessary for the installation of controls. The owner or operator of the affected source who has requested an extension of compliance under this paragraph (b)(3)(ii)(A) and who is otherwise required to obtain a title V permit shall apply for such permit, or apply to have the source's title V permit revised to incorporate the conditions of the extension of compliance. The conditions of an extension of compliance granted under this paragraph (b)(3)(ii)(A) will be incorporated into the affected source's title V permit according to the provisions of 40 CFR part 70 or Federal title V regulations in this chapter (42 U.S.C. 7661), whichever are applicable.
 - (B) **When to submit.**
 - (1) Any request submitted under paragraph (b)(3)(ii)(A) of this section must be submitted in writing to the appropriate authority no later than 120 days prior to the affected source's compliance date (as specified in paragraph (b)(3)(i) of this section), except as provided for in paragraph (b)(3)(ii)(B)(2) of this section. Nonfrivolous requests submitted under this paragraph (b)(3)(ii)(B)(1) will stay the applicability of the rule as to the emission points in question until such time as the request is granted or denied. A denial will be effective as of the date of denial.
 - (2) An owner or operator may submit a compliance extension request after the date specified in paragraph (b)(3)(ii)(B)(1) of this section provided the need for the compliance extension arose after that date, and before the otherwise applicable compliance date and the need arose due to circumstances beyond reasonable control of the owner or operator. This request must include, in addition to the information required in paragraph (b)(3)(ii)(C) of this section, a statement of the reasons additional time is needed and the date when the owner or operator first learned of the problems. Nonfrivolous requests submitted under this paragraph

(b)(3)(ii)(B)(2) will stay the applicability of the rule as to the emission points in question until such time as the request is granted or denied. A denial will be effective as of the original compliance date.

(C) **Information required.** The request for a compliance extension under paragraph (b)(3)(ii)(A) of this section shall include the following information:

- (1) The name and address of the owner or operator and the address of the existing source if it differs from the address of the owner or operator;
- (2) The name, address, and telephone number of a contact person for further information;
- (3) An identification of the organic liquid distribution operation and of the specific equipment for which additional compliance time is required;
- (4) A description of the controls to be installed to comply with the standard;
- (5) Justification for the length of time being requested; and
- (6) A compliance schedule, including the date by which each step toward compliance will be reached. At a minimum, the list of dates shall include:
 - (i) The date by which on-site construction, installation of emission control equipment, or a process change is planned to be initiated;
 - (ii) The date by which on-site construction, installation of emission control equipment, or a process change is to be completed; and
 - (iii) The date by which final compliance is to be achieved.

(D) **Approval of request for extension of compliance.** Based on the information provided in any request made under paragraph (b)(3)(ii)(C) of this section, or other information, the Administrator (or the State with an approved permit program) may grant an extension of compliance with the transfer rack emission standard, as specified in paragraph (b)(3)(ii) of this section. The extension will be in writing and will—

- (1) Identify each affected source covered by the extension;
- (2) Specify the termination date of the extension;
- (3) Specify the dates by which steps toward compliance are to be taken, if appropriate;
- (4) Specify other applicable requirements to which the compliance extension applies (e.g., performance tests);
- (5) Specify the contents of the progress reports to be submitted and the dates by which such reports are to be submitted, if required pursuant to paragraph (b)(3)(ii)(E) of this section.
- (6) Under paragraph (b)(3)(ii) of this section, specify any additional conditions that the Administrator (or the State) deems necessary to assure installation of the necessary controls and protection of the health of persons during the extension period.

- (E) **Progress reports.** The owner or operator of an existing source that has been granted an extension of compliance under paragraph (b)(3)(ii)(D) of this section may be required to submit to the Administrator (or the State with an approved permit program) progress reports indicating whether the steps toward compliance outlined in the compliance schedule have been reached.
- (F) **Notification of approval or intention to deny.**
 - (1) The Administrator (or the State with an approved permit program) will notify the owner or operator in writing of approval or intention to deny approval of a request for an extension of compliance within 30 calendar days after receipt of sufficient information to evaluate a request submitted under paragraph (b)(3)(ii) of this section. The Administrator (or the State) will notify the owner or operator in writing of the status of his/her application; that is, whether the application contains sufficient information to make a determination, within 30 calendar days after receipt of the original application and within 30 calendar days after receipt of any supplementary information that is submitted. The 30-day approval or denial period will begin after the owner or operator has been notified in writing that his/her application is complete. Failure by the Administrator to act within 30 calendar days to approve or disapprove a request submitted under paragraph (b)(3)(ii) of this section does not constitute automatic approval of the request.
 - (2) When notifying the owner or operator that his/her application is not complete, the Administrator will specify the information needed to complete the application and provide notice of opportunity for the applicant to present, in writing, within 30 calendar days after he/she is notified of the incomplete application, additional information or arguments to the Administrator to enable further action on the application.
 - (3) Before denying any request for an extension of compliance, the Administrator (or the State with an approved permit program) will notify the owner or operator in writing of the Administrator's (or the State's) intention to issue the denial, together with:
 - (i) Notice of the information and findings on which the intended denial is based; and
 - (ii) Notice of opportunity for the owner or operator to present in writing, within 15 calendar days after he/she is notified of the intended denial, additional information or arguments to the Administrator (or the State) before further action on the request.
 - (4) The Administrator's final determination to deny any request for an extension will be in writing and will set forth the specific grounds on which the denial is based. The final determination will be made within 30 calendar days after presentation of additional information or argument (if the application is complete), or within 30 calendar days after the final date specified for the presentation if no presentation is made.
- (G) **Termination of extension of compliance.** The Administrator (or the State with an approved permit program) may terminate an extension of compliance at an earlier date than specified if any specification under paragraph (b)(3)(ii)(D)(3) or paragraph (b)(3)(ii)(D)(4)

of this section is not met. Upon a determination to terminate, the Administrator will notify, in writing, the owner or operator of the Administrator's determination to terminate, together with:

- (1) Notice of the reason for termination; and
- (2) Notice of opportunity for the owner or operator to present in writing, within 15 calendar days after he/she is notified of the determination to terminate, additional information or arguments to the Administrator before further action on the termination.
- (3) A final determination to terminate an extension of compliance will be in writing and will set forth the specific grounds on which the termination is based. The final determination will be made within 30 calendar days after presentation of additional information or arguments, or within 30 calendar days after the final date specified for the presentation if no presentation is made.

(H) The granting of an extension under this section shall not abrogate the Administrator's authority under section 114 of the CAA.

(I) **Limitation on use of compliance extension.** The owner or operator may request an extension of compliance under the provisions specified in paragraph (b)(3)(ii) of this section only once for each facility.

(c) If you have an area source that does not commence reconstruction but increases its emissions or its potential to emit such that it becomes a major source of HAP emissions and an existing affected source subject to this subpart, you must be in compliance by 3 years after the area source becomes a major source.

(d) You must meet the notification requirements in §§ 63.2343 and 63.2382(a), as applicable, according to the schedules in § 63.2382(a) and (b)(1) through (2) and in subpart A of this part. Some of these notifications must be submitted before the compliance dates for the emission limitations, operating limits, and work practice standards in this subpart.

(e) An affected source that commenced construction or reconstruction on or before October 21, 2019, must be in compliance with the requirements listed in paragraphs (e)(1) through (5) of this section upon initial startup or July 7, 2023, whichever is later. An affected source that commenced construction or reconstruction after October 21, 2019, must be in compliance with the requirements listed in paragraphs (e)(1) through (5) of this section upon initial startup or July 7, 2020, whichever is later.

(1) The requirements for storage tanks not requiring control specified in § 63.2343(b)(4).

(2) The requirements for storage tanks at an existing affected source specified in §§ 63.2346(a)(5) and (6), 63.2386(d)(3)(iii), 63.2396(a)(4), footnote (2) to Table 2 to this subpart, and Table 2b to this subpart.

(3) The flare requirements specified in §§ 63.2346(k), 63.2382(d)(2)(ix), 63.2386(d)(5), 63.2390(h), footnote (1) to Table 2 to this subpart, item 7.d, to Table 3 to this subpart, items 1.a.iii and 2.a.iii of Table 8 to this subpart, and item 7.e of Table 9 to this subpart.

(4) The requirements specified in §§ 63.2346(l), 63.2350(d), 63.2366(c), 63.2390(f) and (g), 63.2386(c)(11) and (12), 63.2386(d)(1)(xiii) and (f) through (j), 63.2378(e), footnote (1) to Table 9 to this subpart, and items 1.a.i and 2.a.ii of Table 10 to this subpart.

- (5) The performance testing requirements specified in § 63.2354(b)(6).

[69 FR 5063, Feb. 3, 2004, as amended at 71 FR 42905, July 28, 2006; 85 FR 40761, July 7, 2020]

§ 63.2343 What are my requirements for emission sources not requiring control?

This section establishes the notification, recordkeeping, and reporting requirements for emission sources identified in § 63.2338 that do not require control under this subpart (i.e., under § 63.2346(a) through (e)). Such emission sources are not subject to any other notification, recordkeeping, or reporting sections in this subpart, including § 63.2350(c), except as indicated in paragraphs (a) through (d) of this section.

- (a) For each storage tank subject to this subpart having a capacity of less than 18.9 cubic meters (5,000 gallons) and for each transfer rack subject to this subpart that only unloads organic liquids (i.e., no organic liquids are loaded at any of the transfer racks), you must keep documentation that verifies that each storage tank and transfer rack identified in this paragraph (a) is not required to be controlled. The documentation must be kept up-to-date (i.e., all such emission sources at a facility are identified in the documentation regardless of when the documentation was last compiled) and must be in a form suitable and readily available for expeditious inspection and review according to § 63.10(b)(1), including records stored in electronic form in a separate location. The documentation may consist of identification of the tanks and transfer racks identified in this paragraph (a) on a plant site plan or process and instrumentation diagram (P&ID).
- (b) Except as specified in paragraph (b)(4) of this section, for each storage tank subject to this subpart having a capacity of 18.9 cubic meters (5,000 gallons) or more that is not subject to control based on the criteria specified in Table 2 to this subpart, items 1 through 6, you must comply with the requirements specified in paragraphs (b)(1) through (3) of this section.
 - (1)
 - (i) You must submit the information in § 63.2386(c)(1), (2), (3), and (10)(i) in either the Notification of Compliance Status, according to the schedule specified in Table 12 to this subpart, or in your first Compliance report, according to the schedule specified in § 63.2386(b), whichever occurs first.
 - (ii)
 - (A) If you submit your first Compliance report before your Notification of Compliance Status, the Notification of Compliance Status must contain the information specified in § 63.2386(d)(3) and (4) if any of the changes identified in paragraph (d) of this section have occurred since the filing of the first Compliance report. If none of the changes identified in paragraph (d) of this section have occurred since the filing of the first Compliance report, you do not need to report the information specified in § 63.2386(c)(10)(i) when you submit your Notification of Compliance Status.
 - (B) If you submit your Notification of Compliance Status before your first Compliance report, your first Compliance report must contain the information specified in § 63.2386(d)(3) and (4) if any of the changes specified in paragraph (d) of this section have occurred since the filing of the Notification of Compliance Status.

- (iii) If you are already submitting a Notification of Compliance Status or a first Compliance report under § 63.2386(c), you do not need to submit a separate Notification of Compliance Status or first Compliance report for each storage tank that meets the conditions identified in paragraph (b) of this section (i.e., a single Notification of Compliance Status or first Compliance report should be submitted).

(2)

- (i) You must submit a subsequent Compliance report according to the schedule in § 63.2386(b) whenever any of the events in paragraph (d) of this section occur, as applicable.
- (ii) Your subsequent Compliance reports must contain the information in § 63.2386(c)(1), (2), (3) and, as applicable, in § 63.2386(d)(3) and (4). If you are already submitting a subsequent Compliance report under § 63.2386(d), you do not need to submit a separate subsequent Compliance report for each storage tank that meets the conditions identified in paragraph (b) of this section (i.e., a single subsequent Compliance report should be submitted).

- (3) For each storage tank that meets the conditions identified in paragraph (b) of this section, you must keep documentation, including a record of the annual average true vapor pressure of the total Table 1 organic HAP in the stored organic liquid, that verifies the storage tank is not required to be controlled under this subpart. The documentation must be kept up-to-date and must be in a form suitable and readily available for expeditious inspection and review according to § 63.10(b)(1), including records stored in electronic form in a separate location.

- (4) Beginning no later than the compliance dates specified in § 63.2342(e), the requirements specified in paragraphs (b)(1) through (3) of this section apply to the following storage tanks:

- (i) Storage tanks at an existing affected source subject to this subpart having a capacity of 18.9 cubic meters (5,000 gallons) or more that are not subject to control based on the criteria specified in Table 2b to this subpart, items 1 through 3.
- (ii) Storage tanks at a reconstructed or new affected source subject to this subpart having a capacity of 18.9 cubic meters (5,000 gallons) or more that are not subject to control based on the criteria specified in Table 2 to this subpart, items 3 through 6.

- (c) For each transfer rack subject to this subpart that loads organic liquids but is not subject to control based on the criteria specified in Table 2 to this subpart, items 7 through 10, you must comply with the requirements specified in paragraphs (c)(1) through (3) of this section.

(1)

- (i) You must submit the information in § 63.2386(c)(1), (2), (3), and (10)(i) in either the Notification of Compliance Status, according to the schedule specified in Table 12 to this subpart, or a first Compliance report, according to the schedule specified in § 63.2386(b), whichever occurs first.

(ii)

- (A) If you submit your first Compliance report before your Notification of Compliance Status, the Notification of Compliance Status must contain the information specified in § 63.2386(d)(3) and (4) if any of the changes identified in paragraph (d) of this section have occurred since the filing of the first Compliance report. If none of the changes identified in

paragraph (d) of this section have occurred since the filing of the first Compliance report, you do not need to report the information specified in § 63.2386(c)(10)(i) when you submit your Notification of Compliance Status.

(B) If you submit your Notification of Compliance Status before your first Compliance report, your first Compliance report must contain the information specified in § 63.2386(d)(3) and (4) if any of the changes specified in paragraph (d) of this section have occurred since the filing of the Notification of Compliance Status.

(iii) If you are already submitting a Notification of Compliance Status or a first Compliance report under § 63.2386(c), you do not need to submit a separate Notification of Compliance Status or first Compliance report for each transfer rack that meets the conditions identified in this paragraph (c) (i.e., a single Notification of Compliance Status or first Compliance report should be submitted).

(2)

(i) You must submit a subsequent Compliance report according to the schedule in § 63.2386(b) whenever any of the events in paragraph (d) of this section occur, as applicable.

(ii) Your subsequent Compliance reports must contain the information in § 63.2386(c)(1), (2), (3) and, as applicable, in § 63.2386(d)(3) and (4). If you are already submitting a subsequent Compliance report under § 63.2386(d), you do not need to submit a separate subsequent Compliance report for each transfer rack that meets the conditions identified in paragraph (c) of this section (i.e., a single subsequent Compliance report should be submitted).

(3) For each transfer rack that meets the conditions identified in paragraph (c) of this section, you must keep documentation, including the records specified in § 63.2390(d), that verifies the transfer rack is not required to be controlled under this subpart. The documentation must be kept up-to-date and must be in a form suitable and readily available for expeditious inspection and review according to § 63.10(b)(1), including records stored in electronic form in a separate location.

(d) If one or more of the events identified in paragraphs (d)(1) through (4) of this section occur since the filing of the Notification of Compliance Status or the last Compliance report, you must submit a subsequent Compliance report as specified in paragraphs (b)(2) and (c)(2) of this section.

(1) Any storage tank or transfer rack became subject to control under this subpart EEEE; or

(2) Any storage tank equal to or greater than 18.9 cubic meters (5,000 gallons) became part of the affected source but is not subject to any of the emission limitations, operating limits, or work practice standards of this subpart; or

(3) Any transfer rack (except those racks at which only unloading of organic liquids occurs) became part of the affected source; or

(4) Any of the information required in § 63.2386(c)(1), § 63.2386(c)(2), or § 63.2386(c)(3) has changed.

[71 FR 42906, July 28, 2006, as amended at 73 FR 21830, Apr. 23, 2008; 85 FR 40761, July 7, 2020]

EMISSION LIMITATIONS, OPERATING LIMITS, AND WORK PRACTICE STANDARDS

§ 63.2346 What emission limitations, operating limits, and work practice standards must I meet?

- (a) **Storage tanks.** Except as specified in paragraphs (a)(5) and (6) and (l) of this section, for each storage tank storing organic liquids that meets the tank capacity and liquid vapor pressure criteria for control in Table 2 to this subpart, items 1 through 5, you must comply with paragraph (a)(1), (2), (3), or (4) of this section. For each storage tank storing organic liquids that meets the tank capacity and liquid vapor pressure criteria for control in Table 2 to this subpart, item 6, you must comply with paragraph (a)(1), (2), or (4) of this section.
- (1) Meet the emission limits specified in Table 2 or 2b to this subpart and comply with paragraph (l) of this section and the applicable requirements specified in subpart SS of this part, for meeting emission limits, except substitute the term "storage tank" at each occurrence of the term "storage vessel" in subpart SS.
 - (2) Route emissions to fuel gas systems or back into a process as specified in subpart SS of this part. If you comply with this paragraph, then you must also comply with the requirements specified in paragraph (l) of this section.
 - (3) Comply with 40 CFR part 63, subpart WW (control level 2).
 - (4) Use a vapor balancing system that complies with the requirements specified in paragraphs (a)(4)(i) through (vii) of this section and with the recordkeeping requirements specified in § 63.2390(e).
 - (i) The vapor balancing system must be designed and operated to route organic HAP vapors displaced from loading of the storage tank to the transport vehicle from which the storage tank is filled.
 - (ii) Transport vehicles must have a current certification in accordance with the United States Department of Transportation (U.S. DOT) qualification and maintenance requirements of 49 CFR part 180, subparts E (for cargo tanks) and F (for tank cars).
 - (iii) Organic liquids must only be unloaded from cargo tanks or tank cars when vapor collection systems are connected to the storage tank's vapor collection system.
 - (iv) No pressure relief device on the storage tank, on the vapor return line, or on the cargo tank or tank car, shall open during loading or as a result of diurnal temperature changes (breathing losses).
 - (v) Pressure relief devices must be set to no less than 2.5 pounds per square inch gauge (psig) at all times to prevent breathing losses. Pressure relief devices may be set at values less than 2.5 psig if the owner or operator provides rationale in the notification of compliance status report explaining why the alternative value is sufficient to prevent breathing losses at all times. The owner or operator shall comply with paragraphs (a)(4)(v)(A) through (C) of this section for each relief valve.
 - (A) The relief valve shall be monitored quarterly using the method described in § 63.180(b).
 - (B) An instrument reading of 500 parts per million by volume (ppmv) or greater defines a leak.
 - (C) When a leak is detected, it shall be repaired as soon as practicable, but no later than 5 days after it is detected, and the owner or operator shall comply with the recordkeeping requirements of § 63.181(d)(1) through (4).

- (vi) Cargo tanks and tank cars that deliver organic liquids to a storage tank must be reloaded or cleaned at a facility that utilizes the control techniques specified in paragraph (a)(4)(vi)(A) or (a)(4)(vi)(B) of this section.
 - (A) The cargo tank or tank car must be connected to a closed-vent system with a control device that reduces inlet emissions of total organic HAP by 95 percent by weight or greater or to an exhaust concentration less than or equal to 20 ppmv, on a dry basis corrected to 3 percent oxygen for combustion devices using supplemental combustion air.
 - (B) A vapor balancing system designed and operated to collect organic HAP vapor displaced from the cargo tank or tank car during reloading must be used to route the collected vapor to the storage tank from which the liquid being transferred originated or to another storage tank connected to a common header.
- (vii) The owner or operator of the facility where the cargo tank or tank car is reloaded or cleaned must comply with paragraphs (a)(4)(vii)(A) through (D) of this section.
 - (A) Submit to the owner or operator of the storage tank and to the Administrator a written certification that the reloading or cleaning facility will meet the requirements of paragraph (a)(4)(vii)(A) through (C) of this section. The certifying entity may revoke the written certification by sending a written statement to the owner or operator of the storage tank giving at least 90 days notice that the certifying entity is rescinding acceptance of responsibility for compliance with the requirements of this paragraph (a)(4)(vii) of this section.
 - (B) If complying with paragraph (a)(4)(vi)(A) of this section, comply with the requirements for a closed vent system and control device as specified in this subpart EEEE. The notification requirements in § 63.2382 and the reporting requirements in § 63.2386 do not apply to the owner or operator of the offsite cleaning or reloading facility.
 - (C) If complying with paragraph (a)(4)(vi)(B) of this section, keep the records specified in § 63.2390(e)(3) or equivalent recordkeeping approved by the Administrator.
 - (D) After the compliance dates specified in § 63.2342, at an offsite reloading or cleaning facility subject to § 63.2346(a)(4), compliance with the monitoring, recordkeeping, and reporting provisions of any other subpart of this part 63 that has monitoring, recordkeeping, and reporting provisions constitutes compliance with the monitoring, recordkeeping and reporting provisions of § 63.2346(a)(4)(vii)(B) or § 63.2346(a)(4)(vii)(C). You must identify in your notification of compliance status report required by § 63.2382(d) the subpart of this part 63 with which the owner or operator of the offsite reloading or cleaning facility complies.
- (5) Beginning no later than the compliance dates specified in § 63.2342(e), the tank capacity criteria, liquid vapor pressure criteria, and emission limits specified for storage tanks at an existing affected source in Table 2 of this subpart, item 1 no longer apply. Instead, for each storage tank at an existing affected source storing organic liquids that meets the tank capacity and liquid vapor pressure criteria for control in Table 2b to this subpart, items 1 through 3, you must comply with paragraph (a)(1), (2), (3), or (4) and paragraph (a)(6) of this section.
- (6) Beginning no later than the compliance dates specified in § 63.2342(e), tank emissions during storage tank shutdown operations (i.e., emptying and degassing of a storage tank) for each storage tank at an affected source storing organic liquids that meets the tank capacity and liquid vapor

pressure criteria for control in items 2 through 6 of Table 2 to this subpart, or items 1 through 3 of Table 2b to this subpart, you must comply with paragraphs (a)(6)(i) through (iv) of this section during tank emptying and degassing until the vapor space concentration in the tank is less than 10 percent of the lower explosive limit (LEL). The owner or operator must determine the concentration using process instrumentation or portable measurement devices and follow procedures for calibration and maintenance according to manufacturer's specifications.

- (i) Remove organic liquids from the storage tank as much as practicable;
- (ii) Comply with either of the following:
 - (A) The requirements of Table 2 or 2b to this subpart, item 1.a.i. as applicable; OR,
 - (B) The requirements of Table 4 to this subpart, item 1.b.
- (iii) Comply with the requirements in § 63.2350(d) for each storage tank shutdown event and maintain records necessary to demonstrate compliance with the requirements in § 63.2350(d) including, if appropriate, records of existing standard site procedures used to empty and degas (deinventory) equipment for safety purposes.
- (iv) For floating roof storage tanks, the storage tank may be opened to set up equipment (e.g., making connections to a temporary control device) for the shutdown operations but must not be actively degassed during this time period.

(b) **Transfer racks.** For each transfer rack that is part of the collection of transfer racks that meets the total actual annual facility-level organic liquid loading volume criterion for control in Table 2 to this subpart, items 7 through 10, you must comply with paragraph (b)(1), (b)(2), or (b)(3) of this section for each arm in the transfer rack loading an organic liquid whose organic HAP content meets the organic HAP criterion for control in Table 2 to this subpart, items 7 through 10. For existing affected sources, you must comply with paragraph (b)(1), (b)(2), or (b)(3)(i) of this section during the loading of organic liquids into transport vehicles. For new affected sources, you must comply with paragraph (b)(1), (b)(2), or (b)(3)(i) and (ii) of this section during the loading of organic liquids into transport vehicles and containers. If the total actual annual facility-level organic liquid loading volume at any affected source is equal to or greater than the loading volume criteria for control in Table 2 to this subpart, but at a later date is less than the loading volume criteria for control, compliance with paragraph (b)(1), (b)(2), or (b)(3) of this section is no longer required. For new sources and reconstructed sources, as defined in § 63.2338(d) and (e), if at a later date, the total actual annual facility-level organic liquid loading volume again becomes equal to or greater than the loading volume criteria for control in Table 2 to this subpart, the owner or operator must comply with paragraph (b)(1), (b)(2), or (b)(3)(i) and (ii) of this section immediately, as specified in § 63.2342(a)(3). For existing sources, as defined in § 63.2338(f), if at a later date, the total actual annual facility-level organic liquid loading volume again becomes equal to or greater than the loading volume criteria for control in Table 2 to this subpart, the owner or operator must comply with paragraph (b)(1), (b)(2), or (b)(3)(i) of this section immediately, as specified in § 63.2342(b)(3)(i), unless an alternative compliance schedule has been approved under § 63.2342(b)(3)(ii) and subject to the use limitation specified in § 63.2342(b)(3)(ii)(I).

- (1) Meet the emission limits specified in Table 2 to this subpart and comply with paragraph (I) of this section and the applicable requirements for transfer racks specified in subpart SS of this part, for meeting emission limits.

- (2) Route emissions to fuel gas systems or back into a process as specified in subpart SS of this part. If you comply with this paragraph, then you must also comply with the requirements specified in paragraph (l) of this section.
- (3)
 - (i) Use a vapor balancing system that routes organic HAP vapors displaced from the loading of organic liquids into transport vehicles to the storage tank from which the liquid being loaded originated or to another storage tank connected to a common header.
 - (ii) Use a vapor balancing system that routes the organic HAP vapors displaced from the loading of organic liquids into containers directly (e.g., no intervening tank or containment area such as a room) to the storage tank from which the liquid being loaded originated or to another storage tank connected to a common header.
- (c) **Equipment leak components.** For each pump, valve, and sampling connection that operates in organic liquids service for at least 300 hours per year, you must comply with paragraph (l) of this section and the applicable requirements under subpart TT of this part (control level 1), subpart UU of this part (control level 2), or subpart H of this part. Pumps, valves, and sampling connectors that are insulated to provide protection against persistent sub-freezing temperatures are subject to the “difficult to monitor” provisions in the applicable subpart selected by the owner or operator. This paragraph only applies if the affected source has at least one storage tank or transfer rack that meets the applicability criteria for control in Table 2 or 2b to this subpart.
- (d) **Transport vehicles.** For each transport vehicle equipped with vapor collection equipment that is loaded at a transfer rack that is subject to control based on the criteria specified in Table 2 to this subpart, items 7 through 10, you must comply with paragraph (d)(1) of this section. For each transport vehicle without vapor collection equipment that is loaded at a transfer rack that is subject to control based on the criteria specified in Table 2 to this subpart, items 7 through 10, you must comply with paragraph (d)(2) of this section.
 - (1) Follow the steps in 40 CFR 60.502(e) to ensure that organic liquids are loaded only into vapor-tight transport vehicles and comply with the provisions in 40 CFR 60.502(f) through (i), except substitute the term “transport vehicle” at each occurrence of the term “tank truck” or “gasoline tank truck” in those paragraphs.
 - (2) Ensure that organic liquids are loaded only into transport vehicles that have a current certification in accordance with the U.S. DOT qualification and maintenance requirements in 49 CFR part 180, subpart E for cargo tanks and subpart F for tank cars.
- (e) **Operating limits.** For each high throughput transfer rack, you must meet each operating limit in Table 3 to this subpart for each control device used to comply with the provisions of this subpart whenever emissions from the loading of organic liquids are routed to the control device. Except as specified in paragraph (k) of this section, for each storage tank and low throughput transfer rack, you must comply with paragraph (l) of this section and the requirements for monitored parameters as specified in subpart SS of this part, for storage tanks and, during the loading of organic liquids, for low throughput transfer racks, respectively. Alternatively, you may comply with the operating limits in table 3 to this subpart.
- (f) **Surrogate for organic HAP.** For noncombustion devices, if you elect to demonstrate compliance with a percent reduction requirement in Table 2 or 2b to this subpart using total organic compounds (TOC) rather than organic HAP, you must first demonstrate, subject to the approval of the Administrator, that

TOC is an appropriate surrogate for organic HAP in your case; that is, for your storage tank(s) and/or transfer rack(s), the percent destruction of organic HAP is equal to or higher than the percent destruction of TOC. This demonstration must be conducted prior to or during the initial compliance test.

- (g) As provided in § 63.6(g), you may request approval from the Administrator to use an alternative to the emission limitations, operating limits, and work practice standards in this section. You must follow the procedures in § 63.177(b) through (e) in applying for permission to use such an alternative. If you apply for permission to use an alternative to the emission limitations, operating limits, and work practice standards in this section, you must submit the information described in § 63.6(g)(2).
- (h) [Reserved]
- (i) **Safety device.** Opening of a safety device is allowed at any time that it is required to avoid unsafe operating conditions. Beginning no later than July 7, 2023, this paragraph no longer applies.
- (j) If you elect to comply with this subpart by combining emissions from different emission sources subject to this subpart in a single control device, then you must comply with the provisions specified in § 63.982(f).
- (k) **Flares.** Beginning no later than the compliance dates specified in § 63.2342(e), for each storage tank and low throughput transfer rack that is subject to control based on the criteria specified in Tables 2 or 2b to this subpart, if you vent emissions through a closed vent system to a flare then you must comply with the requirements specified in § 63.2380 instead of the requirements in § 63.987 and the provisions regarding flare compliance assessments at § 63.997(a), (b), and (c).
- (l) **Startup, shutdown, and malfunction.** Beginning no later than the compliance dates specified in § 63.2342(e), the referenced provisions specified in paragraphs (l)(1) through (20) of this section do not apply when demonstrating compliance with subpart H of this part, subpart SS of this part, subpart TT of this part, and subpart UU of this part.
 - (1) The second sentence of § 63.181(d)(5)(i).
 - (2) The second sentence of § 63.983(a)(5).
 - (3) The phrase “except during periods of start-up, shutdown, and malfunction as specified in the referencing subpart” in § 63.984(a).
 - (4) The phrase “except during periods of start-up, shutdown and malfunction as specified in the referencing subpart” in § 63.985(a).
 - (5) The phrase “other than start-ups, shutdowns, or malfunctions” in § 63.994(c)(1)(ii)(D).
 - (6) § 63.996(c)(2)(ii).
 - (7) The last sentence of § 63.997(e)(1)(i).
 - (8) § 63.998(b)(2)(iii).
 - (9) The phrase “other than periods of start-ups, shutdowns or malfunctions” from § 63.998(b)(5)(i)(A).
 - (10) The phrase “other than a start-up, shutdown or malfunction” from § 63.998(b)(5)(i)(B)(3).
 - (11) The phrase “other than periods of start-ups, shutdowns or malfunctions” from § 63.998(b)(5)(i)(C).
 - (12) The phrase “other than a start-up, shutdown or malfunction” from § 63.998(b)(5)(ii)(C).

- (13) The phrase “, except as provided in paragraphs (b)(6)(i)(A) and (B) of this section” from § 63.998(b)(6)(i).
- (14) The second sentence of § 63.998(b)(6)(ii).
- (15) § 63.998(c)(1)(ii)(D), (E), (F), and (G).
- (16) § 63.998(d)(3).
- (17) The phrase “may be included as part of the startup, shutdown, and malfunction plan, as required by the referencing subpart for the source, or” from § 63.1005(e)(4)(i).
- (18) The phrase “may be included as part of the startup, shutdown, and malfunction plan, as required by the referencing subpart for the source, or” from § 63.1024(f)(4)(i).
- (19) The phrase “(except periods of startup, shutdown, or malfunction)” from § 63.1007(e)(1)(ii)(A).
- (20) The phrase “(except periods of startup, shutdown, or malfunction)” from § 63.1026(e)(1)(ii)(A).

[69 FR 5063, Feb. 3, 2004, as amended at 71 FR 42908, July 28, 2006; 73 FR 40981, July 17, 2008; 73 FR 21830, Apr. 23, 2008; 85 FR 40761, July 7, 2020; 89 FR 23866, Apr. 4, 2024]

GENERAL COMPLIANCE REQUIREMENTS

§ 63.2350 What are my general requirements for complying with this subpart?

- (a) You must be in compliance with the emission limitations, operating limits, and work practice standards in this subpart at all times when the equipment identified in § 63.2338(b)(1) through (5) is in OLD operation.
- (b) Except as specified in paragraph (d) of this section, you must always operate and maintain your affected source, including air pollution control and monitoring equipment, according to the provisions in § 63.6(e)(1)(i).
- (c) Except for emission sources not required to be controlled as specified in § 63.2343, you must develop a written startup, shutdown, and malfunction (SSM) plan according to the provisions in § 63.6(e)(3). Beginning no later than July 7, 2023, this paragraph no longer applies; however, for historical compliance purposes, a copy of the plan must be retained and available according to the requirements in § 63.2394(c) for five years after July 7, 2023.
- (d) Beginning no later than the compliance dates specified in § 63.2342(e), paragraph (b) of this section no longer applies. Instead, at all times, you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by the applicable standard have been achieved. Determination of whether a source is operating in compliance with operation and maintenance requirements will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

[85 FR 40763, July 7, 2020]

TESTING AND INITIAL COMPLIANCE REQUIREMENTS

§ 63.2354 What performance tests, design evaluations, and performance evaluations must I conduct?

(a)

- (1) For each performance test that you conduct, you must use the procedures specified in subpart SS of this part and the provisions specified in paragraph (b) of this section.
- (2) For each design evaluation you conduct, you must use the procedures specified in subpart SS of this part. You must also comply with the requirements specified in § 63.2346(l).
- (3) For each performance evaluation of a continuous emission monitoring system (CEMS) you conduct, you must follow the requirements in § 63.8(e) and paragraph (d) of this section. For CEMS installed after the compliance date specified in § 63.2342(e), conduct a performance evaluation of each CEMS within 180 days of installation of the monitoring system.

(b)

- (1) Except as specified in paragraph (b)(6) of this section, for nonflare control devices, you must conduct each performance test according to the requirements in § 63.7(e)(1), and either § 63.988(b), § 63.990(b), or § 63.995(b), using the procedures specified in § 63.997(e).
- (2) You must conduct three separate test runs for each performance test on a nonflare control device as specified in §§ 63.7(e)(3) and 63.997(e)(1)(v). Each test run must last at least 1 hour, except as provided in § 63.997(e)(1)(v)(A) and (B).

(3)

- (i) In addition to Method 25 or 25A (40 CFR part 60, appendix A-7), to determine compliance with the TOC emission limit, you may use Method 18 (40 CFR part 60, appendix A-6) or Method 320 of appendix A to this part to determine compliance with the total organic HAP emission limit. You may not use Method 18 or Method 320 of appendix A to this part if the control device is a combustion device, and you must not use Method 320 of appendix A to this part if the gas stream contains entrained water droplets. All compounds quantified by Method 320 of appendix A to this part must be validated according to Section 13.0 of Method 320 of appendix A to this part. As an alternative to Method 18, for determining compliance with the total organic HAP emission limit, you may use ASTM D6420-18 (incorporated by reference, see § 63.14), under the conditions specified in paragraph (b)(3)(ii) of this section.
 - (A) If you use Method 18 (40 CFR 60, appendix A-6) or Method 320 of appendix A to this part to measure compliance with the percentage efficiency limit, you must first determine which organic HAP are present in the inlet gas stream (*i.e.*, uncontrolled emissions) using knowledge of the organic liquids or the screening procedure described in Method 18. In conducting the performance test, you must analyze samples collected simultaneously at the inlet and outlet of the control device. Quantify the emissions for the same organic HAP identified as present in the inlet gas stream for both the inlet and outlet gas streams of the control device.
 - (B) If you use Method 18 (40 CFR part 60, appendix A-6) or Method 320 of appendix A to this part, to measure compliance with the emission concentration limit, you must first determine which organic HAP are present in the inlet gas stream using knowledge of the organic liquids or the screening procedure described in Method 18. In conducting the

performance test, analyze samples collected as specified in Method 18 at the outlet of the control device. Quantify the control device outlet emission concentration for the same organic HAP identified as present in the inlet or uncontrolled gas stream.

- (ii) You may use ASTM D6420-18 (incorporated by reference, see § 63.14), to determine compliance with the total organic HAP emission limit if the target concentration for each HAP is between 150 parts per billion by volume and 100 ppmv and either of the conditions specified in paragraph (b)(2)(ii)(A) or (B) of this section exists. For target compounds not listed in Section 1.1 of ASTM D6420-18 and not amenable to detection by mass spectrometry, you may not use ASTM D6420-18.
 - (A) The target compounds are those listed in Section 1.1 of ASTM D6420-18 (incorporated by reference, see § 63.14); or
 - (B) For target compounds not listed in Section 1.1 of ASTM D6420-18 (incorporated by reference, see § 63.14), but potentially detected by mass spectrometry, you must demonstrate recovery of the compound and the additional system continuing calibration check after each run, as detailed in ASTM D6420-18, Section 10.5.3, must be followed, met, documented, and submitted with the data report, even if there is no moisture condenser used or the compound is not considered water-soluble.
 - (iii) You may use ASTM D6348-12e1 (incorporated by reference, see § 63.14) instead of Method 320 of appendix A to this part under the conditions specified in footnote 4 of Table 5 to this subpart.
- (4) If a principal component of the uncontrolled or inlet gas stream to the control device is formaldehyde, you must use Method 316 of appendix A to this part, Method 320 of appendix A to this part, or Method 323 of appendix A to this part for measuring the formaldehyde, except you must not use Method 320 or Method 323 of appendix A to this part if the gas stream contains entrained water droplets. If you use Method 320 of appendix A to this part, formaldehyde must be validated according to Section 13.0 of Method 320 of appendix A to this part. You must measure formaldehyde either at the inlet and outlet of the control device to determine control efficiency or at the outlet of a combustion device for determining compliance with the emission concentration limit. You may use ASTM D6348-12e1 (incorporated by reference, see § 63.14) instead of Method 320 of appendix A to this part under the conditions specified in footnote 4 of Table 5 to this subpart.
 - (5) Except as specified in paragraph (b)(6) of this section, you may not conduct performance tests during periods of SSM, as specified in § 63.7(e)(1).
 - (6) Beginning no later than the compliance dates specified in § 63.2342(e), paragraphs (b)(1) and (5) of this section no longer apply. Instead, you must conduct each performance test according to the requirements in paragraphs (b)(6)(i) and (ii) of this section.
 - (i) In lieu of the requirements specified in § 63.7(e)(1), you must conduct performance tests under such conditions as the Administrator specifies based on representative performance of the affected source for the period being tested. Representative conditions exclude periods of startup and shutdown. You may not conduct performance tests during periods of malfunction. You must record the process information that is necessary to document operating conditions during the test and include in such record an explanation to support that such conditions represent normal operation. Upon request, you must make available to the Administrator such records as may be necessary to determine the conditions of performance tests.

- (ii) Pursuant to paragraph (b)(6)(i) of this section, you must conduct each performance test according to the requirements in either § 63.988(b), § 63.990(b), or § 63.995(b), using the procedures specified in § 63.997(e). You must also comply with the requirements specified in § 63.2346(l).
- (c) To determine the HAP content of the organic liquid, you may use Method 311 of appendix A to this part, ASTM D6886-18 (incorporated by reference, see § 63.14), or other method approved by the Administrator. If you use ASTM D6886-18 to determine the HAP content, you must use either Method B or Method C in conjunction with Method C, as described in section 4.3 of ASTM D6886-18. In addition, you may use other means, such as voluntary consensus standards, safety data sheets (SDS), or certified product data sheets, to determine the HAP content of the organic liquid. If the method you select to determine the HAP content provides HAP content ranges, you must use the upper end of each HAP content range in determining the total HAP content of the organic liquid. The EPA may require you to test the HAP content of an organic liquid using Method 311 of appendix A to this part or other method approved by the Administrator. For liquids that contain any amount of formaldehyde or carbon tetrachloride, you may not use Method 311 of appendix A to this part. If the results of the Method 311 of appendix A to this part (or any other approved method) are different from the HAP content determined by another means, the Method 311 of appendix A to this part (or approved method) results will govern. For liquids that contain any amount of formaldehyde or carbon tetrachloride, if the results of ASTM D6886-18 using method B or C in section 4.3 (or any other approved method) are different from the HAP content determined by another means, ASTM D6886-18 using method B or C in section 4 (or approved method) results will govern.
- (d) Each VOC CEMS must be installed, operated, and maintained according to the requirements of one of the following performance specifications in appendix B to part 60 of this chapter: Performance Specification 8, Performance Specification 8A, Performance Specification 9, or Performance Specification 15. You must also comply with the requirements of procedure 1 of appendix F to part 60 of this chapter, for CEMS using Performance Specification 8 or 8A.
 - (1) For CEMS using Performance Specification 9 or 15 (40 CFR part 60, appendix B), determine the target analyte(s) for calibration using either process knowledge or the screening procedures of Method 18 (40 CFR part 60, appendix A-6).
 - (2) For CEMS using Performance Specification 8A (40 CFR part 60, appendix B), conduct the relative accuracy test audits required under Procedure 1 (40 CFR part 60, appendix F) in accordance with Sections 8 and 11 of Performance Specification 8 (40 CFR part 60, appendix B). The relative accuracy must meet the criteria of Section 13.2 of Performance Specification 8 (40 CFR part 60, appendix B).
 - (3) For CEMS using Performance Specification 8 or 8A of 40 CFR part 60, appendix B, calibrate the instrument on methane and report the results as carbon (C1). Use Method 25A of 40 CFR part 60, appendix A-7 as the reference method for the relative accuracy tests.
 - (4) If you are required to monitor oxygen in order to conduct concentration corrections, you must use Performance Specification 3 (40 CFR part 60, appendix B), to certify your oxygen CEMS, and you must comply with procedure 1 (40 CFR part 60, appendix F). Use Method 3A (40 CFR part 60, appendix A-2), as the reference method when conducting a relative accuracy test audit.

[69 FR 5063, Feb. 3, 2004, as amended at 85 FR 40763, July 7, 2020]

§ 63.2358 By what date must I conduct performance tests and other initial compliance demonstrations?

- (a) You must conduct initial performance tests and design evaluations according to the schedule in § 63.7(a)(2), or by the compliance date specified in any applicable State or Federal new source review construction permit to which the affected source is already subject, whichever is earlier.
- (b)
 - (1) For storage tanks and transfer racks at existing affected sources complying with the emission limitations listed in Table 2 to this subpart, you must demonstrate initial compliance with the emission limitations within 180 days after February 5, 2007, except as provided in paragraphs (b)(1)(i) and (b)(1)(ii) of this section.
 - (i) For storage tanks with an existing internal or external floating roof, complying with item 1.a.ii. in Table 2 to this subpart and item 1.a. in Table 4 to this subpart, you must conduct your initial compliance demonstration the next time the storage tank is emptied and degassed, but not later than February 3, 2014.
 - (ii) For storage tanks complying with item 1.a.ii. or 6.a.ii in Table 2 of this subpart and item 1.b., 1.c., or 2. in Table 4 of this subpart, you must comply within 180 days after April 25, 2011.
 - (2) For storage tanks and transfer racks at reconstructed or new affected sources complying with the emission limitations listed in Table 2 to this subpart, you must conduct your initial compliance demonstration with the emission limitations within 180 days after the initial startup date for the affected source or February 3, 2004, whichever is later.
 - (3) For storage tanks at existing affected sources that commenced construction or reconstruction on or before October 21, 2019, you must demonstrate initial compliance with the emission limitations listed in Table 2b to this subpart within 180 days of either the initial startup or July 7, 2023, whichever is later, except as provided in paragraphs (b)(3)(i) and (ii) of this section.
 - (i) For storage tanks with an existing internal or external floating roof, complying with item 1.a.ii. in Table 2b to this subpart and item 1.a. in Table 4 to this subpart, you must conduct your initial compliance demonstration the next time the storage tank is emptied and degassed, but not later than July 7, 2030.
 - (ii) For storage tanks complying with item 1.a.ii. in Table 2b to this subpart and item 1.b. or 1.c. in Table 4 to this subpart, you must comply within 180 days after July 7, 2023.
- (c)
 - (1) For storage tanks at existing affected sources complying with the work practice standard in Table 4 to this subpart, you must conduct your initial compliance demonstration as specified in paragraphs (c)(1)(i) and (c)(1)(ii) of this section.
 - (i) For storage tanks with an existing internal or external floating roof, complying with item 1.a. in Table 4 of this subpart, you must conduct your initial compliance demonstration the next time the storage tank is emptied and degassed, but not later than February 3, 2014.
 - (ii) For other storage tanks not specified in paragraph (c)(1)(i) of this section, you must comply within 180 days after April 25, 2011.

- (2) For transfer racks and equipment leak components at existing affected sources complying with the work practice standards in Table 4 to this subpart, you must conduct your initial compliance demonstration within 180 days after February 5, 2007.
- (d) For storage tanks, transfer racks, and equipment leak components at reconstructed or new affected sources complying with the work practice standards in Table 4 to this subpart, you must conduct your initial compliance demonstration within 180 days after the initial startup date for the affected source.

[69 FR 5063, Feb. 3, 2004, as amended at 73 FR 40981, July 17, 2008; 85 FR 40765, July 7, 2020]

§ 63.2362 When must I conduct subsequent performance tests?

- (a) For nonflare control devices, you must conduct subsequent performance testing required in Table 5 to this subpart, item 1, at any time the EPA requests you to in accordance with section 114 of the CAA.
- (b)
 - (1) For each transport vehicle that you own that is equipped with vapor collection equipment and that is loaded with organic liquids at a transfer rack that is subject to control based on the criteria specified in Table 2 to this subpart, items 7 through 10, you must perform the vapor tightness testing required in Table 5 to this subpart, item 2, on that transport vehicle at least once per year.
 - (2) For transport vehicles that you own that do not have vapor collection equipment, you must maintain current certification in accordance with the U.S. DOT qualification and maintenance requirements in 49 CFR part 180, subparts E (cargo tanks) and F (tank cars).

[69 FR 5063, Feb. 3, 2004, as amended at 71 FR 42910, July 28, 2006; 85 FR 40765, July 7, 2020]

§ 63.2366 What are my monitoring installation, operation, and maintenance requirements?

- (a) You must install, operate, and maintain a continuous monitoring system (CMS) on each control device required in order to comply with this subpart. If you use a continuous parameter monitoring system (CPMS) (as defined in § 63.981), you must comply with § 63.2346(l) and the applicable requirements for CPMS in subpart SS of this part and § 63.671, for the control device being used. If you use a CEMS, you must install, operate, and maintain the CEMS according to the requirements in § 63.8 and paragraph (d) of this section, except as specified in paragraph (c) of this section.
- (b) For nonflare control devices controlling storage tanks and low throughput transfer racks, you must submit a monitoring plan according to the requirements in subpart SS of this part, for monitoring plans. You must also comply with the requirements specified in § 63.2346(l).
- (c) Beginning no later than the compliance dates specified in § 63.2342(e), you must keep the written procedures required by § 63.8(d)(2) on record for the life of the affected source or until the affected source is no longer subject to the provisions of this part, to be made available for inspection, upon request, by the Administrator. If the performance evaluation plan is revised, you must keep previous (i.e., superseded) versions of the performance evaluation plan on record to be made available for inspection, upon request, by the Administrator, for a period of 5 years after each revision to the plan. The program of corrective action should be included in the plan required under § 63.8(d)(2). In addition to the information required in § 63.8(d)(2), your written procedures for CEMS must include the information in paragraphs (c)(1) through (6) of this section:
 - (1) Description of CEMS installation location.

- (2) Description of the monitoring equipment, including the manufacturer and model number for all monitoring equipment components and the span of the analyzer.
 - (3) Routine quality control and assurance procedures.
 - (4) Conditions that would trigger a CEMS performance evaluation, which must include, at a minimum, a newly installed CEMS; a process change that is expected to affect the performance of the CEMS; and the Administrator's request for a performance evaluation under section 114 of the Clean Air Act.
 - (5) Ongoing operation and maintenance procedures in accordance with the general requirements of § 63.8(c)(1) and (3), (c)(4)(ii), and (c)(7) and (8);
 - (6) Ongoing recordkeeping and reporting procedures in accordance with the general requirements of § 63.10(c) and (e)(1).
- (d) For each CEMS, you must locate the sampling probe or other interface at a measurement location such that you obtain representative measurements of emissions from the regulated source and comply with the applicable requirements specified in § 63.2354(d).

[85 FR 40765, July 7, 2020]

§ 63.2370 How do I demonstrate initial compliance with the emission limitations, operating limits, and work practice standards?

- (a) You must demonstrate initial compliance with each emission limitation and work practice standard that applies to you as specified in Tables 6 and 7 to this subpart.
- (b) You demonstrate initial compliance with the operating limits requirements specified in § 63.2346(e) by establishing the operating limits during the initial performance test or design evaluation.
- (c) You must submit the results of the initial compliance determination in the Notification of Compliance Status according to the requirements in § 63.2382(d). If the initial compliance determination includes a performance test and the results are submitted electronically via the Compliance and Emissions Data Reporting Interface (CEDRI) in accordance with § 63.2386(g), the unit(s) tested, the pollutant(s) tested, and the date that such performance test was conducted may be submitted in the Notification of Compliance Status in lieu of the performance test results. The performance test results must be submitted to CEDRI by the date the Notification of Compliance Status is submitted.

[69 FR 5063, Feb. 3, 2004, as amended at 85 FR 40765, July 7, 2020]

CONTINUOUS COMPLIANCE REQUIREMENTS

§ 63.2374 When do I monitor and collect data to demonstrate continuous compliance and how do I use the collected data?

- (a) You must monitor and collect data according to subpart SS of this part, and paragraphs (b) and (c) of this section. You must also comply with the requirements specified in § 63.2346(l).

- (b) When using a control device to comply with this subpart, you must monitor continuously or collect data at all required intervals at all times that the emission source and control device are in OLD operation, except for CMS malfunctions (including any malfunction preventing the CMS from operating properly), associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments).
- (c) Do not use data recorded during CMS malfunctions, associated repairs, required quality assurance or control activities, or periods when emissions from organic liquids are not routed to the control device in data averages and calculations used to report emission or operating levels. Do not use such data in fulfilling a minimum data availability requirement, if applicable. You must use all of the data collected during all other periods, including periods of SSM, in assessing the operation of the control device.

[69 FR 5063, Feb. 3, 2004, as amended at 85 FR 40765, July 7, 2020]

§ 63.2378 How do I demonstrate continuous compliance with the emission limitations, operating limits, and work practice standards?

- (a) You must demonstrate continuous compliance with each emission limitation, operating limit, and work practice standard in Tables 2 through 4 to this subpart that applies to you according to the methods specified in subpart SS of this part, and in Tables 8 through 10 to this subpart, as applicable. You must also comply with the requirements specified in § 63.2346(l).
- (b) Except as specified in paragraph (e) of this section, you must follow the requirements in § 63.6(e)(1) and (3) during periods of startup, shutdown, malfunction, or nonoperation of the affected source or any part thereof. In addition, the provisions of paragraphs (b)(1) through (3) of this section apply.
 - (1) The emission limitations in this subpart apply at all times except during periods of nonoperation of the affected source (or specific portion thereof) resulting in cessation of the emissions to which this subpart applies. The emission limitations of this subpart apply during periods of SSM, except as provided in paragraphs (b)(2) and (3) of this section. However, if a SSM, or period of nonoperation of one portion of the affected source does not affect the ability of a particular emission source to comply with the emission limitations to which it is subject, then that emission source is still required to comply with the applicable emission limitations of this subpart during the startup, shutdown, malfunction, or period of nonoperation.
 - (2) The owner or operator must not shut down control devices or monitoring systems that are required or utilized for achieving compliance with this subpart during periods of SSM while emissions are being routed to such items of equipment if the shutdown would contravene requirements of this subpart applicable to such items of equipment. This paragraph (b)(2) does not apply if the item of equipment is malfunctioning. This paragraph (b)(2) also does not apply if the owner or operator shuts down the compliance equipment (other than monitoring systems) to avoid damage due to a contemporaneous SSM of the affected source or portion thereof. If the owner or operator has reason to believe that monitoring equipment would be damaged due to a contemporaneous SSM of the affected source or portion thereof, the owner or operator must provide documentation supporting such a claim in the next Compliance report required in Table 11 to this subpart, item 1. Once approved by the Administrator, the provision for ceasing to collect, during a SSM, monitoring data that would otherwise be required by the provisions of this subpart must be incorporated into the SSM plan.

- (3) During SSM, you must implement, to the extent reasonably available, measures to prevent or minimize excess emissions. For purposes of this paragraph (b)(3), the term “excess emissions” means emissions greater than those allowed by the emission limits that apply during normal operational periods. The measures to be taken must be identified in the SSM plan, and may include, but are not limited to, air pollution control technologies, recovery technologies, work practices, pollution prevention, monitoring, and/or changes in the manner of operation of the affected source. Back-up control devices are not required, but may be used if available.
- (c) Except as specified in paragraph (e) of this section, periods of planned routine maintenance of a control device used to control storage tanks or transfer racks, during which the control device does not meet the emission limits in Table 2 to this subpart, must not exceed 240 hours per year.
- (d) Except as specified in paragraph (e) of this section, if you elect to route emissions from storage tanks or transfer racks to a fuel gas system or to a process, as allowed by § 63.982(d), to comply with the emission limits in Table 2 to this subpart, the total aggregate amount of time during which the emissions bypass the fuel gas system or process during the calendar year without being routed to a control device, for all reasons (except SSM or product changeovers of flexible operation units and periods when a storage tank has been emptied and degassed), must not exceed 240 hours.
- (e) Beginning no later than the compliance dates specified in § 63.2342(e), paragraphs (b) through (d) of this section no longer apply. Instead, you must be in compliance with each emission limitation, operating limit, and work practice standard specified in paragraph (a) of this section at all times, except during periods of nonoperation of the affected source (or specific portion thereof) resulting in cessation of the emissions to which this subpart applies and must comply with the requirements specified in paragraphs (e)(1) through (4) of this section, as applicable. Equipment subject to the work practice standards for equipment leak components in Table 4 to this subpart, item 4 are not subject to this paragraph (e).
- (1) Except as specified in paragraphs (e)(3) and (4) of this section, the use of a bypass line at any time on a closed vent system to divert a vent stream to the atmosphere or to a control device not meeting the requirements specified in paragraph (a) of this section is an emissions standards deviation.
- (2) If you are subject to the bypass monitoring requirements of § 63.983(a)(3), then you must continue to comply with the requirements in § 63.983(a)(3) and the recordkeeping and reporting requirements in §§ 63.998(d)(1)(ii) and 63.999(c)(2), in addition to § 63.2346(l), the recordkeeping requirements specified in § 63.2390(g), and the reporting requirements specified in § 63.2386(c)(12).
- (3) Periods of planned routine maintenance of a control device used to control storage tank breathing loss emissions, during which the control device does not meet the emission limits in Table 2 or 2b to this subpart, must not exceed 240 hours per year. The level of material in the storage tank shall not be increased during periods that the closed-vent system or control device is bypassed to perform planned routine maintenance.
- (4) If you elect to route emissions from storage tanks to a fuel gas system or to a process, as allowed by § 63.982(d), to comply with the emission limits in Table 2 or 2b to this subpart, the total aggregate amount of time during which the breathing loss emissions bypass the fuel gas system or process during the calendar year without being routed to a control device, for all reasons (except product changeovers of flexible operation units and periods when a storage tank has been emptied and degassed), must not exceed 240 hours. The level of material in the storage tank shall not be increased during periods that the fuel gas system or process is bypassed.

- (f) The CEMS data must be reduced to daily averages computed using valid data consistent with the data availability requirements specified in § 63.999(c)(6)(i)(B) through (D), except monitoring data also are sufficient to constitute a valid hour of data if measured values are available for at least two of the 15-minute periods during an hour when calibration, quality assurance, or maintenance activities are being performed. In computing daily averages to determine compliance with this subpart, you must exclude monitoring data recorded during CEMS breakdowns, out of control periods, repairs, maintenance periods, calibration checks, or other quality assurance activities.

[69 FR 5063, Feb. 3, 2004, as amended at 71 FR 20463, Apr. 20, 2006; 85 FR 40766, July 7, 2020; 89 FR 23866, Apr. 4, 2024]

§ 63.2380 What are my requirements for certain flares?

- (a) Beginning no later than the compliance dates specified in § 63.2342(e), if you reduce organic HAP emissions by venting emissions through a closed vent system to a steam-assisted, air-assisted, or non-assisted flare to control emissions from a storage tank, low throughput transfer rack, or high throughput transfer rack that is subject to control based on the criteria specified in Tables 2 or 2b to this subpart, then the flare requirements specified in § 63.11(b); subpart SS of this part; the provisions specified in items 7.a through 7.d of Table 3 to this subpart; Table 8 to this subpart; and the provisions specified in items 1.a.iii and 2.a.iii, and items 7.a through 7.d.2 of Table 9 to this subpart no longer apply. Instead, you must meet the applicable requirements for flares as specified in §§ 63.670 and 63.671, including the provisions in Tables 12 and 13 to subpart CC of this part, except as specified in paragraphs (b) through (m) of this section. For purposes of compliance with this paragraph, the following terms are defined in § 63.641: Assist air, assist steam, center steam, combustion zone, combustion zone gas, flare, flare purge gas, flare supplemental gas, flare sweep gas, flare vent gas, lower steam, net heating value, perimeter assist air, pilot gas, premix assist air, total steam, and upper steam.
- (b) The following phrases in § 63.670(c) do not apply:
 - (1) "Specify the smokeless design capacity of each flare and"; and
 - (2) "And the flare vent gas flow rate is less than the smokeless design capacity of the flare."
- (c) The phrase "and the flare vent gas flow rate is less than the smokeless design capacity of the flare" in § 63.670(d) does not apply.
- (d) Section 63.670(j)(6)(ii) does not apply. Instead submit the information required by § 63.670(j)(6)(ii) with the Notification of Compliance Status according to § 63.2382(d)(2)(ix).
- (e) Section 63.670(o) does not apply.
- (f) Substitute "pilot flame or flare flame" or each occurrence of "pilot flame."
- (g) Substitute "affected source" for each occurrence of "petroleum refinery."
- (h) Each occurrence of "refinery" does not apply.
- (i) You may elect to comply with the alternative means of emissions limitation requirements specified in § 63.670(r) in lieu of the requirements in § 63.670(d) through (f), as applicable. However, instead of complying with § 63.670(r)(3)(iii), you must also submit the alternative means of emissions limitation request to the following address: U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Sector Policies and Programs Division, U.S. EPA Mailroom (E143-01), Attention: Organic Liquids Distribution Sector Lead, 109 T.W. Alexander Drive, Research Triangle Park, NC 27711. Electronic copies in lieu of hard copies may also be submitted to oldrtr@epa.gov.

- (j) If you choose to determine compositional analysis for net heating value with a continuous process mass spectrometer, then you must comply with the requirements specified in paragraphs (j)(1) through (7) of this section.
- (1) You must meet the requirements in § 63.671(e)(2). You may augment the minimum list of calibration gas components found in § 63.671(e)(2) with compounds found during a pre-survey or known to be in the gas through process knowledge.
 - (2) Calibration gas cylinders must be certified to an accuracy of 2 percent and traceable to National Institute of Standards and Technology (NIST) standards.
 - (3) For unknown gas components that have similar analytical mass fragments to calibration compounds, you may report the unknowns as an increase in the overlapped calibration gas compound. For unknown compounds that produce mass fragments that do not overlap calibration compounds, you may use the response factor for the nearest molecular weight hydrocarbon in the calibration mix to quantify the unknown component's NHVg.
 - (4) You may use the response factor for n-pentane to quantify any unknown components detected with a higher molecular weight than n-pentane.
 - (5) You must perform an initial calibration to identify mass fragment overlap and response factors for the target compounds.
 - (6) You must meet applicable requirements in Performance Specification (PS) 9 (40 CFR part 60, appendix B) for continuous monitoring system acceptance including, but not limited to, performing an initial multi-point calibration check at three concentrations following the procedure in Section 10.1 of PS 9 and performing the periodic calibration requirements listed for gas chromatographs in Table 13 to subpart CC of this part, for the process mass spectrometer. You may use the alternative sampling line temperature allowed under Net Heating Value by Gas Chromatograph in Table 13 to subpart CC of this part.
 - (7) The average instrument calibration error (CE) for each calibration compound at any calibration concentration must not differ by more than 10 percent from the certified cylinder gas value. The CE for each component in the calibration blend must be calculated using the following equation:

$$CE = \frac{C_m - C_a}{C_a} \times 100$$

Where:

C_m = Average instrument response (ppm)

C_a = Certified cylinder gas value (ppm)

- (k) If you use a gas chromatograph or mass spectrometer for compositional analysis for net heating value, then you may choose to use the CE of NHV measured versus the cylinder tag value NHV as the measure of agreement for daily calibration and quarterly audits in lieu of determining the compound-specific CE. The CE for NHV at any calibration level must not differ by more than 10 percent from the certified cylinder gas value. The CE for must be calculated using the following equation:

$$CE = \frac{NHV_{measured} - NHV_a}{NHV_a} \times 100$$

Where:

NHV_{measured} = Average instrument response (Btu/scf)

NHV_a = Certified cylinder gas value (Btu/scf)

- (l) Instead of complying with § 63.670(p), you must keep the flare monitoring records specified in § 63.2390(h).
- (m) Instead of complying with § 63.670(q), you must comply with the reporting requirements specified in § 63.2382(d)(2)(ix) and § 63.2386(d)(5).

[85 FR 40766, July 7, 2020]

NOTIFICATIONS, REPORTS, AND RECORDS

§ 63.2382 What notifications must I submit and when and what information should be submitted?

- (a) You must submit each notification in subpart SS of this part, Table 12 to this subpart, and paragraphs (b) through (d) of this section that applies to you. You must submit these notifications according to the schedule in Table 12 to this subpart and as specified in paragraphs (b) through (d) of this section. You must also comply with the requirements specified in § 63.2346(l).
- (b) **Initial Notification.**
 - (1) If you startup your affected source before February 3, 2004, you must submit the Initial Notification no later than 120 calendar days after February 3, 2004, or no later than 120 days after the source becomes subject to this subpart, whichever is later.
 - (2) If you startup your new or reconstructed affected source on or after February 3, 2004, you must submit the Initial Notification no later than 120 days after initial startup, or no later than 120 days after the source becomes subject to this subpart, whichever is later.
- (c) If you are required to conduct a performance test, you must submit the Notification of Intent to conduct the test at least 60 calendar days before it is initially scheduled to begin as required in § 63.7(b)(1).
- (d)
 - (1) **Notification of Compliance Status.** If you are required to conduct a performance test, design evaluation, or other initial compliance demonstration as specified in Table 5, 6, or 7 to this subpart, you must submit a Notification of Compliance Status.
 - (2) **Notification of Compliance Status requirements.** The Notification of Compliance Status must include the information required in § 63.999(b) and in paragraphs (d)(2)(i) through (ix) of this section.
 - (i) The results of any applicability determinations, emission calculations, or analyses used to identify and quantify organic HAP emissions from the affected source.

- (ii) The results of emissions profiles, performance tests, engineering analyses, design evaluations, flare compliance assessments, inspections and repairs, and calculations used to demonstrate initial compliance according to Tables 6 and 7 to this subpart. For performance tests, results must include descriptions of sampling and analysis procedures and quality assurance procedures. If performance test results are submitted electronically via CEDRI in accordance with § 63.2386(g), the unit(s) tested, the pollutant(s) tested, and the date that such performance test was conducted may be submitted in the Notification of Compliance Status in lieu of the performance test results. The performance test results must be submitted to CEDRI by the date the Notification of Compliance Status is submitted.
 - (iii) Descriptions of monitoring devices, monitoring frequencies, and the operating limits established during the initial compliance demonstrations, including data and calculations to support the levels you establish.
 - (iv) Descriptions of worst-case operating and/or testing conditions for the control device(s).
 - (v) Identification of emission sources subject to overlapping requirements described in § 63.2396 and the authority under which you will comply.
 - (vi) The applicable information specified in § 63.1039(a)(1) through (3) for all pumps and valves subject to the work practice standards for equipment leak components in Table 4 to this subpart, item 4.
 - (vii) If you are complying with the vapor balancing work practice standard for transfer racks according to Table 4 to this subpart, item 3.a, include a statement to that effect and a statement that the pressure vent settings on the affected storage tanks are greater than or equal to 2.5 psig.
 - (viii) The information specified in § 63.2386(c)(10)(i), unless the information has already been submitted with the first Compliance report. If the information specified in § 63.2386(c)(10)(i) has already been submitted with the first Compliance report, the information specified in § 63.2386(d)(3) and (4), as applicable, shall be submitted instead.
 - (ix) For flares subject to the requirements of § 63.2380, you must also submit the information in this paragraph in a supplement to the Notification of Compliance Status within 150 days after the first applicable compliance date for flare monitoring. In lieu of the information required in § 63.987(b), the Notification of Compliance Status must include flare design (e.g., steam-assisted, air-assisted, or non-assisted); all visible emission readings, heat content determinations (including information required by § 63.670(j)(6)(i), as applicable), flow rate measurements, and exit velocity determinations made during the initial visible emissions demonstration required by § 63.670(h), as applicable; and all periods during the compliance determination when the pilot flame or flare flame is absent.
- (3) **Submitting Notification of Compliance Status.** Beginning no later than the compliance dates specified in § 63.2342(e), you must submit all subsequent Notification of Compliance Status reports in portable document format (PDF) format to the EPA following the procedure specified in § 63.9(k), except any medium submitted through mail must be sent to the attention of the Organic Liquids Distribution Sector Lead.

[69 FR 5063, Feb. 3, 2004, as amended at 71 FR 42910, July 28, 2006; 85 FR 40767, July 7, 2020; 85 FR 73903, Nov. 19, 2020; 89 FR 23867, Apr. 4, 2024]

§ 63.2386 What reports must I submit and when and what information is to be submitted in each?

- (a) You must submit each report in subpart SS of this part, Table 11 to this subpart, Table 12 to this subpart, and in paragraphs (c) through (j) of this section that applies to you. You must also comply with the requirements specified in § 63.2346(l).
- (b) Unless the Administrator has approved a different schedule for submission of reports under § 63.10(a), you must submit each report according to Table 11 to this subpart and by the dates shown in paragraphs (b)(1) through (3) of this section, by the dates shown in subpart SS of this part, and by the dates shown in Table 12 to this subpart, whichever are applicable.
 - (1)
 - (i) The first Compliance report must cover the period beginning on the compliance date that is specified for your affected source in § 63.2342 and ending on June 30 or December 31, whichever date is the first date following the end of the first calendar half after the compliance date that is specified for your affected source in § 63.2342.
 - (ii) The first Compliance report must be postmarked no later than July 31 or January 31, whichever date follows the end of the first calendar half after the compliance date that is specified for your affected source in § 63.2342.
 - (2)
 - (i) Each subsequent Compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.
 - (ii) Each subsequent Compliance report must be postmarked no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period.
 - (3) For each affected source that is subject to permitting regulations pursuant to 40 CFR part 70 or 40 CFR part 71, if the permitting authority has established dates for submitting semiannual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), you may submit the first and subsequent Compliance reports according to the dates the permitting authority has established instead of according to the dates in paragraphs (b)(1) and (2) of this section.
- (c) **First Compliance report.** The first Compliance report must contain the information specified in paragraphs (c)(1) through (12) of this section, as well as the information specified in paragraph (d) of this section.
 - (1) Company name and address.
 - (2) Statement by a responsible official, including the official's name, title, and signature, certifying that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete. If your report is submitted via CEDRI, the certifier's electronic signature during the submission process replaces this requirement.
 - (3) Date of report and beginning and ending dates of the reporting period. You are no longer required to provide the date of report when the report is submitted via CEDRI.
 - (4) Any changes to the information listed in § 63.2382(d)(2) that have occurred since the submittal of the Notification of Compliance Status.

- (5) Except as specified in paragraph (c)(11) of this section, if you had a SSM during the reporting period and you took actions consistent with your SSM plan, the Compliance report must include the information described in § 63.10(d)(5)(i).
- (6) If there are no deviations from any emission limitation or operating limit that applies to you and there are no deviations from the requirements for work practice standards, a statement that there were no deviations from the emission limitations, operating limits, or work practice standards during the reporting period.
- (7) If there were no periods during which the CMS was out of control as specified in § 63.8(c)(7), a statement that there were no periods during which the CMS was out of control during the reporting period.
- (8) For closed vent systems and control devices used to control emissions, the information specified in paragraphs (c)(8)(i) and (ii) of this section for those planned routine maintenance activities that would require the control device to not meet the applicable emission limit.
 - (i) A description of the planned routine maintenance that is anticipated to be performed for the control device during the next 6 months. This description must include the type of maintenance necessary, planned frequency of maintenance, and lengths of maintenance periods.
 - (ii) A description of the planned routine maintenance that was performed for the control device during the previous 6 months. This description must include the type of maintenance performed and the total number of hours during those 6 months that the control device did not meet the applicable emission limit due to planned routine maintenance.
- (9) A listing of all transport vehicles into which organic liquids were loaded at transfer racks that are subject to control based on the criteria specified in Table 2 to this subpart, items 7 through 10, during the previous 6 months for which vapor tightness documentation as required in § 63.2390(c) was not on file at the facility.
- (10)
 - (i) A listing of all transfer racks (except those racks at which only unloading of organic liquids occurs) and of tanks greater than or equal to 18.9 cubic meters (5,000 gallons) that are part of the affected source but are not subject to any of the emission limitations, operating limits, or work practice standards of this subpart.
 - (ii) If the information specified in paragraph (c)(10)(i) of this section has already been submitted with the Notification of Compliance Status, the information specified in paragraphs (d)(3) and (4) of this section, as applicable, shall be submitted instead.
- (11) Beginning no later than the compliance dates specified in § 63.2342(e), paragraph (c)(5) of this section no longer applies.
- (12) Beginning no later than the compliance dates specified in § 63.2342(e), for bypass lines subject to the requirements § 63.2378(e)(1) and (2), the compliance report must include the start date, start time, duration in hours, estimate of the volume of gas in standard cubic feet (scf), the concentration of organic HAP in the gas in ppmv and the resulting mass emissions of organic HAP in pounds that bypass a control device. For periods when the flow indicator is not operating, report the start date, start time, and duration in hours.

- (d) **Subsequent Compliance reports.** Subsequent Compliance reports must contain the information in paragraphs (c)(1) through (9) and paragraph (c)(12) of this section and, where applicable, the information in paragraphs (d)(1) through (5) of this section.
- (1) For each deviation from an emission limitation occurring at an affected source where you are using a CMS to comply with an emission limitation in this subpart, or for each CMS that was inoperative or out of control during the reporting period, you must include in the Compliance report the applicable information in paragraphs (d)(1)(i) through (xv) of this section. This includes periods of SSM.
- (i) The date and time that each malfunction started and stopped, and the nature and cause of the malfunction (if known).
 - (ii) The start date, start time, and duration in hours for each period that each CMS was inoperative, except for zero (low-level) and high-level checks.
 - (iii) The start date, start time, and duration in hours for each period that the CMS that was out of control.
 - (iv) Except as specified in paragraph (d)(1)(xiii) of this section, the date and time that each deviation started and stopped, and whether each deviation occurred during a period of SSM, or during another period.
 - (v) The total duration in hours of all deviations for each CMS during the reporting period, and the total duration as a percentage of the total emission source operating time during that reporting period.
 - (vi) Except as specified in paragraph (d)(1)(xiii) of this section, a breakdown of the total duration of the deviations during the reporting period into those that are due to startup, shutdown, control equipment problems, process problems, other known causes, and other unknown causes.
 - (vii) The total duration in hours of CMS downtime for each CMS during the reporting period, and the total duration of CMS downtime as a percentage of the total emission source operating time during that reporting period.
 - (viii) An identification of each organic HAP that was potentially emitted during each deviation based on the known organic HAP contained in the liquid(s).
 - (ix) A brief description of the emission source(s) at which the CMS deviation(s) occurred or at which the CMS was inoperative or out of control.
 - (x) The equipment manufacturer(s) and model number(s) of the CMS and the pollutant or parameter monitored.
 - (xi) The date of the latest certification or audit for each CMS.
 - (xii) A brief description of any changes in CMS, processes, or controls since the last reporting period.
 - (xiii) Beginning no later than the compliance dates specified in § 63.2342(e), paragraphs (d)(1)(iv) and (vi) of this section no longer apply. For each instance, report the start date, start time, and duration in hours of each failure. For each failure, the report must include a list of the affected sources or equipment, an estimate of the quantity in pounds of each regulated pollutant

emitted over any emission limit, a description of the method used to estimate the emissions, and the cause of the deviation (including unknown cause, if applicable), as applicable, and the corrective action taken.

(xiv) Corrective actions taken for a CMS that was inoperative or out of control.

(xv) Total process operating time during the reporting period.

(2) Include in the Compliance report the information in paragraphs (d)(2)(i) through (iii) of this section, as applicable.

(i) Except as specified in paragraph (d)(2)(iv) of this section, for each storage tank and transfer rack subject to control requirements, include periods of planned routine maintenance during which the control device did not comply with the applicable emission limits in Table 2 to this subpart.

(ii) For each storage tank controlled with a floating roof, include a copy of the inspection record (required in § 63.1065(b)) when inspection failures occur.

(iii) If you elect to use an extension for a floating roof inspection in accordance with § 63.1063(c)(2)(iv)(B) or (e)(2), include the documentation required by those paragraphs.

(iv) Beginning no later than the compliance dates specified in § 63.2342(e), paragraph (d)(2)(i) of this section no longer applies. Instead for each storage tank subject to control requirements, include the start date, start time, end date and end time of any planned routine maintenance during which the control device used to control storage tank breathing losses did not comply with the applicable emission limits in Table 2 or 2b to this subpart.

(3)

(i) Except as specified in paragraph (d)(3)(iii) of this section, a listing of any storage tank that became subject to controls based on the criteria for control specified in Table 2 to this subpart, items 1 through 6, since the filing of the last Compliance report.

(ii) A listing of any transfer rack that became subject to controls based on the criteria for control specified in Table 2 to this subpart, items 7 through 10, since the filing of the last Compliance report.

(iii) Beginning no later than the compliance dates specified in § 63.2342(e), the emission limits specified in Table 2 to this subpart for storage tanks at an existing affected source no longer apply as specified in § 63.2346(a)(5). Instead, beginning no later than the compliance dates specified in § 63.2342(e), you must include a listing of any storage tanks at an existing affected source that became subject to controls based on the criteria for control specified in Table 2b to this subpart, items 1 through 3, since the filing of the last Compliance report.

(4)

(i) A listing of tanks greater than or equal to 18.9 cubic meters (5,000 gallons) that became part of the affected source but are not subject to any of the emission limitations, operating limits, or work practice standards of this subpart, since the last Compliance report.

- (ii) A listing of all transfer racks (except those racks at which only the unloading of organic liquids occurs) that became part of the affected source but are not subject to any of the emission limitations, operating limits, or work practice standards of this subpart, since the last Compliance report.
- (5) Beginning no later than the compliance dates specified in § 63.2342(e), for each flare subject to the requirements in § 63.2380, the compliance report must include the items specified in paragraphs (d)(5)(i) through (iii) of this section in lieu of the information required in § 63.999(c)(3).
 - (i) Records as specified in § 63.2390(h)(1) for each 15-minute block during which there was at least one minute when regulated material is routed to a flare and no pilot flame or flare flame is present. Include the start and stop time and date of each 15-minute block.
 - (ii) Visible emission records as specified in § 63.2390(h)(2)(iv) for each period of 2 consecutive hours during which visible emissions exceeded a total of 5 minutes.
 - (iii) The periods specified in § 63.2390(h)(6). Indicate the date and start and end time for the period, and the net heating value operating parameter(s) determined following the methods in § 63.670(k) through (n) as applicable.
- (e) Each affected source that has obtained a title V operating permit pursuant to 40 CFR part 70 or 40 CFR part 71 must report all deviations as defined in this subpart in the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 71.6(a)(3)(iii)(A). If an affected source submits a Compliance report pursuant to Table 11 to this subpart along with, or as part of, the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 71.6(a)(3)(iii)(A), and the Compliance report includes all required information concerning deviations from any emission limitation in this subpart, we will consider submission of the Compliance report as satisfying any obligation to report the same deviations in the semiannual monitoring report. However, submission of a Compliance report will not otherwise affect any obligation the affected source may have to report deviations from permit requirements to the applicable title V permitting authority.
- (f) Beginning no later than the compliance dates specified in § 63.2342(e), you must submit all Compliance reports to the EPA following the procedure specified in § 63.9(k), except any medium submitted through U.S. mail must be sent to the attention of the Organic Liquids Distribution Sector Lead. You must use the appropriate electronic report template on the CEDRI website (<https://www.epa.gov/electronic-reporting-air-emissions/cedri>) for this subpart. The date report templates become available will be listed on the CEDRI website. Unless the Administrator or delegated state agency or other authority has approved a different schedule for submission of reports under §§ 63.9(i) and 63.10(a), the report must be submitted by the deadline specified in this subpart, regardless of the method in which the report is submitted.
- (g) Beginning no later than the compliance dates specified in § 63.2342(e), you must start submitting performance test reports in accordance with this paragraph. Unless otherwise specified in this subpart, within 60 days after the date of completing each performance test required by this subpart, you must submit the results of the performance test following the procedures specified in § 63.9(k). Data collected using test methods supported by the EPA's Electronic Reporting Tool (ERT) as listed on the EPA's ERT website (<https://www.epa.gov/electronic-reporting-air-emissions/electronic-reporting-tool-ert>) at the time of the test must be submitted in a file format generated through the use of the EPA's ERT. Alternatively, you may submit an electronic file consistent with the XML schema listed on the EPA's ERT website. Data collected using test methods that are not supported by the EPA's ERT as listed on the EPA's ERT website at the time of the test must be included as an attachment in the ERT or alternate electronic file.

- (h) Beginning no later than the compliance dates specified in § 63.2342(e), you must start submitting performance evaluation reports in accordance with this paragraph. Unless otherwise specified in this subpart, within 60 days after the date of completing each CEMS performance evaluation (as defined in § 63.2) that includes a relative accuracy test audit (RATA), you must submit the results of the performance evaluation following the procedures specified in § 63.9(k). The results of performance evaluations of CEMS measuring RATA pollutants that are supported by the EPA's ERT as listed on the EPA's ERT website at the time of the evaluation must be submitted in a file format generated through the use of the EPA's ERT. Alternatively, you may submit an electronic file consistent with the XML schema listed on the EPA's ERT website. The results of performance evaluations of CEMS measuring RATA pollutants that are not supported by the EPA's ERT as listed on the EPA's ERT website at the time of the evaluation must be included as an attachment in the ERT or alternate electronic file.

[69 FR 5063, Feb. 3, 2004, as amended at 71 FR 42910, July 28, 2006; 85 FR 40768, July 7, 2020; 89 FR 23867, Apr. 4, 2024]

§ 63.2390 What records must I keep?

- (a) For each emission source identified in § 63.2338 that does not require control under this subpart, you must keep all records identified in § 63.2343.
- (b) For each emission source identified in § 63.2338 that does require control under this subpart:
 - (1) Except as specified in paragraph (h) of this section for flares, you must keep all records identified in subpart SS of this part and in Table 12 to this subpart that are applicable, including records related to notifications and reports, SSM, performance tests, CMS, and performance evaluation plans. You must also comply with the requirements specified in § 63.2346(l).
 - (2) Except as specified in paragraph (h) of this section for flares, you must keep the records required to show continuous compliance, as required in subpart SS of this part and in Tables 8 through 10 to this subpart, with each emission limitation, operating limit, and work practice standard that applies to you. You must also comply with the requirements specified in § 63.2346(l).
 - (3) In addition to the information required in § 63.998(c), the manufacturer's specifications or your written procedures must include a schedule for calibrations, preventative maintenance procedures, a schedule for preventative maintenance, and corrective actions to be taken if a calibration fails.
- (c) For each transport vehicle into which organic liquids are loaded at a transfer rack that is subject to control based on the criteria specified in Table 2 to this subpart, items 7 through 10, you must keep the applicable records in paragraphs (c)(1) and (2) of this section or alternatively the verification records in paragraph (c)(3) of this section.
 - (1) For transport vehicles equipped with vapor collection equipment, the documentation described in 40 CFR 60.505(b), except that the test title is: Transport Vehicle Pressure Test-EPA Reference Method 27.
 - (2) For transport vehicles without vapor collection equipment, current certification in accordance with the U.S. DOT qualification and maintenance requirements in 49 CFR part 180, subpart E for cargo tanks and subpart F for tank cars.
 - (3) In lieu of keeping the records specified in paragraph (c)(1) or (2) of this section, as applicable, the owner or operator shall record that the verification of U.S. DOT tank certification or Method 27 of 40 CFR part 60, appendix A-8 testing, required in Table 5 to this subpart, item 2, has been performed.

Various methods for the record of verification can be used, such as: A check-off on a log sheet, a list of U.S. DOT serial numbers or Method 27 data, or a position description for gate security showing that the security guard will not allow any trucks on site that do not have the appropriate documentation.

- (d) You must keep records of the total actual annual facility-level organic liquid loading volume as defined in § 63.2406 through transfer racks to document the applicability, or lack thereof, of the emission limitations in Table 2 to this subpart, items 7 through 10.
- (e) An owner or operator who elects to comply with § 63.2346(a)(4) shall keep the records specified in paragraphs (e)(1) through (3) of this section.
 - (1) A record of the U.S. DOT certification required by § 63.2346(a)(4)(ii).
 - (2) A record of the pressure relief vent setting specified in § 63.2346(a)(4)(v).
 - (3) If complying with § 63.2346(a)(4)(vi)(B), keep the records specified in paragraphs (e)(3)(i) and (ii) of this section.
 - (i) A record of the equipment to be used and the procedures to be followed when reloading the cargo tank or tank car and displacing vapors to the storage tank from which the liquid originates.
 - (ii) A record of each time the vapor balancing system is used to comply with § 63.2346(a)(4)(vi)(B).
- (f) Beginning no later than the compliance dates specified in § 63.2342(e), for each deviation from an emission limitation, operating limit, and work practice standard specified in paragraph (a) of this section, you must keep a record of the information specified in paragraph (f)(1) through (3) of this section.
 - (1) In the event that an affected unit fails to meet an applicable standard, record the number of failures. For each failure record the date, time and duration of each failure.
 - (2) For each failure to meet an applicable standard, record and retain a list of the affected sources or equipment, an estimate of the quantity of each regulated pollutant emitted over any emission limit and a description of the method used to estimate the emissions.
 - (3) Record actions taken to minimize emissions in accordance with § 63.2350(d) and any corrective actions taken to return the affected unit to its normal or usual manner of operation.
- (g) Beginning no later than the compliance dates specified in § 63.2342(e), for each flow event from a bypass line subject to the requirements in § 63.2378(e)(1) and (2), you must maintain records sufficient to determine whether or not the detected flow included flow requiring control. For each flow event from a bypass line requiring control that is released either directly to the atmosphere or to a control device not meeting the requirements specified in § 63.2378(a), you must include an estimate of the volume of gas, the concentration of organic HAP in the gas and the resulting emissions of organic HAP that bypassed the control device using process knowledge and engineering estimates.
- (h) Beginning no later than the compliance dates specified in § 63.2342(e), for each flare subject to the requirements in § 63.2380, you must keep records specified in paragraphs (h)(1) through (10) of this section in lieu of the information required in § 63.998(a)(1).
 - (1) Retain records of the output of the monitoring device used to detect the presence of a pilot flame or flare flame as required in § 63.670(b) for a minimum of 2 years. Retain records of each 15-minute block during which there was at least one minute that no pilot flame or flare flame is present when

regulated material is routed to a flare for a minimum of 5 years. You may reduce the collected minute-by-minute data to a 15-minute block basis with an indication of whether there was at least one minute where no pilot flame or flare flame was present.

- (2) Retain records of daily visible emissions observations or video surveillance images required in § 63.670(h) as specified in paragraphs (h)(2)(i) through (iv) of this section, as applicable, for a minimum of 3 years.
 - (i) To determine when visible emissions observations are required, the record must identify all periods when regulated material is vented to the flare.
 - (ii) If visible emissions observations are performed using Method 22 of 40 CFR part 60, appendix A-7, then the record must identify whether the visible emissions observation was performed, the results of each observation, total duration of observed visible emissions, and whether it was a 5-minute or 2-hour observation. Record the date and start and end time of each visible emissions observation.
 - (iii) If a video surveillance camera is used, then the record must include all video surveillance images recorded, with time and date stamps.
 - (iv) For each 2-hour period for which visible emissions are observed for more than 5 minutes in 2 consecutive hours, then the record must include the date and start and end time of the 2-hour period and an estimate of the cumulative number of minutes in the 2-hour period for which emissions were visible.
- (3) The 15-minute block average cumulative flows for flare vent gas and, if applicable, total steam, perimeter assist air, and premix assist air specified to be monitored under § 63.670(i), along with the date and time interval for the 15-minute block. If multiple monitoring locations are used to determine cumulative vent gas flow, total steam, perimeter assist air, and premix assist air, then retain records of the 15-minute block average flows for each monitoring location for a minimum of 2 years, and retain the 15-minute block average cumulative flows that are used in subsequent calculations for a minimum of 5 years. If pressure and temperature monitoring is used, then retain records of the 15-minute block average temperature, pressure, and molecular weight of the flare vent gas or assist gas stream for each measurement location used to determine the 15-minute block average cumulative flows for a minimum of 2 years, and retain the 15-minute block average cumulative flows that are used in subsequent calculations for a minimum of 5 years.
- (4) The flare vent gas compositions specified to be monitored under § 63.670(j). Retain records of individual component concentrations from each compositional analysis for a minimum of 2 years. If an NHVvg analyzer is used, retain records of the 15-minute block average values for a minimum of 5 years.
- (5) Each 15-minute block average operating parameter calculated following the methods specified in § 63.670(k) through (n), as applicable.
- (6) All periods during which operating values are outside of the applicable operating limits specified in § 63.670(d) through (f) when regulated material is being routed to the flare.
- (7) All periods during which you do not perform flare monitoring according to the procedures in § 63.670(g).

- (8) Records of periods when there is flow of vent gas to the flare, but when there is no flow of regulated material to the flare, including the start and stop time and dates of periods of no regulated material flow.
- (9) The monitoring plan required in § 63.671(b).
- (10) Records described in § 63.10(b)(2)(vi).

[69 FR 5063, Feb. 3, 2004, as amended at 71 FR 42910, July 28, 2006; 73 FR 40982, July 17, 2008; 85 FR 40771, July 7, 2020]

§ 63.2394 In what form and how long must I keep my records?

- (a) Your records must be in a form suitable and readily available for expeditious inspection and review according to § 63.10(b)(1), including records stored in electronic form at a separate location.
- (b) As specified in § 63.10(b)(1), you must keep your files of all information (including all reports and notifications) for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.
- (c) You must keep each record on site for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to § 63.10(b)(1). You may keep the records off site for the remaining 3 years.

[69 FR 5063, Feb. 3, 2004, as amended at 71 FR 42911, July 28, 2006]

OTHER REQUIREMENTS AND INFORMATION

§ 63.2396 What compliance options do I have if part of my plant is subject to both this subpart and another subpart?

- (a) *Compliance with other regulations for storage tanks.*
 - (1) After the compliance dates specified in § 63.2342, you are in compliance with the provisions of this subpart for any storage tank that is assigned to the OLD affected source and that is both controlled with a floating roof and is in compliance with the provisions of either 40 CFR part 60, subpart Kb, or 40 CFR part 61, subpart Y, except that records shall be kept for 5 years rather than 2 years for storage tanks that are assigned to the OLD affected source.
 - (2) After the compliance dates specified in § 63.2342, you are in compliance with the provisions of this subpart for any storage tank with a fixed roof that is assigned to the OLD affected source and that is both controlled with a closed vent system and control device and is in compliance with either 40 CFR part 60, subpart Kb, or 40 CFR part 61, subpart Y, except that you must comply with the monitoring, recordkeeping, and reporting requirements in this subpart.
 - (3) Except as specified in paragraph (a)(4) of this section, as an alternative to paragraphs (a)(1) and (2) of this section, if a storage tank assigned to the OLD affected source is subject to control under 40 CFR part 60, subpart Kb, or 40 CFR part 61, subpart Y, you may elect to comply only with the requirements of this subpart for storage tanks meeting the applicability criteria for control in Table 2 to this subpart.

- (4) Beginning no later than the compliance dates specified in § 63.2342(e), the applicability criteria for control specified in Table 2 to this subpart for storage tanks at an existing affected source no longer apply as specified in § 63.2346(a)(5). Instead, beginning no later than the compliance dates specified in § 63.2342(e), as an alternative to paragraphs (a)(1) and (2) of this section, if a storage tank assigned to an existing OLD affected source is subject to control under 40 CFR part 60, subpart Kb, or 40 CFR part 61, subpart Y, you may elect to comply only with the requirements of this subpart for storage tanks at an existing affected source meeting the applicability criteria for control in Table 2b to this subpart.
- (b) **Compliance with other regulations for transfer racks.** After the compliance dates specified in § 63.2342, if you have a transfer rack that is subject to 40 CFR part 61, subpart BB, and that transfer rack is in OLD operation, you must meet all of the requirements of this subpart for that transfer rack when the transfer rack is in OLD operation during the loading of organic liquids.
- (c) **Compliance with other regulations for equipment leak components.**
 - (1) After the compliance dates specified in § 63.2342, if you have pumps, valves, or sampling connections that are subject to a 40 CFR part 60 subpart, and those pumps, valves, and sampling connections are in OLD operation and in organic liquids service, as defined in this subpart, you must comply with the provisions of each subpart for those equipment leak components.
 - (2) After the compliance dates specified in § 63.2342, if you have pumps, valves, or sampling connections subject to subpart GGG of this part, and those pumps, valves, and sampling connections are in OLD operation and in organic liquids service, as defined in this subpart, you may elect to comply with the provisions of this subpart for all such equipment leak components. You must identify in the Notification of Compliance Status required by § 63.2382(b) the provisions with which you will comply.
- (d) **Overlap of subpart EEEE with other regulations for flares for the OLD source category.**
 - (1) Beginning no later than the compliance dates specified in § 63.2342(e), flares that are subject to § 60.18 of this chapter or § 63.11 and used as a control device for an emission point subject to the requirements in Tables 2 or 2b to of this subpart are required to comply only with § 63.2380. At any time before the compliance dates specified in § 63.2342(e), flares that are subject to § 60.18 or § 63.11 and elect to comply with § 63.2380 are required to comply only with § 63.2380.
 - (2) Beginning no later than the compliance dates specified in § 63.2342(e), flares that are subject to § 63.987 and used as a control device for an emission point subject to the requirements in Tables 2 or 2b to this subpart are required to comply only with § 63.2380. At any time before the compliance dates specified in § 63.2342(e), flares that are subject to §§ 63.987 and elect to comply with § 63.2380 are required to comply only with § 63.2380.
 - (3) Beginning no later than the compliance dates specified in § 63.2342(e), flares that are subject to the requirements of subpart CC of this part and used as a control device for an emission point subject to the requirements in Tables 2 or 2b to this subpart are required to comply only with the flare requirements in subpart CC of this part.
- (e) **Overlap with other regulations for monitoring, recordkeeping, and reporting –**
 - (1) **Control devices.** After the compliance dates specified in § 63.2342, if any control device subject to this subpart is also subject to monitoring, recordkeeping, and reporting requirements of another 40 CFR part 63 subpart, the owner or operator must be in compliance with the monitoring,

recordkeeping, and reporting requirements of this subpart EEEE. If complying with the monitoring, recordkeeping, and reporting requirements of the other subpart satisfies the monitoring, recordkeeping, and reporting requirements of this subpart, the owner or operator may elect to continue to comply with the monitoring, recordkeeping, and reporting requirements of the other subpart. In such instances, the owner or operator will be deemed to be in compliance with the monitoring, recordkeeping, and reporting requirements of this subpart. The owner or operator must identify the other subpart being complied with in the Notification of Compliance Status required by § 63.2382(b).

- (2) Equipment leak components. After the compliance dates specified in § 63.2342, if you are applying the applicable recordkeeping and reporting requirements of another subpart of this part to the valves, pumps, and sampling connection systems associated with a transfer rack subject to this subpart that only unloads organic liquids directly to or via pipeline to a non-tank process unit component or to a storage tank subject to the other subpart of this part, the owner or operator must be in compliance with the recordkeeping and reporting requirements of this subpart EEEE. If complying with the recordkeeping and reporting requirements of the other subpart satisfies the recordkeeping and reporting requirements of this subpart, the owner or operator may elect to continue to comply with the recordkeeping and reporting requirements of the other subpart. In such instances, the owner or operator will be deemed to be in compliance with the recordkeeping and reporting requirements of this subpart. The owner or operator must identify the other subpart being complied with in the Notification of Compliance Status required by § 63.2382(d).

[69 FR 5063, Feb. 3, 2004, as amended at 71 FR 42911, July 28, 2006; 85 FR 40772, July 7, 2020]

§ 63.2398 What parts of the General Provisions apply to me?

Table 12 to this subpart shows which parts of the General Provisions in §§ 63.1 through 63.15 apply to you.

§ 63.2402 Who implements and enforces this subpart?

- (a) This subpart can be implemented and enforced by the U.S. Environmental Protection Agency (U.S. EPA) or a delegated authority such as your State, local, or eligible tribal agency. If the EPA Administrator has delegated authority to your State, local, or eligible tribal agency, then that agency, as well as the EPA, has the authority to implement and enforce this subpart. You should contact your EPA Regional Office (see list in § 63.13) to find out if this subpart is delegated to your State, local, or eligible tribal agency.
- (b) In delegating implementation and enforcement authority for this subpart to a State, local, or eligible tribal agency under subpart E of this part, the authorities contained in paragraphs (b)(1) through (5) of this section are retained by the EPA Administrator and are not delegated to the State, local, or eligible tribal agency.
 - (1) Approval of alternatives to the nonopacity emission limitations, operating limits, and work practice standards in § 63.2346(a) through (c) under § 63.6(g).
 - (2) Approval of major changes to test methods under § 63.7(e)(2)(ii) and (f) and as defined in § 63.90.
 - (3) Approval of major changes to monitoring under § 63.8(f) and as defined in § 63.90.
 - (4) Approval of major changes to recordkeeping and reporting under § 63.10(f) and as defined in § 63.90.
 - (5) Approval of an alternative to any electronic reporting to the EPA required by this subpart.

[69 FR 5063, Feb. 3, 2004, as amended at 71 FR 42911, July 28, 2006; 85 FR 40773, July 7, 2020]

§ 63.2406 What definitions apply to this subpart?

Terms used in this subpart are defined in the CAA, in § 63.2, 40 CFR part 63, subparts H, PP, SS, TT, UU, and WW, and in this section. If the same term is defined in another subpart and in this section, it will have the meaning given in this section for purposes of this subpart. Notwithstanding the introductory language in § 63.921, the terms “container” and “safety device” shall have the meaning found in this subpart and not in § 63.921.

Actual annual average temperature, for organic liquids, means the temperature determined using the following methods:

- (1) For heated or cooled storage tanks, use the calculated annual average temperature of the stored organic liquid as determined from a design analysis of the storage tank.
- (2) For ambient temperature storage tanks:
 - (i) Use the annual average of the local (nearest) normal daily mean temperatures reported by the National Climatic Data Center; or
 - (ii) Use any other method that the EPA approves.

Annual average true vapor pressure means the equilibrium partial pressure exerted by the total organic HAP in Table 1 to this subpart in the stored or transferred organic liquid. For the purpose of determining if a liquid meets the definition of an organic liquid, the vapor pressure is determined using conditions of 77 degrees Fahrenheit and 29.92 inches of mercury. For the purpose of determining whether an organic liquid meets the applicability criteria in Table 2 to this subpart, items 1 through 6, or Table 2b to this subpart, items 1 through 3, use the actual annual average temperature as defined in this subpart. The vapor pressure value in either of these cases is determined:

- (1) Using standard reference texts; or
- (2) [Reserved]
- (3) Using any other method that the EPA approves.

Bottoms receiver means a tank that collects distillation bottoms before the stream is sent for storage or for further processing downstream.

Cargo tank means a liquid-carrying tank permanently attached and forming an integral part of a motor vehicle or truck trailer. This term also refers to the entire cargo tank motor vehicle or trailer. For the purpose of this subpart, vacuum trucks used exclusively for maintenance or spill response are not considered cargo tanks.

Closed vent system means a system that is not open to the atmosphere and is composed of piping, ductwork, connections, and, if necessary, flow-inducing devices that transport gas or vapors from an emission point to a control device. This system does not include the vapor collection system that is part of some transport vehicles or the loading arm or hose that is used for vapor return. For transfer racks, the closed vent system begins at, and includes, the first block valve on the downstream side of the loading arm or hose used to convey displaced vapors.

Combustion device means an individual unit of equipment, such as a flare, oxidizer, catalytic oxidizer, process heater, or boiler, used for the combustion of organic emissions.

Condensate means hydrocarbon liquid separated from natural gas that condenses due to changes in the temperature or pressure, or both, and remains liquid at standard conditions as specified in § 63.2. Only those condensates downstream of the first point of custody transfer after the production field are considered condensates in this subpart.

Container means a portable unit in which a material can be stored, transported, treated, disposed of, or otherwise handled. Examples of containers include, but are not limited to, drums and portable cargo containers known as "portable tanks" or "totes."

Control device means any combustion device, recovery device, recapture device, or any combination of these devices used to comply with this subpart. Such equipment or devices include, but are not limited to, absorbers, adsorbers, condensers, and combustion devices. Primary condensers, steam strippers, and fuel gas systems are not considered control devices.

Crude oil means any of the naturally occurring liquids commonly referred to as crude oil, regardless of specific physical properties. Only those crude oils downstream of the first point of custody transfer after the production field are considered crude oils in this subpart.

Custody transfer means the transfer of hydrocarbon liquids after processing and/or treatment in the producing operations, or from storage tanks or automatic transfer facilities to pipelines or any other forms of transportation.

Design evaluation means a procedure for evaluating control devices that complies with the requirements in § 63.985(b)(1)(i).

Deviation means any instance in which an affected source subject to this subpart, or portion thereof, or an owner or operator of such a source:

- (1) Fails to meet any requirement or obligation established by this subpart including, but not limited to, any emission limitation (including any operating limit) or work practice standard;
- (2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart, and that is included in the operating permit for any affected source required to obtain such a permit; or
- (3) Before July 7, 2023, fails to meet any emission limitation (including any operating limit) or work practice standard in this subpart during SSM. On and after July 7, 2023, this paragraph no longer applies.

Emission limitation means an emission limit, opacity limit, operating limit, or visible emission limit.

Equipment leak component means each pump, valve, and sampling connection system used in organic liquids service at an OLD operation. Valve types include control, globe, gate, plug, and ball. Relief and check valves are excluded.

Gasoline means any petroleum distillate or petroleum distillate/alcohol blend having a Reid vapor pressure of 27.6 kilopascals (4.0 pounds per square inch absolute (psia)) or greater which is used as a fuel for internal combustion engines. Aviation gasoline is included in this definition.

High throughput transfer rack means those transfer racks that transfer into transport vehicles (for existing affected sources) or into transport vehicles and containers (for new affected sources) a total of 11.8 million liters per year or greater of organic liquids.

In organic liquids service means that an equipment leak component contains or contacts organic liquids having 5 percent by weight or greater of the organic HAP listed in Table 1 to this subpart.

Low throughput transfer rack means those transfer racks that transfer into transport vehicles (for existing affected sources) or into transport vehicles and containers (for new affected sources) less than 11.8 million liters per year of organic liquids.

On-site or on site means, with respect to records required to be maintained by this subpart or required by another subpart referenced by this subpart, that records are stored at a location within a major source which encompasses the affected source. On-site includes, but is not limited to, storage at the affected source to which the records pertain, storage in central files elsewhere at the major source, or electronically available at the site.

Organic liquid means:

- (1) Any non-crude oil liquid, non-condensate liquid, or liquid mixture that contains 5 percent by weight or greater of the organic HAP listed in Table 1 to this subpart, as determined using the procedures specified in § 63.2354(c).
- (2) Any crude oils or condensates downstream of the first point of custody transfer.
- (3) Organic liquids for purposes of this subpart do not include the following liquids:
 - (i) Gasoline (including aviation gasoline), kerosene (No. 1 distillate oil), diesel (No. 2 distillate oil), asphalt, and heavier distillate oils and fuel oils;
 - (ii) Any fuel consumed or dispensed on the plant site directly to users (such as fuels for fleet refueling or for refueling marine vessels that support the operation of the plant);
 - (iii) Hazardous waste;
 - (iv) Wastewater;
 - (v) Ballast water; or
 - (vi) Any non-crude oil or non-condensate liquid with an annual average true vapor pressure less than 0.7 kilopascals (0.1 psia).

Organic liquids distribution (OLD) operation means the combination of activities and equipment used to store or transfer organic liquids into, out of, or within a plant site regardless of the specific activity being performed. Activities include, but are not limited to, storage, transfer, blending, compounding, and packaging.

Permitting authority means one of the following:

- (1) The State Air Pollution Control Agency, local agency, or other agency authorized by the EPA Administrator to carry out a permit program under 40 CFR part 70; or
- (2) The EPA Administrator, in the case of EPA-implemented permit programs under title V of the CAA (42 U.S.C. 7661) and 40 CFR part 71.

Plant site means all contiguous or adjoining surface property that is under common control, including surface properties that are separated only by a road or other public right-of-way. Common control includes surface properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, or any combination.

Pressure relief device means a valve, rupture disk, or similar device used only to release an unplanned, nonroutine discharge of gas from process equipment in order to avoid safety hazards or equipment damage. A pressure relief device discharge can result from an operator error, a malfunction such as a power failure or equipment failure, or other unexpected cause. Such devices include conventional, spring-actuated relief valves, balanced bellows relief valves, pilot-operated relief valves, rupture disks, and breaking, buckling, or shearing pin devices.

Relief valve means a type of pressure relief device that is designed to re-close after the pressure relief.

Research and development facility means laboratory and pilot plant operations whose primary purpose is to conduct research and development into new processes and products, where the operations are under the close supervision of technically trained personnel, and which are not engaged in the manufacture of products for commercial sale, except in a *de minimis* manner.

Responsible official means responsible official as defined in 40 CFR 70.2 and 40 CFR 71.2, as applicable.

Safety device means a closure device such as a pressure relief valve, frangible disc, fusible plug, or any other type of device that functions exclusively to prevent physical damage or permanent deformation to a unit or its air emission control equipment by venting gases or vapors directly to the atmosphere during unsafe conditions resulting from an unplanned, accidental, or emergency event.

Shutdown means the cessation of operation of an OLD affected source, or portion thereof (other than as part of normal operation of a batch-type operation), including equipment required or used to comply with this subpart, or the emptying and degassing of a storage tank. Shutdown as defined here includes, but is not limited to, events that result from periodic maintenance, replacement of equipment, or repair.

Startup means the setting in operation of an OLD affected source, or portion thereof (other than as part of normal operation of a batch-type operation), for any purpose. Startup also includes the placing in operation of any individual piece of equipment required or used to comply with this subpart including, but not limited to, control devices and monitors.

Storage tank means a stationary unit that is constructed primarily of nonearthen materials (such as wood, concrete, steel, or reinforced plastic) that provide structural support and is designed to hold a bulk quantity of liquid. Storage tanks do not include:

- (1) Units permanently attached to conveyances such as trucks, trailers, rail cars, barges, or ships;
- (2) Pressure vessels designed to operate in excess of 204.9 kilopascals and without emissions to the atmosphere;
- (3) Bottoms receivers;
- (4) Surge control vessels;
- (5) Vessels storing wastewater; or
- (6) Reactor vessels associated with a manufacturing process unit.

Surge control vessel means feed drums, recycle drums, and intermediate vessels. Surge control vessels are used within chemical manufacturing processes when in-process storage, mixing, or management of flow rates or volumes is needed to assist in production of a product.

Tank car means a car designed to carry liquid freight by rail, and including a permanently attached tank.

Total actual annual facility-level organic liquid loading volume means the total facility-level actual volume of organic liquid loaded for transport within or out of the facility through transfer racks that are part of the affected source into transport vehicles (for existing affected sources) or into transport vehicles and containers (for new affected sources) based on a 3-year rolling average, calculated annually.

- (1) For existing affected sources, each 3-year rolling average is based on actual facility-level loading volume during each calendar year (January 1 through December 31) in the 3-year period. For calendar year 2004 only (the first year of the initial 3-year rolling average), if an owner or operator of an affected source does not have actual loading volume data for the time period from January 1, 2004, through February 2, 2004 (the time period prior to the effective date of the OLD NESHAP), the owner or operator shall compute a facility-level loading volume for this time period as follows: At the end of the 2004 calendar year, the owner or operator shall calculate a daily average facility-level loading volume (based on the actual loading volume for February 3, 2004, through December 31, 2004) and use that daily average to estimate the facility-level loading volume for the period of time from January 1, 2004, through February 2, 2004. The owner or operator shall then sum the estimated facility-level loading volume from January 1, 2004, through February 2, 2004, and the actual facility-level loading volume from February 3, 2004, through December 31, 2004, to calculate the annual facility-level loading volume for calendar year 2004.
- (2)
 - (i) For new affected sources, the 3-year rolling average is calculated as an average of three 12-month periods. An owner or operator must select as the beginning calculation date with which to start the calculations as either the initial startup date of the new affected source or the first day of the calendar month following the month in which startup occurs. Once selected, the date with which the calculations begin cannot be changed.
 - (ii) The initial 3-year rolling average is based on the projected maximum facility-level annual loading volume for each of the 3 years following the selected beginning calculation date. The second 3-year rolling average is based on actual facility-level loading volume for the first year of operation plus a new projected maximum facility-level annual loading volume for second and third years following the selected beginning calculation date. The third 3-year rolling average is based on actual facility-level loading volume for the first 2 years of operation plus a new projected maximum annual facility-level loading volume for the third year following the beginning calculation date. Subsequent 3-year rolling averages are based on actual facility-level loading volume for each year in the 3-year rolling average.

Transfer rack means a single system used to load organic liquids into, or unload organic liquids out of, transport vehicles or containers. It includes all loading and unloading arms, pumps, meters, shutoff valves, relief valves, and other piping and equipment necessary for the transfer operation. Transfer equipment and operations that are physically separate (i.e., do not share common piping, valves, and other equipment) are considered to be separate transfer racks.

Transport vehicle means a cargo tank or tank car.

Vapor balancing system means:

- (1) A piping system that collects organic HAP vapors displaced from transport vehicles or containers during loading and routes the collected vapors to the storage tank from which the liquid being loaded originated or to another storage tank connected to a common header. For containers, the piping system must route the displaced vapors directly to the appropriate storage tank or to another storage tank connected to a common header in order to qualify as a vapor balancing system; or

- (2) A piping system that collects organic HAP vapors displaced from the loading of a storage tank and routes the collected vapors to the transport vehicle from which the storage tank is filled.

Vapor collection system means any equipment located at the source (i.e., at the OLD operation) that is not open to the atmosphere; that is composed of piping, connections, and, if necessary, flow-inducing devices; and that is used for:

- (1) Containing and conveying vapors displaced during the loading of transport vehicles to a control device;
- (2) Containing and directly conveying vapors displaced during the loading of containers; or
- (3) Vapor balancing. This does not include any of the vapor collection equipment that is installed on the transport vehicle.

Vapor-tight transport vehicle means a transport vehicle that has been demonstrated to be vapor-tight. To be considered vapor-tight, a transport vehicle equipped with vapor collection equipment must undergo a pressure change of no more than 250 pascals (1 inch of water) within 5 minutes after it is pressurized to 4,500 pascals (18 inches of water). This capability must be demonstrated annually using the procedures specified in Method 27 of 40 CFR part 60, appendix A-8. For all other transport vehicles, vapor tightness is demonstrated by performing the U.S. DOT pressure test procedures for tank cars and cargo tanks.

Work practice standard means any design, equipment, work practice, or operational standard, or combination thereof, that is promulgated pursuant to section 112(h) of the CAA.

[69 FR 5063, Feb. 3, 2004, as amended at 71 FR 42911, July 28, 2006; 85 FR 40773, July 7, 2020; 85 FR 44217, July 22, 2020; 89 FR 23867, Apr. 4, 2024]

Table 1 to Subpart EEEE of Part 63—Organic Hazardous Air Pollutants

You must use the organic HAP information listed in the following table to determine which of the liquids handled at your facility meet the HAP content criteria in the definition of Organic Liquid in § 63.2406.

Compound name	CAS No. ¹
2,4-D salts and esters	94-75-7
Acetaldehyde	75-07-0
Acetonitrile	75-05-8
Acetophenone	98-86-2
Acrolein	107-02-8
Acrylamide	79-06-1
Acrylic acid	79-10-7
Acrylonitrile	107-13-1
Allyl chloride	107-05-1
Aniline	62-53-3

¹ CAS numbers refer to the Chemical Abstracts Services registry number assigned to specific compounds, isomers, or mixtures of compounds.

Compound name	CAS No. ¹
Benzene	71-43-2
Biphenyl	92-52-4
Butadiene (1,3-)	106-99-0
Carbon tetrachloride	56-23-5
Chloroacetic acid	79-11-8
Chlorobenzene	108-90-7
2-Chloro-1,3-butadiene (Chloroprene)	126-99-8
Chloroform	67-66-3
m-Cresol	108-39-4
o-Cresol	95-48-7
p-Cresol	106-44-5
Cresols/cresylic acid	1319-77-3
Cumene	98-82-8
Dibenzofurans	132-64-9
Dibutylphthalate	84-74-2
Dichloroethane (1,2-) (Ethylene dichloride) (EDC)	107-06-2
Dichloropropene (1,3-)	542-75-6
Diethanolamine	111-42-2
Diethyl aniline (N,N-)	121-69-7
Diethylene glycol monobutyl ether	112-34-5
Diethylene glycol monomethyl ether	111-77-3
Diethyl sulfate	64-67-5
Dimethyl formamide	68-12-2
Dimethylhydrazine (1,1-)	57-14-7
Dioxane (1,4-) (1,4-Diethyleneoxide)	123-91-1
Epichlorohydrin (1-Chloro-2,3-epoxypropane)	106-89-8
Epoxybutane (1,2-)	106-88-7
Ethyl acrylate	140-88-5
Ethylbenzene	100-41-4
Ethyl chloride (Chloroethane)	75-00-3
Ethylene dibromide (Dibromomethane)	106-93-4
Ethylene glycol	107-21-1
Ethylene glycol dimethyl ether	110-71-4
Ethylene glycol monomethyl ether	109-86-4
Ethylene glycol monomethyl ether acetate	110-49-6
Ethylene glycol monophenyl ether	122-99-6
Ethylene oxide	75-21-8

¹ CAS numbers refer to the Chemical Abstracts Services registry number assigned to specific compounds, isomers, or mixtures of compounds.

Compound name	CAS No. ¹
Ethylidene dichloride (1,1-Dichloroethane)	75-34-3
Formaldehyde	50-00-0
Hexachloroethane	67-72-1
Hexane	110-54-3
Hydroquinone	123-31-9
Isophorone	78-59-1
Maleic anhydride	108-31-6
Methanol	67-56-1
Methyl chloride (Chloromethane)	74-87-3
Methylene chloride (Dichloromethane)	75-09-2
Methylenedianiline (4,4'-)	101-77-9
Methylene diphenyl diisocyanate	101-68-8
Methyl hydrazine	60-34-4
Methyl isobutyl ketone (Hexone) (MIBK)	108-10-1
Methyl methacrylate	80-62-6
Methyl tert-butyl ether (MTBE)	1634-04-4
Naphthalene	91-20-3
Nitrobenzene	98-95-3
Phenol	108-9-52
Phthalic anhydride	85-44-9
Polycyclic organic matter	50-32-8
Propionaldehyde	123-38-6
Propylene dichloride (1,2-Dichloropropane)	78-87-5
Propylene oxide	75-56-9
Quinoline	91-22-5
Styrene	100-42-5
Styrene oxide	96-09-3
Tetrachloroethane (1,1,2,2-)	79-34-5
Tetrachloroethylene (Perchloroethylene)	127-18-4
Toluene	108-88-3
Toluene diisocyanate (2,4-)	584-84-9
o-Toluidine	95-53-4
Trichlorobenzene (1,2,4-)	120-82-1
Trichloroethane (1,1,1-) (Methyl chloroform)	71-55-6
Trichloroethane (1,1,2-) (Vinyl trichloride)	79-00-5
Trichloroethylene	79-01-6
Triethylamine	121-44-8

¹ CAS numbers refer to the Chemical Abstracts Services registry number assigned to specific compounds, isomers, or mixtures of compounds.

Compound name	CAS No. ¹
Trimethylpentane (2,2,4-)	540-84-1
Vinyl acetate	108-05-4
Vinyl chloride (Chloroethylene)	75-01-4
Vinylidene chloride (1,1-Dichloroethylene)	75-35-4
Xylene (m-)	108-38-3
Xylene (o-)	95-47-6
Xylene (p-)	106-42-3
Xylenes (isomers and mixtures)	1330-20-7

¹ CAS numbers refer to the Chemical Abstracts Services registry number assigned to specific compounds, isomers, or mixtures of compounds.

[69 FR 5063, Feb. 3, 2004, as amended at 71 FR 42913, July 28, 2006]

Table 2 to Subpart EEEE of Part 63—Emission Limits

If you own or operate . . .	And if . . .	Then you must . . . ¹
1. A storage tank at an existing affected source with a capacity ≥18.9 cubic meters (5,000 gallons) and <189.3 cubic meters (50,000 gallons) ²	a. The stored organic liquid is not crude oil or condensate and if the annual average true vapor pressure of the total Table 1 organic HAP in the stored organic liquid is ≥27.6 kilopascals (4.0 psia) and <76.6 kilopascals (11.1 psia)	i. Reduce emissions of total organic HAP (or, upon approval, TOC) by at least 95 weight-percent or, as an option, to an exhaust concentration less than or equal to 20 ppmv, on a dry basis corrected to 3-percent oxygen for combustion devices using supplemental combustion air, by venting emissions through a closed vent system to any combination of control devices meeting the applicable requirements of subpart SS of this part and § 63.2346(l); OR ii. Comply with the work practice standards specified in Table 4 to this subpart, items 1.a, 1.b, or 1.c for tanks

¹ Beginning no later than the compliance dates specified in § 63.2342(e), for each storage tank and low throughput transfer rack, if you vent emissions through a closed vent system to a flare then you must comply with the requirements specified in § 63.2346(k).

² Beginning no later than the compliance dates specified in § 63.2342(e), the tank capacity criteria, liquid vapor pressure criteria, and emission limits specified for storage tanks at an existing affected source in Table 2 to this subpart, item 1 no longer apply. Instead, you must comply with the requirements as specified in § 63.2346(a)(5) and Table 2b to this subpart.

If you own or operate . . .	And if . . .	Then you must . . . ¹
		storing liquids described in that table.
		i. See the requirement in item 1.a.i or 1.a.ii of this table.
2. A storage tank at an existing affected source with a capacity ≥ 189.3 cubic meters (50,000 gallons)	b. The stored organic liquid is crude oil or condensate	
	a. The stored organic liquid is not crude oil or condensate and if the annual average true vapor pressure of the total Table 1 organic HAP in the stored organic liquid is < 76.6 kilopascals (11.1 psia)	i. See the requirement in item 1.a.i or 1.a.ii of this table.
	b. The stored organic liquid is crude oil or condensate	i. See the requirement in item 1.a.i or 1.a.ii of this table.
3. A storage tank at a reconstructed or new affected source with a capacity ≥ 18.9 cubic meters (5,000 gallons) and < 37.9 cubic meters (10,000 gallons)	a. The stored organic liquid is not crude oil or condensate and if the annual average true vapor pressure of the total Table 1 organic HAP in the stored organic liquid is ≥ 27.6 kilopascals (4.0 psia) and < 76.6 kilopascals (11.1 psia)	i. See the requirement in item 1.a.i or 1.a.ii of this table.
	b. The stored organic liquid is crude oil or	i. See the requirement in item 1.a.i or 1.a.ii of this table.

¹ Beginning no later than the compliance dates specified in § 63.2342(e), for each storage tank and low throughput transfer rack, if you vent emissions through a closed vent system to a flare then you must comply with the requirements specified in § 63.2346(k).

² Beginning no later than the compliance dates specified in § 63.2342(e), the tank capacity criteria, liquid vapor pressure criteria, and emission limits specified for storage tanks at an existing affected source in Table 2 to this subpart, item 1 no longer apply. Instead, you must comply with the requirements as specified in § 63.2346(a)(5) and Table 2b to this subpart.

If you own or operate . . .	And if . . .	Then you must . . . ¹
4. A storage tank at a reconstructed or new affected source with a capacity ≥ 37.9 cubic meters (10,000 gallons) and < 189.3 cubic meters (50,000 gallons)	condensate a. The stored organic liquid is not crude oil or condensate and if the annual average true vapor pressure of the total Table 1 organic HAP in the stored organic liquid is ≥ 0.7 kilopascals (0.1 psia) and < 76.6 kilopascals (11.1 psia) b. The stored organic liquid is crude oil or condensate	i. See the requirement in item 1.a.i or 1.a.ii of this table. i. See the requirement in item 1.a.i or 1.a.ii of this table.
5. A storage tank at a reconstructed or new affected source with a capacity ≥ 189.3 cubic meters (50,000 gallons)	a. The stored organic liquid is not crude oil or condensate and if the annual average true vapor pressure of the total Table 1 organic HAP in the stored organic liquid is < 76.6 kilopascals (11.1 psia) b. The stored organic liquid is crude oil or condensate	i. See the requirement in item 1.a.i or 1.a.ii of this table. i. See the requirement in item 1.a.i or 1.a.ii of this table.
6. A storage tank at an existing, reconstructed, or	a. The stored organic liquid is not crude oil or	i. Reduce emissions of total organic HAP (or, upon approval, TOC) by at least 95 weight-percent or, as an option, to an exhaust concentration less than or equal

¹ Beginning no later than the compliance dates specified in § 63.2342(e), for each storage tank and low throughput transfer rack, if you vent emissions through a closed vent system to a flare then you must comply with the requirements specified in § 63.2346(k).

² Beginning no later than the compliance dates specified in § 63.2342(e), the tank capacity criteria, liquid vapor pressure criteria, and emission limits specified for storage tanks at an existing affected source in Table 2 to this subpart, item 1 no longer apply. Instead, you must comply with the requirements as specified in § 63.2346(a)(5) and Table 2b to this subpart.

If you own or operate . . .	And if . . .	Then you must . . . ¹
new affected source meeting the capacity criteria specified in Table 2 to this subpart, items 1 through 5	condensate and if the annual average true vapor pressure of the total Table 1 organic HAP in the stored organic liquid is ≥ 76.6 kilopascals (11.1 psia)	to 20 ppmv, on a dry basis corrected to 3-percent oxygen for combustion devices using supplemental combustion air, by venting emissions through a closed vent system to any combination of control devices meeting the applicable requirements of subpart SS of this part and § 63.2346(l); OR ii. Comply with the work practice standards specified in Table 4 to this subpart, item 2.a or 2.b, for tanks storing the liquids described in that table.
7. A transfer rack at an existing facility where the total actual annual facility-level organic liquid loading volume through transfer racks is equal to or greater than 800,000 gallons and less than 10 million gallons	a. The total Table 1 organic HAP content of the organic liquid being loaded through one or more of the transfer rack's arms is at least 98 percent by weight and is being loaded into a transport vehicle	i. For all such loading arms at the rack, reduce emissions of total organic HAP (or, upon approval, TOC) from the loading of organic liquids either by venting the emissions that occur during loading through a closed vent system to any combination of control devices meeting the applicable requirements of subpart SS of this part and § 63.2346(l), achieving at least 98 weight-percent HAP reduction, OR, as an option, to an exhaust concentration less than or equal to 20 ppmv, on a dry basis corrected to 3-percent oxygen for combustion devices using supplemental combustion air; OR ii. During the loading of organic liquids, comply with the work practice standards specified in item 3 of Table 4 to this subpart.
8. A transfer rack at an existing facility where the total actual annual facility-level organic liquid loading volume through transfer racks is ≥ 10	a. One or more of the transfer rack's arms is loading an organic liquid into a transport vehicle	i. See the requirements in items 7.a.i and 7.a.ii of this table.

¹ Beginning no later than the compliance dates specified in § 63.2342(e), for each storage tank and low throughput transfer rack, if you vent emissions through a closed vent system to a flare then you must comply with the requirements specified in § 63.2346(k).

² Beginning no later than the compliance dates specified in § 63.2342(e), the tank capacity criteria, liquid vapor pressure criteria, and emission limits specified for storage tanks at an existing affected source in Table 2 to this subpart, item 1 no longer apply. Instead, you must comply with the requirements as specified in § 63.2346(a)(5) and Table 2b to this subpart.

If you own or operate . . .	And if . . .	Then you must . . . ¹
million gallons		
9. A transfer rack at a new facility where the total actual annual facility-level organic liquid loading volume through transfer racks is less than 800,000 gallons	a. The total Table 1 organic HAP content of the organic liquid being loaded through one or more of the transfer rack's arms is at least 25 percent by weight and is being loaded into a transport vehicle b. One or more of the transfer rack's arms is filling a container with a capacity equal to or greater than 55 gallons	i. See the requirements in items 7.a.i and 7.a.ii of this table. ii. For all such loading arms at the rack during the loading of organic liquids, comply with the provisions of §§ 63.924 through 63.927; OR iii. During the loading of organic liquids, comply with the work practice standards specified in item 3.a of Table 4 to this subpart.
10. A transfer rack at a new facility where the total actual annual facility-level organic liquid loading volume through transfer racks is equal to or greater than 800,000 gallons	a. One or more of the transfer rack's arms is loading an organic liquid into a transport vehicle b. One or more of the transfer rack's arms is filling a container with a capacity equal to or	i. See the requirements in items 7.a.i and 7.a.ii of this table. ii. For all such loading arms at the rack during the loading of organic liquids, comply with the provisions of §§ 63.924 through 63.927; OR

¹ Beginning no later than the compliance dates specified in § 63.2342(e), for each storage tank and low throughput transfer rack, if you vent emissions through a closed vent system to a flare then you must comply with the requirements specified in § 63.2346(k).

² Beginning no later than the compliance dates specified in § 63.2342(e), the tank capacity criteria, liquid vapor pressure criteria, and emission limits specified for storage tanks at an existing affected source in Table 2 to this subpart, item 1 no longer apply. Instead, you must comply with the requirements as specified in § 63.2346(a)(5) and Table 2b to this subpart.

If you own or operate . . .	And if . . .	Then you must . . . ¹
	greater than 55 gallons	ii. During the loading of organic liquids, comply with the work practice standards specified in item 3.a of Table 4 to this subpart.

¹ Beginning no later than the compliance dates specified in § 63.2342(e), for each storage tank and low throughput transfer rack, if you vent emissions through a closed vent system to a flare then you must comply with the requirements specified in § 63.2346(k).

² Beginning no later than the compliance dates specified in § 63.2342(e), the tank capacity criteria, liquid vapor pressure criteria, and emission limits specified for storage tanks at an existing affected source in Table 2 to this subpart, item 1 no longer apply. Instead, you must comply with the requirements as specified in § 63.2346(a)(5) and Table 2b to this subpart.

[85 FR 40774, July 7, 2020]

Table 2b to Subpart EEEE of Part 63—Emission Limits For Storage Tanks At Certain Existing Affected Sources

As stated in § 63.2346(a)(5), beginning no later than the compliance dates specified in § 63.2342(e), the requirements in this Table 2b to this subpart apply to storage tanks at an existing affected source in lieu of the requirements in Table 2 to this subpart, item 1 for storage tanks at an existing affected source.

If you own or operate . . .	And if . . .	Then you must . . .
1. A storage tank at an existing affected source with a capacity ≥18.9 cubic meters (5,000 gallons) and <75.7 cubic meters (20,000 gallons)	a. The stored organic liquid is not crude oil or condensate and if the annual average true vapor pressure of the total Table 1 organic HAP in the stored organic liquid is ≥27.6 kilopascals (4.0 psia)	i. Reduce emissions of total organic HAP (or, upon approval, TOC) by at least 95 weight-percent or, as an option, to an exhaust concentration less than or equal to 20 ppmv, on a dry basis corrected to 3- percent oxygen for combustion devices using supplemental combustion air, by venting emissions through a closed vent system to a flare meeting the requirements of §§ 63.983 and 63.2380, or by venting emissions through a closed vent system to any combination of nonflare control devices meeting the applicable requirements of subpart SS of this part and § 63.2346(l); OR. ii. Comply with the work practice standards specified in Table 4 to this subpart, items 1.a, 1.b, or 1.c for tanks storing liquids

If you own or operate . . .	And if . . .	Then you must . . .
2. A storage tank at an existing affected source with a capacity ≥ 75.7 cubic meters (20,000 gallons) and < 151.4 cubic meters (40,000 gallons) 3. A storage tank at an existing affected source with a capacity ≥ 151.4 cubic meters (40,000 gallons) and < 189.3 cubic meters (50,000 gallons)	b. The stored organic liquid is crude oil or condensate	described in that table. i. See the requirement in item 1.a.i or ii of this table.
	a. The stored organic liquid is not crude oil or condensate and if the annual average true vapor pressure of the total Table 1 organic HAP in the stored organic liquid is ≥ 13.1 kilopascals (1.9 psia)	i. See the requirement in item 1.a.i or ii of this table.
	b. The stored organic liquid is crude oil or condensate	i. See the requirement in item 1.a.i or ii of this table.
	a. The stored organic liquid is not crude oil or condensate and if the annual average true vapor pressure of the total Table 1 organic HAP in the stored organic liquid is ≥ 5.2 kilopascals (0.75 psia)	i. See the requirement in item 1.a.i or ii of this table.
	b. The stored organic liquid is crude oil or condensate	i. See the requirement in item 1.a.i or ii of this table.

[85 FR 40775, July 7, 2020]

Table 3 to Subpart EEEE of Part 63—Operating Limits—High Throughput Transfer Racks

As stated in § 63.2346(e), you must comply with the operating limits for existing, reconstructed, or new affected sources as follows:

For each existing, each reconstructed, and each new affected source using . . .	You must . . .
1. A thermal oxidizer to comply with an emission limit in Table 2 to this subpart	Maintain the daily average fire box or combustion zone temperature greater than or equal to the reference temperature established during the design evaluation or performance test that demonstrated compliance with the emission limit.
2. A catalytic oxidizer to comply with an emission limit in Table 2 to this subpart	a. Replace the existing catalyst bed before the age of the bed exceeds the maximum allowable age established during the design evaluation or performance test that demonstrated compliance with the emission limit; AND b. Maintain the daily average temperature at the inlet of the catalyst bed greater than or equal to the reference temperature established during the design evaluation or performance test that demonstrated compliance with the emission limit; AND c. Maintain the daily average temperature difference across the catalyst bed greater than or equal to the minimum temperature difference established during the design evaluation or performance test that demonstrated compliance with the emission limit.
3. An absorber to comply with an emission limit in Table 2 to this subpart	a. Maintain the daily average concentration level of organic compounds in the absorber exhaust less than or equal to the reference concentration established during the design evaluation or performance test that demonstrated compliance with the emission limit; OR b. Maintain the daily average scrubbing liquid temperature less than or equal to the reference temperature established during the design evaluation or performance test that demonstrated compliance with the emission limit; AND Maintain the difference between the specific gravities of the saturated and fresh scrubbing fluids greater than or equal to the difference established during the design evaluation or performance test that demonstrated compliance with the emission limit.
4. A condenser to comply with an emission limit in Table 2 to this	a. Maintain the daily average concentration level of organic compounds at the condenser exit less than or equal to the reference concentration established during the design evaluation or performance test that demonstrated compliance with the emission limit; OR

For each existing, each reconstructed, and each new affected source using . . .	You must . . .
subpart 5. An adsorption system with adsorbent regeneration to comply with an emission limit in Table 2 to this subpart 6. An adsorption system without adsorbent regeneration to comply with an emission limit in Table 2 to this subpart	b. Maintain the daily average condenser exit temperature less than or equal to the reference temperature established during the design evaluation or performance test that demonstrated compliance with the emission limit. a. Maintain the daily average concentration level of organic compounds in the adsorber exhaust less than or equal to the reference concentration established during the design evaluation or performance test that demonstrated compliance with the emission limit; OR b. Maintain the total regeneration stream mass flow during the adsorption bed regeneration cycle greater than or equal to the reference stream mass flow established during the design evaluation or performance test that demonstrated compliance with the emission limit; AND Before the adsorption cycle commences, achieve and maintain the temperature of the adsorption bed after regeneration less than or equal to the reference temperature established during the design evaluation or performance test that demonstrated compliance with the emission limit; AND Achieve a pressure reduction during each adsorption bed regeneration cycle greater than or equal to the pressure reduction established during the design evaluation or performance test that demonstrated compliance with the emission limit. a. Maintain the daily average concentration level of organic compounds in the adsorber exhaust less than or equal to the reference concentration established during the design evaluation or performance test that demonstrated compliance with the emission limit; OR b. Replace the existing adsorbent in each segment of the bed with an adsorbent that meets the replacement specifications established during the design evaluation or performance test before the age of the adsorbent exceeds the maximum allowable age established during the design evaluation or performance test that demonstrated compliance with the emission limit; AND Maintain the temperature of the adsorption bed less than or equal to the

For each existing, each reconstructed, and each new affected source using . . .	You must . . .
7. A flare to comply with an emission limit in Table 2 to this subpart	reference temperature established during the design evaluation or performance test that demonstrated compliance with the emission limit. a. Except as specified in item 7.d of this table, comply with the equipment and operating requirements in § 63.987(a); AND b. Except as specified in item 7.d of this table, conduct an initial flare compliance assessment in accordance with § 63.987(b); AND c. Except as specified in item 7.d of this table, install and operate monitoring equipment as specified in § 63.987(c). d. Beginning no later than the compliance dates specified in § 63.2342(e), comply with the requirements in § 63.2380 instead of the requirements in § 63.987 and the provisions regarding flare compliance assessments at § 63.997(a), (b), and (c).
8. Another type of control device to comply with an emission limit in Table 2 to this subpart	Submit a monitoring plan as specified in §§ 63.995(c) and 63.2366(b), and monitor the control device in accordance with that plan.

[85 FR 40776, July 7, 2020]

Table 4 to Subpart EEEE of Part 63—Work Practice Standards

As stated in § 63.2346, you may elect to comply with one of the work practice standards for existing, reconstructed, or new affected sources in the following table. If you elect to do so, . . .

For each . . .	You must . . .
1. Storage tank at an existing, reconstructed, or new affected source meeting any set of tank capacity and organic HAP vapor pressure criteria specified in Table 2 to this subpart, items 1 through 5 or Table 2b to this subpart, items 1 through 3	a. Comply with the requirements of 40 CFR part 63, subpart WW (control level 2), if you elect to meet 40 CFR part 63, subpart WW (control level 2) requirements as an alternative to the emission limit in Table 2 to this subpart, items 1 through 5 or the emission limit in Table 2b to this subpart, items 1 through 3; OR. b. Comply with the requirements in §§ 63.2346(l) and 63.984 for routing emissions to a fuel gas system or

For each . . .	You must . . .
2. Storage tank at an existing, reconstructed, or new affected source meeting any set of tank capacity and organic HAP vapor pressure criteria specified in Table 2 to this subpart, item 6	back to a process; OR. c. Comply with the requirements of § 63.2346(a)(4) for vapor balancing emissions to the transport vehicle from which the storage tank is filled. a. Comply with the requirements in §§ 63.2346(l) and 63.984 for routing emissions to a fuel gas system or back to a process; OR b. Comply with the requirements of § 63.2346(a)(4) for vapor balancing emissions to the transport vehicle from which the storage tank is filled.
3. Transfer rack subject to control based on the criteria specified in Table 2 to this subpart, items 7 through 10, at an existing, reconstructed, or new affected source	a. If the option of a vapor balancing system is selected, install and, during the loading of organic liquids, operate a system that meets the requirements in Table 7 to this subpart, item 3.b.i and item 3.b.ii, as applicable; OR b. Comply with the requirements in §§ 63.2346(l) and 63.984 during the loading of organic liquids, for routing emissions to a fuel gas system or back to a process.
4. Pump, valve, and sampling connection that operates in organic liquids service at least 300 hours per year at an existing, reconstructed, or new affected source	Comply with § 63.2346(l) and the requirements for pumps, valves, and sampling connections in 40 CFR part 63, subpart TT (control level 1), subpart UU (control level 2), or subpart H.
5. Transport vehicles equipped with vapor collection equipment that are loaded at transfer racks that are subject to control based on the criteria specified in Table 2 to this subpart, items 7 through 10	Follow the steps in 40 CFR 60.502(e) to ensure that organic liquids are loaded only into vapor-tight transport vehicles, and comply with the provisions in 40 CFR 60.502(f), (g), (h), and (i), except substitute the term transport vehicle at each occurrence of tank truck or gasoline tank truck in those paragraphs.
6. Transport vehicles equipped without vapor collection equipment that are loaded at transfer racks that are subject to control based on the criteria specified in Table 2 to this subpart, items 7 through 10	Ensure that organic liquids are loaded only into transport vehicles that have a current certification in accordance with the U.S. DOT qualification and maintenance requirements in 49 CFR part 180, subpart E for cargo tanks and subpart F for tank cars.

[85 FR 40777, July 7, 2020]

Table 5 to Subpart EEEE of Part 63—Requirements for Performance Tests and Design Evaluations

As stated in §§ 63.2354(a) and 63.2362, you must comply with the requirements for performance tests and design evaluations for existing, reconstructed, or new affected sources as follows:

For . . .	You must conduct . . .	According to . . .	Using . . .	To determine . . .	According to the following requirements . . .
1. Each existing, each reconstructed, and each new affected source using a nonflare control device to comply with an emission limit in Table 2 to this subpart, items 1 through 10, and each existing affected	a. A performance test to determine the organic HAP (or, upon approval, TOC) control efficiency of each nonflare control device, OR the exhaust concentration of each combustion device; OR	i. § 63.985(b)(1)(ii), § 63.988(b), § 63.990(b), or § 63.995(b)	(1) Method 1 or 1A in appendix A-1 of 40 CFR part 60, as appropriate	(A) Sampling port locations and the required number of traverse points	(i) Sampling sites must be located at the inlet and outlet of each control device if complying with the control efficiency requirement or at the outlet of the control device if complying with the exhaust concentration requirement;

¹ The manual method in American Society of Mechanical Engineers (ASME) PTC 19.10-1981-Part 10 (2010) (incorporated by reference, see § 63.14) may be used instead of Method 3B in appendix A-2 of 40 CFR part 60 to determine oxygen concentration.

² All compounds quantified by Method 320 of appendix A to this part must be validated according to Section 13.0 of Method 320.

³ ASTM D6420-18 (incorporated by reference, see § 63.14) may be used instead of Method 18 of 40 CFR part 60, appendix A-6 to determine total HAP emissions, but if you use ASTM D6420-18, you must use it under the conditions specified in § 63.2354(b)(3)(ii).

⁴ ASTM D6348-12e1 (incorporated by reference, see § 63.14) may be used instead of Method 320 of appendix A to this part under the following conditions: the test plan preparation and implementation in the Annexes to ASTM D6348-12e1, Sections A1 through A8 are mandatory; the percent (%) R must be determined for each target analyte (Equation A5.5); %R must be $70\% \geq R \leq 130\%$; if the %R value does not meet this criterion for a target compound, then the test data is not acceptable for that compound and the test must be repeated for that analyte (i.e., the sampling and/or analytical procedure should be adjusted before a retest); and the %R value for each compound must be reported in the test report and all field measurements must be corrected with the calculated %R value for that compound by using the following equation: Reported Results = ((Measured Concentration in Stack))/(%R) × 100.

For . . .	You must conduct . . .	According to . . .	Using . . .	To determine . . .	According to the following requirements . . .
source using a nonflare control device to comply with an emission limit in Table 2b to this subpart, items 1 through 3			(2) Method 2, 2A, 2C, 2D, or 2F in appendix A-1 of 40 CFR part 60, or Method 2G in appendix A-2 of 40 CFR part 60, as appropriate (3) Method 3A or 3B in appendix A-2	(A) Stack gas velocity and volumetric flow rate (A) Concentration of CO ₂ and O ₂	AND (ii) the outlet sampling site must be located at each control device prior to any releases to the atmosphere. See the requirements in items 1.a.i.(1)(A)(i) and (ii) of this table. See the requirements in items

¹ The manual method in American Society of Mechanical Engineers (ASME) PTC 19.10-1981-Part 10 (2010) (incorporated by reference, see § 63.14) may be used instead of Method 3B in appendix A-2 of 40 CFR part 60 to determine oxygen concentration.

² All compounds quantified by Method 320 of appendix A to this part must be validated according to Section 13.0 of Method 320.

³ ASTM D6420-18 (incorporated by reference, see § 63.14) may be used instead of Method 18 of 40 CFR part 60, appendix A-6 to determine total HAP emissions, but if you use ASTM D6420-18, you must use it under the conditions specified in § 63.2354(b)(3)(ii).

⁴ ASTM D6348-12e1 (incorporated by reference, see § 63.14) may be used instead of Method 320 of appendix A to this part under the following conditions: the test plan preparation and implementation in the Annexes to ASTM D6348-12e1, Sections A1 through A8 are mandatory; the percent (%) R must be determined for each target analyte (Equation A5.5); %R must be $70\% \geq R \leq 130\%$; if the %R value does not meet this criterion for a target compound, then the test data is not acceptable for that compound and the test must be repeated for that analyte (i.e., the sampling and/or analytical procedure should be adjusted before a retest); and the %R value for each compound must be reported in the test report and all field measurements must be corrected with the calculated %R value for that compound by using the following equation: Reported Results = ((Measured Concentration in Stack))/(%R) × 100.

For . . .	You must conduct . . .	According to . . .	Using . . .	To determine . . .	According to the following requirements . . .
			of 40 CFR part 60, as appropriate ¹ (4) Method 4 in appendix A-3 of 40 CFR part 60 (5) Method 25 or 25A in appendix A-7 of 40 CFR part 60, as appropriate. Method 316, Method 320 ⁴, or Method 323 in appendix A of this part if you must	and dry molecular weight of the stack gas (A) Moisture content of the stack gas (A) TOC and formaldehyde emissions, from any control device	1.a.i.(1)(A)(i) and (ii) of this table. See the requirements in items 1.a.i.(1)(A)(i) and (ii) of this table. (i) The organic HAP used for the calibration gas for Method 25A in appendix A-7 of 40 CFR part 60 must be the single organic HAP representing the largest percent by

¹ The manual method in American Society of Mechanical Engineers (ASME) PTC 19.10-1981-Part 10 (2010) (incorporated by reference, see § 63.14) may be used instead of Method 3B in appendix A-2 of 40 CFR part 60 to determine oxygen concentration.

² All compounds quantified by Method 320 of appendix A to this part must be validated according to Section 13.0 of Method 320.

³ ASTM D6420-18 (incorporated by reference, see § 63.14) may be used instead of Method 18 of 40 CFR part 60, appendix A-6 to determine total HAP emissions, but if you use ASTM D6420-18, you must use it under the conditions specified in § 63.2354(b)(3)(ii).

⁴ ASTM D6348-12e1 (incorporated by reference, see § 63.14) may be used instead of Method 320 of appendix A to this part under the following conditions: the test plan preparation and implementation in the Annexes to ASTM D6348-12e1, Sections A1 through A8 are mandatory; the percent (%) R must be determined for each target analyte (Equation A5.5); %R must be $70\% \geq R \leq 130\%$; if the %R value does not meet this criterion for a target compound, then the test data is not acceptable for that compound and the test must be repeated for that analyte (i.e., the sampling and/or analytical procedure should be adjusted before a retest); and the %R value for each compound must be reported in the test report and all field measurements must be corrected with the calculated %R value for that compound by using the following equation: Reported Results = ((Measured Concentration in Stack))/(%R) × 100.

For . . .	You must conduct . . .	According to . . .	Using . . .	To determine . . .	According to the following requirements . . .
			measure formaldehyde. You may not use Methods 320 ^{2 4} or 323 for formaldehyde if the gas stream contains entrained water droplets		volume of emissions; AND (ii) During the performance test, you must establish the operating parameter limits within which TOC emissions are reduced by the required weight-percent or, as an option for nonflare combustion devices, to 20-ppmv exhaust concentration.
			(6) Method 18 ³ in appendix	(A) Total organic HAP	(i) During the performance

¹ The manual method in American Society of Mechanical Engineers (ASME) PTC 19.10-1981-Part 10 (2010) (incorporated by reference, see § 63.14) may be used instead of Method 3B in appendix A-2 of 40 CFR part 60 to determine oxygen concentration.

² All compounds quantified by Method 320 of appendix A to this part must be validated according to Section 13.0 of Method 320.

³ ASTM D6420-18 (incorporated by reference, see § 63.14) may be used instead of Method 18 of 40 CFR part 60, appendix A-6 to determine total HAP emissions, but if you use ASTM D6420-18, you must use it under the conditions specified in § 63.2354(b)(3)(ii).

⁴ ASTM D6348-12e1 (incorporated by reference, see § 63.14) may be used instead of Method 320 of appendix A to this part under the following conditions: the test plan preparation and implementation in the Annexes to ASTM D6348-12e1, Sections A1 through A8 are mandatory; the percent (%) R must be determined for each target analyte (Equation A5.5); %R must be $70\% \geq R \leq 130\%$; if the %R value does not meet this criterion for a target compound, then the test data is not acceptable for that compound and the test must be repeated for that analyte (i.e., the sampling and/or analytical procedure should be adjusted before a retest); and the %R value for each compound must be reported in the test report and all field measurements must be corrected with the calculated %R value for that compound by using the following equation: Reported Results = ((Measured Concentration in Stack))/(%R) × 100.

For . . .	You must conduct . . .	According to . . .	Using . . .	To determine . . .	According to the following requirements . . .
			A-6 of 40 CFR part 60 or Method 320 ² of appendix A to this part, as appropriate. Method 316, Method 320 ² , or Method 323 in appendix A of this part for measuring formaldehyde. You may not use Methods 320 or 323 if the gas stream contains entrained water droplets	and formaldehyde emissions, from non-combustion control devices	test, you must establish the operating parameter limits within which total organic HAP emissions are reduced by the required weight-percent.

¹ The manual method in American Society of Mechanical Engineers (ASME) PTC 19.10-1981-Part 10 (2010) (incorporated by reference, see § 63.14) may be used instead of Method 3B in appendix A-2 of 40 CFR part 60 to determine oxygen concentration.

² All compounds quantified by Method 320 of appendix A to this part must be validated according to Section 13.0 of Method 320.

³ ASTM D6420-18 (incorporated by reference, see § 63.14) may be used instead of Method 18 of 40 CFR part 60, appendix A-6 to determine total HAP emissions, but if you use ASTM D6420-18, you must use it under the conditions specified in § 63.2354(b)(3)(ii).

⁴ ASTM D6348-12e1 (incorporated by reference, see § 63.14) may be used instead of Method 320 of appendix A to this part under the following conditions: the test plan preparation and implementation in the Annexes to ASTM D6348-12e1, Sections A1 through A8 are mandatory; the percent (%) R must be determined for each target analyte (Equation A5.5); %R must be $70\% \leq R \leq 130\%$; if the %R value does not meet this criterion for a target compound, then the test data is not acceptable for that compound and the test must be repeated for that analyte (i.e., the sampling and/or analytical procedure should be adjusted before a retest); and the %R value for each compound must be reported in the test report and all field measurements must be corrected with the calculated %R value for that compound by using the following equation: Reported Results = ((Measured Concentration in Stack))/(%R) × 100.

For . . .	You must conduct . . .	According to . . .	Using . . .	To determine . . .	According to the following requirements . . .
	b. A design evaluation (for nonflare control devices) to determine the organic HAP (or, upon approval, TOC) control efficiency of each nonflare control device, or the exhaust concentration of each combustion control device	§ 63.985(b)(1)(i)			During a design evaluation, you must establish the operating parameter limits within which total organic HAP, (or, upon approval, TOC) emissions are reduced by at least 95 weight-percent for storage tanks or 98 weight-percent for transfer racks, or, as an option for nonflare combustion devices, to 20-ppmv

¹ The manual method in American Society of Mechanical Engineers (ASME) PTC 19.10-1981-Part 10 (2010) (incorporated by reference, see § 63.14) may be used instead of Method 3B in appendix A-2 of 40 CFR part 60 to determine oxygen concentration.

² All compounds quantified by Method 320 of appendix A to this part must be validated according to Section 13.0 of Method 320.

³ ASTM D6420-18 (incorporated by reference, see § 63.14) may be used instead of Method 18 of 40 CFR part 60, appendix A-6 to determine total HAP emissions, but if you use ASTM D6420-18, you must use it under the conditions specified in § 63.2354(b)(3)(ii).

⁴ ASTM D6348-12e1 (incorporated by reference, see § 63.14) may be used instead of Method 320 of appendix A to this part under the following conditions: the test plan preparation and implementation in the Annexes to ASTM D6348-12e1, Sections A1 through A8 are mandatory; the percent (%) R must be determined for each target analyte (Equation A5.5); %R must be $70\% \leq R \leq 130\%$; if the %R value does not meet this criterion for a target compound, then the test data is not acceptable for that compound and the test must be repeated for that analyte (i.e., the sampling and/or analytical procedure should be adjusted before a retest); and the %R value for each compound must be reported in the test report and all field measurements must be corrected with the calculated %R value for that compound by using the following equation: Reported Results = ((Measured Concentration in Stack))/(%R) × 100.

For . . .	You must conduct . . .	According to . . .	Using . . .	To determine . . .	According to the following requirements . . .
2. Each transport vehicle that you own that is equipped with vapor collection equipment and is loaded with organic liquids at a transfer rack that is subject to control based on the criteria specified in Table 2 to this subpart, items 7 through 10, at an existing, reconstructed,	A performance test to determine the vapor tightness of the tank and then repair as needed until it passes the test		Method 27 of appendix A of 40 CFR part 60	Vapor tightness	exhaust concentration. The pressure change in the tank must be no more than 250 pascals (1 inch of water) in 5 minutes after it is pressurized to 4,500 pascals (18 inches of water).

¹ The manual method in American Society of Mechanical Engineers (ASME) PTC 19.10-1981-Part 10 (2010) (incorporated by reference, see § 63.14) may be used instead of Method 3B in appendix A-2 of 40 CFR part 60 to determine oxygen concentration.

² All compounds quantified by Method 320 of appendix A to this part must be validated according to Section 13.0 of Method 320.

³ ASTM D6420-18 (incorporated by reference, see § 63.14) may be used instead of Method 18 of 40 CFR part 60, appendix A-6 to determine total HAP emissions, but if you use ASTM D6420-18, you must use it under the conditions specified in § 63.2354(b)(3)(ii).

⁴ ASTM D6348-12e1 (incorporated by reference, see § 63.14) may be used instead of Method 320 of appendix A to this part under the following conditions: the test plan preparation and implementation in the Annexes to ASTM D6348-12e1, Sections A1 through A8 are mandatory; the percent (%) R must be determined for each target analyte (Equation A5.5); %R must be $70\% \leq R \leq 130\%$; if the %R value does not meet this criterion for a target compound, then the test data is not acceptable for that compound and the test must be repeated for that analyte (i.e., the sampling and/or analytical procedure should be adjusted before a retest); and the %R value for each compound must be reported in the test report and all field measurements must be corrected with the calculated %R value for that compound by using the following equation: Reported Results = ((Measured Concentration in Stack))/(%R) × 100.

For . . .	You must conduct . . .	According to . . .	Using . . .	To determine . . .	According to the following requirements . . .
or new affected source					

¹ The manual method in American Society of Mechanical Engineers (ASME) PTC 19.10-1981-Part 10 (2010) (incorporated by reference, see § 63.14) may be used instead of Method 3B in appendix A-2 of 40 CFR part 60 to determine oxygen concentration.

² All compounds quantified by Method 320 of appendix A to this part must be validated according to Section 13.0 of Method 320.

³ ASTM D6420-18 (incorporated by reference, see § 63.14) may be used instead of Method 18 of 40 CFR part 60, appendix A-6 to determine total HAP emissions, but if you use ASTM D6420-18, you must use it under the conditions specified in § 63.2354(b)(3)(ii).

⁴ ASTM D6348-12e1 (incorporated by reference, see § 63.14) may be used instead of Method 320 of appendix A to this part under the following conditions: the test plan preparation and implementation in the Annexes to ASTM D6348-12e1, Sections A1 through A8 are mandatory; the percent (%) R must be determined for each target analyte (Equation A5.5); %R must be $70\% \geq R \leq 130\%$; if the %R value does not meet this criterion for a target compound, then the test data is not acceptable for that compound and the test must be repeated for that analyte (i.e., the sampling and/or analytical procedure should be adjusted before a retest); and the %R value for each compound must be reported in the test report and all field measurements must be corrected with the calculated %R value for that compound by using the following equation: $\text{Reported Results} = ((\text{Measured Concentration in Stack})/(\%R)) \times 100$.

[85 FR 40778, July 7, 2020]

Table 6 to Subpart EEEE of Part 63—Initial Compliance with Emission Limits

As stated in §§ 63.2370(a) and 63.2382(b), you must show initial compliance with the emission limits for existing, reconstructed, or new affected sources as follows:

For each . . .	For the following emission limit . . .	You have demonstrated initial compliance if . . .
1. Storage tank at an existing, reconstructed, or new affected source meeting any set of tank capacity and liquid organic	Reduce total organic HAP (or, upon approval, TOC) emissions by at least 95 weight-percent, or as an option for	Total organic HAP (or, upon approval, TOC) emissions, based on the results of the performance testing or design evaluation specified in Table 5 to this subpart, item 1.a or 1.b, respectively, are

For each . . .	For the following emission limit . . .	You have demonstrated initial compliance if . . .
HAP vapor pressure criteria specified in Table 2 to this subpart, items 1 through 6, or Table 2b to this subpart, items 1 through 3	nonflare combustion devices to an exhaust concentration of ≤ 20 ppmv	reduced by at least 95 weight-percent or as an option for nonflare combustion devices to an exhaust concentration ≤ 20 ppmv.
2. Transfer rack that is subject to control based on the criteria specified in Table 2 to this subpart, items 7 through 10, at an existing, reconstructed, or new affected source	Reduce total organic HAP (or, upon approval, TOC) emissions from the loading of organic liquids by at least 98 weight-percent, or as an option for nonflare combustion devices to an exhaust concentration of ≤ 20 ppmv	Total organic HAP (or, upon approval, TOC) emissions from the loading of organic liquids, based on the results of the performance testing or design evaluation specified in Table 5 to this subpart, item 1.a or 1.b, respectively, are reduced by at least 98 weight-percent or as an option for nonflare combustion devices to an exhaust concentration of ≤ 20 ppmv.

[85 FR 40780, July 7, 2020]

Table 7 to Subpart EEEE of Part 63—Initial Compliance with Work Practice Standards

For each . . .	If you . . .	You have demonstrated initial compliance if . . .
1. Storage tank at an existing affected source meeting either set of tank capacity and liquid organic HAP vapor pressure criteria specified in Table 2 to this subpart, items 1 or 2, or Table 2b to this subpart, items 1 through 3	a. Install a floating roof or equivalent control that meets the requirements in Table 4 to this subpart, item 1.a	i. After emptying and degassing, you visually inspect each internal floating roof before the refilling of the storage tank and perform seal gap inspections of the primary and secondary rim seals of each external floating roof within 90 days after the refilling of the storage tank.
	b. Route emissions to a fuel gas system or back to a process	i. You meet the requirements in § 63.984(b) and submit the statement of connection required by § 63.984(c).
	c. Install and, during the filling of the storage tank	i. You meet the requirements in § 63.2346(a)(4).

For each . . .	If you . . .	You have demonstrated initial compliance if . . .
2. Storage tank at a reconstructed or new affected source meeting any set of tank capacity and liquid organic HAP vapor pressure criteria specified in Table 2 to this subpart, items 3 through 5	with organic liquids, operate a vapor balancing system a. Install a floating roof or equivalent control that meets the requirements in Table 4 to this subpart, item 1.a b. Route emissions to a fuel gas system or back to a process c. Install and, during the filling of the storage tank with organic liquids, operate a vapor balancing system	i. You visually inspect each internal floating roof before the initial filling of the storage tank and perform seal gap inspections of the primary and secondary rim seals of each external floating roof within 90 days after the initial filling of the storage tank. i. See item 1.b.i of this table. i. See item 1.c.i of this table.
3. Transfer rack that is subject to control based on the criteria specified in Table 2 to this subpart, items 7 through 10, at an existing, reconstructed, or new affected source	a. Load organic liquids only into transport vehicles having current vapor tightness certification as described in Table 4 to this subpart, item 5 and item 6 b. Install and, during the loading of organic liquids, operate a vapor balancing system	i. You comply with the provisions specified in Table 4 to this subpart, item 5 or item 6, as applicable. i. You design and operate the vapor balancing system to route organic HAP vapors displaced from loading of organic liquids into transport vehicles to the storage tank from which the liquid being loaded originated or to another storage tank connected to a common header. ii. You design and operate the vapor balancing system to route organic HAP vapors displaced from loading of organic liquids into containers directly (e.g., no intervening tank or

For each . . .	If you . . .	You have demonstrated initial compliance if . . .
4. Equipment leak component, as defined in § 63.2406, that operates in organic liquids service ≥300 hours per year at an existing, reconstructed, or new affected source	c. Route emissions to a fuel gas system or back to a process a. Carry out a leak detection and repair program or equivalent control according to one of the subparts listed in Table 4 to this subpart, item 4	containment area such as a room) to the storage tank from which the liquid being loaded originated or to another storage tank connected to a common header. i. See item 1.b.i of this table. i. You specify which one of the control programs listed in Table 4 to this subpart you have selected, OR ii. Provide written specifications for your equivalent control approach.

[85 FR 40780, July 7, 2020]

Table 8 to Subpart EEEE of Part 63—Continuous Compliance with Emission Limits

As stated in §§ 63.2378(a) and (b) and 63.2390(b), you must show continuous compliance with the emission limits for existing, reconstructed, or new affected sources according to the following table:

For each . . .	For the following emission limit . . .	You must demonstrate continuous compliance by . . .
1. Storage tank at an existing, reconstructed, or new affected source meeting any set of tank capacity and liquid organic HAP vapor pressure criteria specified in Table 2 to this subpart, items 1 through 6 or Table 2b to this subpart, items 1 through 3	a. Reduce total organic HAP (or, upon approval, TOC) emissions from the closed vent system and control device by 95 weight-percent or greater, or as an option to 20 ppmv or less of total organic HAP (or, upon approval, TOC) in the exhaust of combustion devices	i. Performing CMS monitoring and collecting data according to §§ 63.2366, 63.2374, and 63.2378, except as specified in item 1.a.iii of this table; AND ii. Maintaining the operating limits established during the design evaluation or performance test that demonstrated compliance with the emission limit.

For each . . .	For the following emission limit . . .	You must demonstrate continuous compliance by . . .
2. Transfer rack that is subject to control based on the criteria specified in Table 2 to this subpart, items 7 through 10, at an existing, reconstructed, or new affected source	a. Reduce total organic HAP (or, upon approval, TOC) emissions during the loading of organic liquids from the closed vent system and control device by 98 weight-percent or greater, or as an option to 20 ppmv or less of total organic HAP (or, upon approval, TOC) in the exhaust of combustion devices	iii. Beginning no later than the compliance dates specified in § 63.2342(e), if you use a flare, you must demonstrate continuous compliance by performing CMS monitoring and collecting data according to requirements in § 63.2380. i. Performing CMS monitoring and collecting data according to §§ 63.2366, 63.2374, and 63.2378 during the loading of organic liquids, except as specified in item 2.a.iii of this table; AND ii. Maintaining the operating limits established during the design evaluation or performance test that demonstrated compliance with the emission limit during the loading of organic liquids. iii. Beginning no later than the compliance dates specified in § 63.2342(e), if you use a flare, you must demonstrate continuous compliance by performing CMS monitoring and collecting data according to requirements in § 63.2380.

[85 FR 40781, July 7, 2020]

Table 9 to Subpart EEEE of Part 63—Continuous Compliance with Operating Limits—High Throughput Transfer Racks

As stated in §§ 63.2378(a) and (b) and 63.2390(b), you must show continuous compliance with the operating limits for existing, reconstructed, or new affected sources according to the following table:

For each existing, reconstructed, and each new affected source using . . .	For the following operating limit . . .	You must demonstrate continuous compliance by . . .
1. A thermal oxidizer to comply with an emission limit in Table 2 to this subpart	a. Maintain the daily average fire box or combustion zone, as applicable, temperature greater than or equal to the reference temperature established during the design evaluation or performance test that demonstrated compliance with the emission limit	i. Continuously monitoring and recording fire box or combustion zone, as applicable, temperature every 15 minutes and maintaining the daily average fire box temperature greater than or equal to the reference temperature established during the design evaluation or performance test that demonstrated compliance with the emission limit; AND ii. Keeping the applicable records required in § 63.998. ¹
2. A catalytic oxidizer to comply with an emission limit in Table 2 to this subpart	a. Replace the existing catalyst bed before the age of the bed exceeds the maximum allowable age established during the design evaluation or performance test that demonstrated compliance with the emission limit; AND b. Maintain the daily average temperature at the inlet of the catalyst bed greater than or equal to the reference temperature established during the design evaluation or performance test that demonstrated compliance with the emission limit; AND c. Maintain the daily average	i. Replacing the existing catalyst bed before the age of the bed exceeds the maximum allowable age established during the design evaluation or performance test that demonstrated compliance with the emission limit; AND ii. Keeping the applicable records required in § 63.998. ¹ i. Continuously monitoring and recording the temperature at the inlet of the catalyst bed at least every 15 minutes and maintaining the daily average temperature at the inlet of the catalyst bed greater than or equal to the reference temperature established during the design evaluation or performance test that demonstrated compliance with the emission limit; AND ii. Keeping the applicable records required in § 63.998. ¹ i. Continuously monitoring and recording the

¹ Beginning no later than the compliance dates specified in § 63.2342(e), the referenced provisions specified in § 63.2346(l) do not apply.

For each existing, reconstructed, and each new affected source using . . .	For the following operating limit . . .	You must demonstrate continuous compliance by . . .
3. An absorber to comply with an emission limit in Table 2 to this subpart	temperature difference across the catalyst bed greater than or equal to the minimum temperature difference established during the design evaluation or performance test that demonstrated compliance with the emission limit a. Maintain the daily average concentration level of organic compounds in the absorber exhaust less than or equal to the reference concentration established during the design evaluation or performance test that demonstrated compliance with the emission limit; OR b. Maintain the daily average scrubbing liquid temperature less than or equal to the reference temperature established during the design evaluation or performance test that demonstrated compliance with the emission limit; AND Maintain the difference between the specific gravities of the saturated and fresh scrubbing fluids greater than or equal to the difference established during the design evaluation or performance test that demonstrated compliance with the emission	temperature at the outlet of the catalyst bed every 15 minutes and maintaining the daily average temperature difference across the catalyst bed greater than or equal to the minimum temperature difference established during the design evaluation or performance test that demonstrated compliance with the emission limit; AND ii. Keeping the applicable records required in § 63.998.¹ i. Continuously monitoring the organic concentration in the absorber exhaust and maintaining the daily average concentration less than or equal to the reference concentration established during the design evaluation or performance test that demonstrated compliance with the emission limit; AND ii. Keeping the applicable records required in § 63.998.¹ i. Continuously monitoring the scrubbing liquid temperature and maintaining the daily average temperature less than or equal to the reference temperature established during the design evaluation or performance test that demonstrated compliance with the emission limit; AND ii. Maintaining the difference between the specific gravities greater than or equal to the difference established during the design evaluation or performance test that demonstrated compliance with the emission limit; AND iii. Keeping the applicable records required in § 63.998.¹

¹ Beginning no later than the compliance dates specified in § 63.2342(e), the referenced provisions specified in § 63.2346(l) do not apply.

For each existing, reconstructed, and each new affected source using . . .	For the following operating limit . . .	You must demonstrate continuous compliance by . . .
4. A condenser to comply with an emission limit in Table 2 to this subpart	limit a. Maintain the daily average concentration level of organic compounds at the exit of the condenser less than or equal to the reference concentration established during the design evaluation or performance test that demonstrated compliance with the emission limit; OR b. Maintain the daily average condenser exit temperature less than or equal to the reference temperature established during the design evaluation or performance test that demonstrated compliance with the emission limit	i. Continuously monitoring the organic concentration at the condenser exit and maintaining the daily average concentration less than or equal to the reference concentration established during the design evaluation or performance test that demonstrated compliance with the emission limit; AND ii. Keeping the applicable records required in § 63.998.¹ i. Continuously monitoring and recording the temperature at the exit of the condenser at least every 15 minutes and maintaining the daily average temperature less than or equal to the reference temperature established during the design evaluation or performance test that demonstrated compliance with the emission limit; AND ii. Keeping the applicable records required in § 63.998.¹
5. An adsorption system with adsorbent regeneration to comply with an emission limit in Table 2 to this subpart	a. Maintain the daily average concentration level of organic compounds in the adsorber exhaust less than or equal to the reference concentration established during the design evaluation or performance test that demonstrated compliance with the emission limit; OR b. Maintain the total regeneration stream mass flow during the adsorption bed regeneration cycle greater than or equal to the reference stream mass flow established during the design	i. Continuously monitoring the daily average organic concentration in the adsorber exhaust and maintaining the concentration less than or equal to the reference concentration established during the design evaluation or performance test that demonstrated compliance with the emission limit; AND ii. Keeping the applicable records required in § 63.998.¹ i. Maintaining the total regeneration stream mass flow during the adsorption bed regeneration cycle greater than or equal to the reference stream mass flow established during the design evaluation or performance test that demonstrated compliance with the emission

¹ Beginning no later than the compliance dates specified in § 63.2342(e), the referenced provisions specified in § 63.2346(l) do not apply.

For each existing, reconstructed, and each new affected source using . . .	For the following operating limit . . .	You must demonstrate continuous compliance by . . .
	evaluation or performance test that demonstrated compliance with the emission limit; AND Before the adsorption cycle commences, achieve and maintain the temperature of the adsorption bed after regeneration less than or equal to the reference temperature established during the design evaluation or performance test; AND Achieve greater than or equal to the pressure reduction during the adsorption bed regeneration cycle established during the design evaluation or performance test that demonstrated compliance with the emission limit	limit; AND ii. Maintaining the temperature of the adsorption bed after regeneration less than or equal to the reference temperature established during the design evaluation or performance test that demonstrated compliance with the emission limit; AND iii. Achieving greater than or equal to the pressure reduction during the regeneration cycle established during the design evaluation or performance test that demonstrated compliance with the emission limit; AND iv. Keeping the applicable records required in § 63.998. ¹
6. An adsorption system without adsorbent regeneration to comply with an emission limit in Table 2 to this subpart	a. Maintain the daily average concentration level of organic compounds in the adsorber exhaust less than or equal to the reference concentration established during the design evaluation or performance test that demonstrated compliance with the emission limit; OR b. Replace the existing adsorbent in each segment of the bed before the age of the adsorbent exceeds the maximum allowable age established during the design evaluation or performance test	i. Continuously monitoring the organic concentration in the adsorber exhaust and maintaining the concentration less than or equal to the reference concentration established during the design evaluation or performance test that demonstrated compliance with the emission limit; AND ii. Keeping the applicable records required in § 63.998. ¹ i. Replacing the existing adsorbent in each segment of the bed with an adsorbent that meets the replacement specifications established during the design evaluation or performance test before the age of the adsorbent exceeds the maximum allowable

¹ Beginning no later than the compliance dates specified in § 63.2342(e), the referenced provisions specified in § 63.2346(l) do not apply.

For each existing, reconstructed, and each new affected source using . . .	For the following operating limit . . .	You must demonstrate continuous compliance by . . .
7. A flare to comply with an emission limit in Table 2 to this subpart	that demonstrated compliance with the emission limit; AND Maintain the temperature of the adsorption bed less than or equal to the reference temperature established during the design evaluation or performance test that demonstrated compliance with the emission limit a. Except as specified in item 7.e of this table, maintain a pilot flame or flare flame in the flare at all times that vapors may be vented to the flare (§ 63.11(b)(5)); AND b. Except as specified in item 7.e of this table, maintain a flare flame at all times that vapors are being vented to the flare (§ 63.11(b)(5)); AND c. Except as specified in item 7.e of this table, operate the flare with no visible emissions, except for up to 5 minutes in any 2 consecutive hours (§ 63.11(b)(4)); AND EITHER d.1. Except as specified in item 7.e of this table, operate the flare with an exit velocity that is within the applicable limits in § 63.11(b)(7) and (8) and with a net heating value of the gas being combusted greater than the applicable minimum value in §	age established during the design evaluation or performance test that demonstrated compliance with the emission limit; AND ii. Maintaining the temperature of the adsorption bed less than or equal to the reference temperature established during the design evaluation or performance test that demonstrated compliance with the emission limit; AND iii. Keeping the applicable records required in § 63.998.¹ i. Continuously operating a device that detects the presence of the pilot flame or flare flame; AND ii. Keeping the applicable records required in § 63.998.¹ i. Maintaining a flare flame at all times that vapors are being vented to the flare; AND ii. Keeping the applicable records required in § 63.998.¹ i. Operating the flare with no visible emissions exceeding the amount allowed; AND ii. Keeping the applicable records required in § 63.998.¹ i. Operating the flare within the applicable exit velocity limits; AND ii. Operating the flare with the gas heating value greater than the applicable minimum value; AND iii. Keeping the applicable records required in § 63.998.¹

¹ Beginning no later than the compliance dates specified in § 63.2342(e), the referenced provisions specified in § 63.2346(l) do not apply.

For each existing, reconstructed, and each new affected source using . . .	For the following operating limit . . .	You must demonstrate continuous compliance by . . .
8. Another type of control device to comply with an emission limit in Table 2 to this subpart	63.11(b)(6)(ii); OR d.2. Except as specified in item 7.e of this table, adhere to the requirements in § 63.11(b)(6)(i) e. Beginning no later than the compliance dates specified in § 63.2342(e), comply with the requirements in § 63.2380 instead of the requirements in § 63.11(b) Submit a monitoring plan as specified in §§ 63.995(c) and 63.2366(b) and monitor the control device in accordance with that plan	i. Operating the flare within the applicable limits in 63.11(b)(6)(i); AND ii. Keeping the applicable records required in § 63.998.¹ i. Operating the flare with the applicable limits in § 63.2380; AND ii. Keeping the applicable records required in § 63.2390(h). Submitting a monitoring plan and monitoring the control device according to that plan.

¹ Beginning no later than the compliance dates specified in § 63.2342(e), the referenced provisions specified in § 63.2346(l) do not apply.

[85 FR 40782, July 7, 2020]

Table 10 to Subpart EEEE of Part 63—Continuous Compliance with Work Practice Standards

As stated in §§ 63.2378(a) and (b) and 63.2386(c)(6), you must show continuous compliance with the work practice standards for existing, reconstructed, or new affected sources according to the following table:

For each . . .	For the following standard . . .	You must demonstrate continuous compliance by . . .
1. Internal floating roof (IFR) storage tank at an existing,	a. Install a floating roof designed and	i. Visually inspecting the floating roof deck, deck fittings, and rim seals of each IFR once per year (§ 63.1063(d)(2)); AND ii. Visually inspecting the floating roof deck, deck fittings, and

For each . . .	For the following standard . . .	You must demonstrate continuous compliance by . . .
reconstructed, or new affected source meeting any set of tank capacity, and vapor pressure criteria specified in Table 2 to this subpart, items 1 through 5, or Table 2b to this subpart, items 1 through 3	operated according to the applicable specifications in § 63.1063(a) and (b)	rim seals of each IFR either each time the storage tank is completely emptied and degassed or every 10 years, whichever occurs first (§ 63.1063(c)(1), (d)(1), and (e)); AND iii. Keeping the tank records required in § 63.1065.
2. External floating roof (EFR) storage tank at an existing, reconstructed, or new affected source meeting any set of tank capacity and vapor pressure criteria specified in Table 2 to this subpart, items 1 through 5, or Table 2b to this subpart, items 1 through 3	a. Install a floating roof designed and operated according to the applicable specifications in § 63.1063(a) and (b)	i. Visually inspecting the floating roof deck, deck fittings, and rim seals of each EFR either each time the storage tank is completely emptied and degassed or every 10 years, whichever occurs first (§ 63.1063(c)(2), (d), and (e)); AND ii. Performing seal gap measurements on the secondary seal of each EFR at least once every year, and on the primary seal of each EFR at least every 5 years (§ 63.1063(c)(2), (d), and (e)); AND iii. Keeping the tank records required in § 63.1065.
3. IFR or EFR tank at an existing, reconstructed, or new affected source meeting any set of tank capacity and vapor pressure criteria specified in Table 2 to this subpart, items 1 through 5, or Table 2b to this subpart, items 1 through 3	a. Repair the conditions causing storage tank inspection failures (§ 63.1063(e))	i. Repairing conditions causing inspection failures: Before refilling the storage tank with organic liquid, or within 45 days (or up to 105 days with extensions) for a tank containing organic liquid; AND ii. Keeping the tank records required in § 63.1065(b).
4. Transfer rack that is subject to control based on	a. Ensure that organic liquids are	i. Ensuring that organic liquids are loaded into transport vehicles in accordance with the requirements in Table 4 to this subpart, items 5 or 6, as applicable.

40 CFR 63.2406 “Work practice standard” (enhanced display)

For each . . .	For the following standard . . .	You must demonstrate continuous compliance by . . .
Table 2 to this subpart, items 1 through 6, or Table 2b to this subpart, items 1 through 3	b. Install and, during the filling of the storage tank with organic liquids, operate a vapor balancing system	i. Except for pressure relief devices, monitoring each potential source of vapor leakage in the system, including, but not limited to pumps, valves, and sampling connections, quarterly during the loading of a storage tank using the methods and procedures described in the rule requirements selected for the work practice standard for equipment leak components as specified in Table 4 to this subpart, item 4. An instrument reading of 500 ppmv defines a leak. Repair of leaks is performed according to the repair requirements specified in your selected equipment leak standards. For pressure relief devices, comply with § 63.2346(a)(4)(v). If no loading of a storage tank occurs during a quarter, then monitoring of the vapor balancing system is not required

[85 FR 40784, July 7, 2020]

Table 11 to Subpart EEEE of Part 63—Requirements for Reports

As stated in § 63.2386(a), (b), and (f), you must submit compliance reports and startup, shutdown, and malfunction reports according to the following table:

You must submit a(n) . . .	The report must contain . . .	You must submit the report . . .
1. Compliance report or Periodic Report	a. The information specified in § 63.2386(c), (d), (e). If you had a SSM during the reporting period and you took actions consistent with your SSM plan, the report must also include the information in § 63.10(d)(5)(i) except as specified in item 1.e of this table; AND b. The information required by 40 CFR part 63, subpart TT, UU, or H, as applicable, for pumps, valves, and	Semiannually, and it must be postmarked or electronically submitted by January 31 or July 31, in accordance with § 63.2386(b). See the submission requirement in item 1.a of this table.

You must submit a(n) . . .	The report must contain . . .	You must submit the report . . .
2. Immediate SSM report if you had a SSM that resulted in an applicable emission standard in the relevant standard being exceeded, and you took an action that was not consistent with your SSM plan	sampling connections; AND c. The information required by § 63.999(c); AND d. The information specified in § 63.1066(b) including: Notification of inspection, inspection results, requests for alternate devices, and requests for extensions, as applicable e. Beginning no later than the compliance dates specified in § 63.2342(e), the requirement to include the information in § 63.10(d)(5)(i) no longer applies. a. The information required in § 63.10(d)(5)(ii)	See the submission requirement in item 1.a of this table. See the submission requirement in item 1.a of this table. i. Except as specified in item 2.a.ii of this table, by letter within 7 working days after the end of the event unless you have made alternative arrangements with the permitting authority (§ 63.10(d)(5)(ii)). ii. Beginning no later than the compliance dates specified in § 63.2342(e), item 2.a.i of this table no longer applies.

[85 FR 40786, July 7, 2020]

Table 12 to Subpart EEEE of Part 63—Applicability of General Provisions to Subpart EEEE

As stated in §§ 63.2382 and 63.2398, you must comply with the applicable General Provisions requirements as follows:

Citation	Subject	Brief description	Applies to subpart EEEE
§ 63.1	Applicability	Initial applicability determination; Applicability after standard	Yes.

Citation	Subject	Brief description	Applies to subpart EEEE
		established; Permit requirements; Extensions, Notifications	
§ 63.2	Definitions	Definitions for part 63 standards	Yes.
§ 63.3	Units and Abbreviations	Units and abbreviations for part 63 standards	Yes.
§ 63.4	Prohibited Activities and Circumvention	Prohibited activities; Circumvention, Severability	Yes.
§ 63.5	Construction/ Reconstruction	Applicability; Applications; Approvals	Yes.
§ 63.6(a)	Compliance with Standards/O&M Applicability	GP apply unless compliance extension; GP apply to area sources that become major	Yes.
§ 63.6(b)(1)-(4)	Compliance Dates for New and Reconstructed Sources	Standards apply at effective date; 3 years after effective date; upon startup; 10 years after construction or reconstruction commences for CAA section 112(f)	Yes.
§ 63.6(b)(5)	Notification	Must notify if commenced construction or reconstruction after proposal	Yes.
§ 63.6(b)(6)	[Reserved]		
§ 63.6(b)(7)	Compliance Dates for New and Reconstructed Area Sources That Become Major	Area sources that become major must comply with major source standards immediately upon becoming major, regardless of whether required to comply when they were an area source	Yes.
§ 63.6(c)(1)-(2)	Compliance Dates for Existing Sources	Comply according to date in this subpart, which must be no later than 3 years after effective date; for section 112(f) standards, comply within 90 days of effective date unless compliance extension	Yes.
§ 63.6(c)(3)-(4)	[Reserved]		
§ 63.6(c)(5)	Compliance Dates for Existing Area Sources That Become Major	Area sources that become major must comply with major source standards by date indicated in this subpart or by equivalent time period (e.g., 3 years)	Yes.
§ 63.6(d)	[Reserved]		

Citation	Subject	Brief description	Applies to subpart EEEE
§ 63.6(e)(1)(i)	Operation and Maintenance	Operate to minimize emissions at all times	Yes, before July 7, 2023. No, beginning on and after July 7, 2023. See § 63.2350(d) for general duty requirement.
§ 63.6(e)(1)(ii)	Operation and Maintenance	Correct malfunctions as soon as practicable	Yes, before July 7, 2023. No, beginning on and after July 7, 2023.
§ 63.6(e)(1)(iii)	Operation and Maintenance	Operation and maintenance requirements independently enforceable; information Administrator will use to determine if operation and maintenance requirements were met	Yes.
§ 63.6(e)(2) § 63.6(e)(3)	[Reserved] SSM Plan	Requirement for SSM plan; content of SSM plan; actions during SSM	Yes, before July 7, 2023; however, (1) the 2-day reporting requirement in paragraph § 63.6(e)(3)(iv) does not apply and (2) § 63.6(e)(3) does not apply to emissions sources not requiring control. No, beginning on and after July 7, 2023.
§ 63.6(f)(1)	Compliance Except During SSM	You must comply with emission standards at all times except during SSM	Yes, before July 7, 2023. No, beginning on and after July 7, 2023.
§ 63.6(f)(2)-(3)	Methods for Determining Compliance	Compliance based on performance test, operation and maintenance plans, records, inspection	Yes.
§ 63.6(g)(1)-(3)	Alternative Standard	Procedures for getting an alternative standard	Yes.
§ 63.6(h)(1)	Opacity/Visible	You must comply with opacity	Yes, before July 7,

Citation	Subject	Brief description	Applies to subpart EEEE
	Emission Standards	and visible emission standards at all times except during SSM	2023. No, beginning on and after July 7, 2023.
§ 63.6(h)(2)-(9)	Opacity/Visible Emission Standards	Requirements for compliance with opacity and visible emission standards	No; except as it applies to flares for which Method 22 observations are required as part of a flare compliance assessment.
§ 63.6(i)(1)-(14)	Compliance Extension	Procedures and criteria for Administrator to grant compliance extension	Yes.
§ 63.6(j)	Presidential Compliance Exemption	President may exempt any source from requirement to comply with this subpart	Yes.
§ 63.7(a)(2)	Performance Test Dates	Dates for conducting initial performance testing; must conduct 180 days after compliance date	Yes.
§ 63.7(a)(3)	Section 114 Authority	Administrator may require a performance test under CAA section 114 at any time	Yes.
§ 63.7(a)(4)	Force Majeure—Performance Testing Delay	Requirements to claim a delay in conducting a performance test due to force majeure	Yes.
§ 63.7(b)(1)	Notification of Performance Test	Must notify Administrator 60 days before the test	Yes.
§ 63.7(b)(2)	Notification of Rescheduling	If you have to reschedule performance test, must notify Administrator of rescheduled date as soon as practicable and without delay	Yes.
§ 63.7(c)	Quality Assurance (QA)/Test Plan	Requirement to submit site-specific test plan 60 days before the test or on date Administrator agrees with; test plan approval procedures; performance audit requirements; internal and external QA procedures for testing	Yes.
§ 63.7(d)	Testing Facilities	Requirements for testing	Yes.

Citation	Subject	Brief description	Applies to subpart EEEE
§ 63.7(e)(1)	Conditions for Conducting Performance Tests	facilities Performance tests must be conducted under representative conditions; cannot conduct performance tests during SSM	Yes, before July 7, 2023. No, beginning on and after July 7, 2023. See § 63.2354(b)(6).
§ 63.7(e)(2)	Conditions for Conducting Performance Tests	Must conduct according to this subpart and EPA test methods unless Administrator approves alternative	Yes.
§ 63.7(e)(3)	Test Run Duration	Must have three test runs of at least 1 hour each; compliance is based on arithmetic mean of three runs; conditions when data from an additional test run can be used	Yes; however, for transfer racks per §§ 63.987(b)(3)(i)(A)-(B) and 63.997(e)(1)(v)(A)-(B) provide exceptions to the requirement for test runs to be at least 1 hour each.
§ 63.7(e)(4)	Authority to Require Testing	Administrator has authority to require testing under CAA section 114 regardless of § 63.7 (e)(1)-(3)	Yes.
§ 63.7(f)	Alternative Test Method	Procedures by which Administrator can grant approval to use an intermediate or major change, or alternative to a test method	Yes.
§ 63.7(g)	Performance Test Data Analysis	Must include raw data in performance test report; must submit performance test data 60 days after end of test with the Notification of Compliance Status; keep data for 5 years	Yes, except this subpart specifies how and when the performance test and performance evaluation results are reported.
§ 63.7(h)	Waiver of Tests	Procedures for Administrator to waive performance test	Yes.
§ 63.8(a)(1)	Applicability of Monitoring Requirements	Subject to all monitoring requirements in standard	Yes.
§ 63.8(a)(2)	Performance	Performance Specifications in	Yes.

Citation	Subject	Brief description	Applies to subpart EEEE
	Specifications	appendix B of 40 CFR part 60 apply	
§ 63.8(a)(3)	[Reserved]		
§ 63.8(a)(4)	Monitoring of Flares	Monitoring requirements for flares in § 63.11	Yes, before July 7, 2023; however, flare monitoring requirements in § 63.987(c) also apply before July 7, 2023. No, beginning on and after July 7, 2023. See § 63.2380.
§ 63.8(b)(1)	Monitoring	Must conduct monitoring according to standard unless Administrator approves alternative	Yes.
§ 63.8(b)(2)-(3)	Multiple Effluents and Multiple Monitoring Systems	Specific requirements for installing monitoring systems; must install on each affected source or after combined with another affected source before it is released to the atmosphere provided the monitoring is sufficient to demonstrate compliance with the standard; if more than one monitoring system on an emission point, must report all monitoring system results, unless one monitoring system is a backup	Yes.
§ 63.8(c)(1)	Monitoring System Operation and Maintenance	Maintain monitoring system in a manner consistent with good air pollution control practices	Yes.
§ 63.8(c)(1)(i)	Routine and Predictable SSM	Keep parts for routine repairs readily available; reporting requirements for SSM when action is described in SSM plan	Yes, before July 7, 2023. No, beginning on and after July 7, 2023.
§ 63.8(c)(1)(ii)	CMS malfunction not in SSM plan	Keep the necessary parts for routine repairs if CMS malfunctions	Yes.
§ 63.8(c)(1)(iii)	Compliance with Operation and Maintenance	Develop a written SSM plan for CMS	Yes, before July 7, 2023. No, beginning on and

Citation	Subject	Brief description	Applies to subpart EEEE
§ 63.8(c)(2)-(3)	Requirements Monitoring System Installation	Must install to get representative emission or parameter measurements; must verify operational status before or at performance test	after July 7, 2023. Yes.
§ 63.8(c)(4)	CMS Requirements	CMS must be operating except during breakdown, out-of-control, repair, maintenance, and high-level calibration drifts; COMS must have a minimum of one cycle of sampling and analysis for each successive 10-second period and one cycle of data recording for each successive 6-minute period; CEMS must have a minimum of one cycle of operation for each successive 15-minute period	Yes; however, COMS are not applicable.
§ 63.8(c)(5)	COMS Minimum Procedures	COMS minimum procedures	No.
§ 63.8(c)(6)-(8)	CMS Requirements	Zero and high level calibration check requirements. Out-of-control periods	Yes, but only applies for CEMS. Subpart SS of this part provides requirements for CPMS.
§ 63.8(d)(1)-(2)	CMS Quality Control	Requirements for CMS quality control	Yes, but only applies for CEMS. Subpart SS of this part provides requirements for CPMS.
§ 63.8(d)(3)	CMS Quality Control	Must keep quality control plan on record for 5 years; keep old versions	Yes, before July 7, 2023, but only applies for CEMS. Subpart SS of this part provides requirements for CPMS. No, beginning on and after July 7, 2023. See § 63.2366(c).

Citation	Subject	Brief description	Applies to subpart EEEE
§ 63.8(e)	CMS Performance Evaluation	Notification, performance evaluation test plan, reports	Yes, but only applies for CEMS, except this subpart specifies how and when the performance evaluation results are reported.
§ 63.8(f)(1)-(5)	Alternative Monitoring Method	Procedures for Administrator to approve alternative monitoring	Yes, but subpart SS of this part also provides procedures for approval of CPMS.
§ 63.8(f)(6)	Alternative to Relative Accuracy Test	Procedures for Administrator to approve alternative relative accuracy tests for CEMS	Yes.
§ 63.8(g)	Data Reduction	COMS 6-minute averages calculated over at least 36 evenly spaced data points; CEMS 1 hour averages computed over at least four equally spaced data points; data that cannot be used in average	Yes; however, COMS are not applicable.
§ 63.9(a)	Notification Requirements	Applicability and State delegation	Yes.
§ 63.9(b)(1)-(2), (4)-(5)	Initial Notifications	Submit notification within 120 days after effective date; notification of intent to construct/reconstruct, notification of commencement of construction/reconstruction, notification of startup; contents of each	Yes.
§ 63.9(c)	Request for Compliance Extension	Can request if cannot comply by date or if installed best available control technology or lowest achievable emission rate (BACT/LAER)	Yes.
§ 63.9(d)	Notification of Special Compliance Requirements for New Sources	For sources that commence construction between proposal and promulgation and want to comply 3 years after effective date	Yes.
§ 63.9(e)	Notification of	Notify Administrator 60 days	Yes.

Citation	Subject	Brief description	Applies to subpart EEEE
§ 63.9(f)	Performance Test Notification of VE/Opacity Test	prior Notify Administrator 30 days prior	No.
§ 63.9(g)	Additional Notifications When Using CMS	Notification of performance evaluation; notification about use of COMS data; notification that exceeded criterion for relative accuracy alternative	Yes; however, there are no opacity standards.
§ 63.9(h)(1)-(6)	Notification of Compliance Status	Contents due 60 days after end of performance test or other compliance demonstration, except for opacity/visible emissions, which are due 30 days after; when to submit to federal vs. state authority	Yes; however, (1) there are no opacity standards and (2) all initial Notification of Compliance Status, including all performance test data, are to be submitted at the same time, either within 240 days after the compliance date or within 60 days after the last performance test demonstrating compliance has been completed, whichever occurs first.
§ 63.9(i)	Adjustment of Submittal Deadlines	Procedures for Administrator to approve change in when notifications must be submitted	Yes.
§ 63.9(j)	Change in Previous Information	Must submit within 15 days after the change	Yes for change to major source status, other changes are reported in the first and subsequent compliance reports.
§ 63.9(k)	Electronic reporting procedures	Procedure to report electronically for notifications and reports	Yes.
§ 63.10(a)	Recordkeeping/Reporting	Applies to all, unless compliance extension; when to submit to federal vs. state authority; procedures for owners of more	Yes.

Citation	Subject	Brief description	Applies to subpart EEEE
§ 63.10(b)(1)	Recordkeeping/ Reporting	than one source General requirements; keep all records readily available; keep for 5 years	Yes.
§ 63.10(b)(2)(i)	Records Related to Startup and Shutdown	Occurrence of each for operations (process equipment)	Yes, July 7, 2023. No, beginning on and after July 7, 2023.
§ 63.10(b)(2)(ii)	Recordkeeping Relevant to Malfunction Periods and CMS	Occurrence of each malfunction of air pollution equipment	Yes, before July 7, 2023. No, beginning on and after July 7, 2023. See § 63.2390(f).
§ 63.10(b)(2)(iii)	Recordkeeping Relevant to Maintenance of Air Pollution Control and Monitoring Equipment	Maintenance on air pollution control equipment	Yes.
§ 63.10(b)(2)(iv)	Recordkeeping Relevant to SSM Periods and CMS	Actions during SSM	Yes, before July 7, 2023. No, beginning on and after July 7, 2023.
§ 63.10(b)(2)(v)	Recordkeeping Relevant to SSM Periods and CMS	Actions during SSM	No.
§ 63.10(b)(2)(vi)-(xi)	CMS Records	Malfunctions, inoperative, out-of-control periods	Yes.
§ 63.10(b)(2)(xii)	Records	Records when under waiver	Yes.
§ 63.10(b)(2)(xiii)	Records	Records when using alternative to relative accuracy test	Yes.
§ 63.10(b)(2)(xiv)	Records	All documentation supporting initial notification and notification of compliance status	Yes.
§ 63.10(b)(3)	Records	Applicability determinations	Yes.
§ 63.10(c)(1)-(14)	Records	Additional records for CMS	Yes.
§ 63.10(c)(15)	Records	Additional records for CMS	Yes, before July 7, 2023. No, beginning on and after July 7, 2023.
§ 63.10(d)(1)	General Reporting	Requirement to report	Yes.

Citation	Subject	Brief description	Applies to subpart EEEE
§ 63.10(d)(2)	Requirements Report of Performance Test Results	When to submit to federal or state authority	No. This subpart specifies how and when the performance test results are reported.
§ 63.10(d)(3)	Reporting Opacity or Visible Emissions Observations	What to report and when	Yes.
§ 63.10(d)(4)	Progress Reports	Must submit progress reports on schedule if under compliance extension	Yes.
§ 63.10(d)(5)	SSM Reports	Contents and submission	Yes, before July 7, 2023. No, beginning on and after July 7, 2023. See § 63.2386(d)(1)(xiii).
§ 63.10(e)(1)-(2)	Additional CMS Reports	Must report results for each CEMS on a unit; written copy of CMS performance evaluation; two-three copies of COMS performance evaluation	Yes, except this subpart specifies how and when the performance evaluation results are reported; however, COMS are not applicable.
§ 63.10(e)(3)(i)-(iii)	Reports	Schedule for reporting excess emissions and parameter monitor exceedance (now defined as deviations)	Yes; however, note that the title of the report is the compliance report; deviations include excess emissions and parameter exceedances.
§ 63.10(e)(3)(iv)-(v)	Excess Emissions Reports	Requirement to revert to quarterly submission if there is an excess emissions or parameter monitoring exceedance (now defined as deviations); provision to request semiannual reporting after compliance for 1 year; submit report by 30th day following end	Yes.

Citation	Subject	Brief description	Applies to subpart EEEE
		of quarter or calendar half; if there has not been an exceedance or excess emissions (now defined as deviations), report contents in a statement that there have been no deviations; must submit report containing all of the information in §§ 63.8(c)(7)-(8) and 63.10(c)(5)-(13)	
§ 63.10(e)(3)(vi)-(viii)	Excess Emissions Report and Summary Report	Requirements for reporting excess emissions for CMS (now called deviations); requires all of the information in §§ 63.10(c)(5)-(13) and 63.8(c)(7)-(8)	No. This subpart specifies the reported information for deviations within the compliance reports.
§ 63.10(e)(4)	Reporting COMS Data	Must submit COMS data with performance test data	No.
§ 63.10(f)	Waiver for Recordkeeping/Reporting	Procedures for Administrator to waive	Yes.
§ 63.11(b)	Flares	Requirements for flares	Yes, before July 7, 2023; § 63.987 requirements apply, and the section references § 63.11(b). No, beginning on and after July 7, 2023. See § 63.2380.
§ 63.11(c), (d), and (e)	Control and work practice requirements	Alternative work practice for equipment leaks	Yes.
§ 63.12	Delegation	State authority to enforce standards	Yes.
§ 63.13	Addresses	Addresses where reports, notifications, and requests are sent	Yes.
§ 63.14	Incorporation by Reference	Test methods incorporated by reference	Yes.
§ 63.15	Availability of	Public and confidential	Yes.

Citation	Subject	Brief description	Applies to subpart EEEE
	Information	information	

[85 FR 40786, July 7, 2020, as amended at 85 FR 73903, Nov. 19, 2020; 89 FR 23867, Apr. 4, 2024]

This content is from the eCFR and is authoritative but unofficial.

Title 40 —Protection of Environment

Chapter I —Environmental Protection Agency

Subchapter C —Air Programs

Part 63 —National Emission Standards for Hazardous Air Pollutants for Source Categories

Authority: 42 U.S.C. 7401 *et seq.*

Source: 57 FR 61992, Dec. 29, 1992, unless otherwise noted.

Subpart FFFF National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing

What This Subpart Covers

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- § 63.2435 Am I subject to the requirements in this subpart?
- § 63.2440 What parts of my plant does this subpart cover?

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Emission Limits, Work Practice Standards, and Compliance Requirements

- § 63.2450 What are my general requirements for complying with this subpart?
- § 63.2455 What requirements must I meet for continuous process vents?
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- § 63.2490 What requirements must I meet for heat exchange systems?
- § 63.2492 How do I determine whether my process vent, storage tank, or equipment is in ethylene oxide service?
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Alternative Means of Compliance

- § 63.2495 How do I comply with the pollution prevention standard?
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Notification, Reports, and Records

- § 63.2515 What notifications must I submit and when?

§ 63.2520 What reports must I submit and when?

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Other Requirements and Information

§ 63.2535 What compliance options do I have if part of my plant is subject to both this subpart and another subpart?

§ 63.2540 What parts of the General Provisions apply to me?

§ 63.2545 Who implements and enforces this subpart?

§ 63.2550 What definitions apply to this subpart?

Table 1 to Subpart FFFF of Part 63

Emission Limits and Work Practice Standards for Continuous
Process Vents

Table 2 to Subpart FFFF of Part 63

Emission Limits and Work Practice Standards for Batch Process
Vents

Table 3 to Subpart FFFF of Part 63

Emission Limits for Hydrogen Halide and Halogen HAP
Emissions or HAP Metals Emissions From Process Vents

Table 4 to Subpart FFFF of Part 63

Emission Limits for Storage Tanks

Table 5 to Subpart FFFF of Part 63

Emission Limits and Work Practice Standards for Transfer Racks

Table 6 to Subpart FFFF of Part 63

Requirements for Equipment Leaks

Table 7 to Subpart FFFF of Part 63

Requirements for Wastewater Streams and Liquid Streams in
Open Systems Within an MCPU

Table 8 to Subpart FFFF of Part 63

Partially Soluble Hazardous Air Pollutants

Table 9 to Subpart FFFF of Part 63

Soluble Hazardous Air Pollutants

Table 10 to Subpart FFFF of Part 63

Work Practice Standards for Heat Exchange Systems

Table 11 to Subpart FFFF of Part 63

Requirements for Reports

Table 12 to Subpart FFFF of Part 63

Applicability of General Provisions to Subpart FFFF

Subpart FFFF—National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing

Source: 68 FR 63888, Nov. 10, 2003, unless otherwise noted.

WHAT THIS SUBPART COVERS

§ 63.2430 What is the purpose of this subpart?

This subpart establishes national emission standards for hazardous air pollutants (NESHAP) for miscellaneous organic chemical manufacturing. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limits, operating limits, and work practice standards.

§ 63.2435 Am I subject to the requirements in this subpart?

- (a) You are subject to the requirements in this subpart if you own or operate miscellaneous organic chemical manufacturing process units (MCPU) that are located at, or are part of, a major source of hazardous air pollutants (HAP) emissions as defined in section 112(a) of the Clean Air Act (CAA).
- (b) An MCPU includes equipment necessary to operate a miscellaneous organic chemical manufacturing process, as defined in § 63.2550, that satisfies all of the conditions specified in paragraphs (b)(1) through (3) of this section. An MCPU also includes any assigned storage tanks and transfer racks; equipment in open systems that is used to convey or store water having the same concentration and flow characteristics as wastewater; and components such as pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, and instrumentation systems that are used to manufacture any material or family of materials described in paragraphs (b)(1)(i) through (v) of this section.
 - (1) The MCPU produces material or family of materials that is described in paragraph (b)(1)(i), (ii), (iii), (iv), or (v) of this section.
 - (i) An organic chemical(s) classified using the 1987 version of SIC code 282, 283, 284, 285, 286, 287, 289, or 386, except as provided in paragraph (c)(5) of this section.
 - (ii) An organic chemical(s) classified using the 1997 version of NAICS code 325, except as provided in paragraph (c)(5) of this section.
 - (iii) Quaternary ammonium compounds and ammonium sulfate produced with caprolactam.
 - (iv) Hydrazine.
 - (v) Organic solvents classified in any of the SIC or NAICS codes listed in paragraph (b)(1)(i) or (ii) of this section that are recovered using nondedicated solvent recovery operations.
 - (2) The MCPU processes, uses, or generates any of the organic HAP listed in section 112(b) of the CAA or hydrogen halide and halogen HAP, as defined in § 63.2550.

- (3) The MCPU is not an affected source or part of an affected source under another subpart of this part 63, except for process vents from batch operations within a chemical manufacturing process unit (CMPU), as identified in § 63.100(j)(4). For this situation, the MCPU is the same as the CMPU as defined in § 63.100, and you are subject only to the requirements for batch process vents in this subpart.
- (c) The requirements in this subpart do not apply to the operations specified in paragraphs (c)(1) through (7) of this section.
- (1) Research and development facilities, as defined in section 112(c)(7) of the CAA.
- (2) The manufacture of ammonium sulfate as a by-product, if the slurry entering the by-product manufacturing process contains 50 parts per million by weight (ppmw) HAP or less or 10 ppmw benzene or less. You must retain information, data, and analysis to document the HAP concentration in the entering slurry in order to claim this exemption.
- (3) The affiliated operations located at an affected source under subparts GG (National Emission Standards for Aerospace Manufacturing and Rework Facilities), KK (National Emission Standards for the Printing and Publishing Industry), JJJJ (NESHAP: Paper and Other Web Coating), MMMM (NESHAP: Surface Coating of Miscellaneous Metal Parts and Products), and SSSS (NESHAP: Surface Coating of Metal Coil) of this part. Affiliated operations include, but are not limited to, mixing or dissolving of coating ingredients; coating mixing for viscosity adjustment, color tint or additive blending, or pH adjustment; cleaning of coating lines and coating line parts; handling and storage of coatings and solvent; and conveyance and treatment of wastewater.
- (4) Fabricating operations (such as spinning or compressing a solid polymer into its end use); compounding operations (in which blending, melting, and resolidification of a solid polymer product occur for the purpose of incorporating additives, colorants, or stabilizers); and extrusion and drawing operations (converting an already produced solid polymer into a different shape by melting or mixing the polymer and then forcing it or pulling it through an orifice to create an extruded product). An operation is not exempt if it involves processing with HAP solvent or if an intended purpose of the operation is to remove residual HAP monomer.
- (5) Production activities described using the 1997 version of NAICS codes 325131, 325181, 325188 (except the requirements do apply to hydrazine), 325314, 325991 (except the requirements do apply to reformulating plastics resins from recycled plastics products), and 325992 (except the requirements do apply to photographic chemicals).
- (6) Tall oil recovery systems.
- (7) Carbon monoxide production.
- (d) If the predominant use of a transfer rack loading arm or storage tank (including storage tanks in series) is associated with a miscellaneous organic chemical manufacturing process, and the loading arm or storage tank is not part of an affected source under a subpart of this part 63, then you must assign the loading arm or storage tank to the MCPU for that miscellaneous organic chemical manufacturing process. If the predominant use cannot be determined, then you may assign the loading arm or storage tank to any MCPU that shares it and is subject to this subpart. If the use varies from year to year, then you must base the determination on the utilization that occurred during the year preceding November 10, 2003 or, if the loading arm or storage tank was not in operation during that year, you must base the use on the expected use for the first 5-year period after startup. You must include the determination in the

notification of compliance status report specified in § 63.2520(d). You must redetermine the primary use at least once every 5 years, or any time you implement emissions averaging or pollution prevention after the compliance date.

- (e) For nondedicated equipment used to create at least one MCPU, you may elect to develop process unit groups (PUG), determine the primary product of each PUG, and comply with the requirements of the subpart in 40 CFR part 63 that applies to that primary product as specified in § 63.2535(l).

[68 FR 63888, Nov. 10, 2003, as amended at 71 FR 40331, July 14, 2006; 85 FR 49132, Aug. 12, 2020]

§ 63.2440 What parts of my plant does this subpart cover?

- (a) This subpart applies to each miscellaneous organic chemical manufacturing affected source.
- (b) The miscellaneous organic chemical manufacturing affected source is the facilitywide collection of MCPU and heat exchange systems, wastewater, and waste management units that are associated with manufacturing materials described in § 63.2435(b)(1).
- (c) A new affected source is described by either paragraph (c)(1) or (2) of this section.
 - (1) Each affected source defined in paragraph (b) of this section for which you commenced construction or reconstruction after April 4, 2002, and you meet the applicability criteria at the time you commenced construction or reconstruction.
 - (2) Each dedicated MCPU that has the potential to emit 10 tons per year (tpy) of any one HAP or 25 tpy of combined HAP, and you commenced construction or reconstruction of the MCPU after April 4, 2002. For the purposes of this paragraph, an MCPU is an affected source in the definition of the term "reconstruction" in § 63.2.
- (d) An MCPU that is also a CMPU under § 63.100 is reconstructed for the purposes of this subpart if, and only if, the CMPU meets the requirements for reconstruction in § 63.100(l)(2).

COMPLIANCE DATES

§ 63.2445 When do I have to comply with this subpart?

- (a) Except as specified in paragraphs (g) through (i) of this section, if you have a new affected source, you must comply with this subpart according to the requirements in paragraphs (a)(1) and (2) of this section.
 - (1) If you startup your new affected source before November 10, 2003, then you must comply with the requirements for new sources in this subpart no later than November 10, 2003.
 - (2) If you startup your new affected source after November 10, 2003, then you must comply with the requirements for new sources in this subpart upon startup of your affected source.
- (b) Except as specified in paragraphs (g) through (i) of this section, if you have an existing source on November 10, 2003, you must comply with the requirements for existing sources in this subpart no later than May 10, 2008.
- (c) You must meet the notification requirements in § 63.2515 according to the dates specified in that section and in subpart A of this part 63. Some of the notifications must be submitted before you are required to comply with the emission limits, operating limits, and work practice standards in this subpart.

- (d) If you have a Group 2 emission point that becomes a Group 1 emission point after the compliance date for your affected source, you must comply with the Group 1 requirements beginning on the date the switch occurs. An initial compliance demonstration as specified in this subpart must be conducted within 150 days after the switch occurs.
- (e) If, after the compliance date for your affected source, hydrogen halide and halogen HAP emissions from process vents in a process increase to more than 1,000 lb/yr, or HAP metals emissions from a process at a new affected source increase to more than 150 lb/yr, you must comply with the applicable emission limits specified in Table 3 to this subpart and the associated compliance requirements beginning on the date the emissions exceed the applicable threshold. An initial compliance demonstration as specified in this subpart must be conducted within 150 days after the switch occurs.
- (f) If you have a small control device for process vent or transfer rack emissions that becomes a large control device, as defined in § 63.2550(i), you must comply with monitoring and associated recordkeeping and reporting requirements for large control devices beginning on the date the switch occurs. An initial compliance demonstration as specified in this subpart must be conducted within 150 days after the switch occurs.
- (g) All affected sources that commenced construction or reconstruction on or before December 17, 2019, must be in compliance with the requirements listed in paragraphs (g)(1) through (7) of this section upon initial startup or on August 12, 2023, whichever is later. All affected sources that commenced construction or reconstruction after December 17, 2019, must be in compliance with the requirements listed in paragraphs (g)(1) through (7) of this section upon initial startup, or on August 12, 2020 whichever is later.
 - (1) The general requirements specified in §§ 63.2450(a)(2), (e)(4) through (7), (g)(6) and (7), (i)(3), (j)(5)(ii), (j)(6), (k)(1)(ii), (k)(7) and (8), (t), and (u), 63.2520(d)(3) and (e)(11) through (13), 63.2525(m) through (o), and 63.2535(m).
 - (2) For process vents, the requirements specified in §§ 63.2450(v), 63.2520(e)(14), and 63.2525(p).
 - (3) For storage tank degassing, the requirements specified in § 63.2470(f).
 - (4) For equipment leaks and pressure relief devices, the requirements specified in §§ 63.2480(e) and (f), 63.2520(d)(4) and (e)(14), and 63.2525(q).
 - (5) For wastewater streams and liquid streams in open systems within an MCPU, the requirements specified in § 63.2485(i)(2)(iii), (n)(2)(vii), (p), and (q).
 - (6) For heat exchange systems, the requirements specified in §§ 63.2490(d), 63.2520(e)(16), and 63.2525(r).
 - (7) The other notification, reports, and records requirements specified in §§ 63.2500(g), 63.2520(e)(5)(ii)(D) and (e)(5)(iii)(M) and (N), and 63.2525(l) and (u).
- (h) All affected sources that commenced construction or reconstruction on or before December 17, 2019, must be in compliance with the requirements for pumps in light liquid service in § 63.2480(b)(6) and (c)(10) upon initial startup or on August 12, 2021, whichever is later. All affected sources that commenced construction or reconstruction after December 17, 2019, must be in compliance with the requirements for pumps in light liquid service in § 63.2480(b)(6) and (c)(10) upon initial startup, or on August 12, 2020, whichever is later.

- (i) All affected sources that commenced construction or reconstruction on or before December 17, 2019, must be in compliance with the ethylene oxide requirements in §§ 63.2450(h) and (r), 63.2470(b) and (c)(4), 63.2492, 63.2493, 63.2520(d)(5) and (e)(17), and 63.2525(s) and Table 1 to this subpart, item 5, Table 2 to this subpart, item 3, Table 4 to this subpart, item 3, and Table 6 to this subpart, item 3, upon initial startup or on August 12, 2022, whichever is later. All affected sources that commenced construction or reconstruction after December 17, 2019, must be in compliance with the ethylene oxide requirements listed in §§ 63.2450(h) and (r), 63.2470(b) and (c)(4), 63.2492, 63.2493, 63.2520(d)(5) and (e)(17), and 63.2525(s) and Table 1 to this subpart, item 5, Table 2 to this subpart, item 3, Table 4 to this subpart, item 3, and Table 6 to this subpart, item 3, upon initial startup, or on August 12, 2020, whichever is later.

[68 FR 63888, Nov. 10, 2003, as amended at 71 FR 10442, Mar. 1, 2006; 71 FR 40332, July 14, 2006; 85 FR 49132, Aug. 12, 2020]

EMISSION LIMITS, WORK PRACTICE STANDARDS, AND COMPLIANCE REQUIREMENTS

§ 63.2450 What are my general requirements for complying with this subpart?

- (a) **General.** You must comply with paragraphs (a)(1) and (2) of this section.
 - (1) Except as specified in paragraph (a)(2) of this section, you must be in compliance with the emission limits and work practice standards in Tables 1 through 7 to this subpart at all times, except during periods of startup, shutdown, and malfunction (SSM), and you must meet the requirements specified in §§ 63.2455 through 63.2490 (or the alternative means of compliance in § 63.2495, § 63.2500, or § 63.2505), except as specified in paragraphs (b) through (s) of this section. You must meet the notification, reporting, and recordkeeping requirements specified in §§ 63.2515, 63.2520, and 63.2525.
 - (2) Beginning no later than the compliance dates specified in § 63.2445(g), paragraph (a)(1) of this section no longer applies. Instead, you must be in compliance with the emission limits and work practice standards in Tables 1 through 7 to this subpart at all times, and you must meet the requirements specified in §§ 63.2455 through 63.2490 (or the alternative means of compliance in § 63.2495, § 63.2500, or § 63.2505), except as specified in paragraphs (b) through (v) of this section. You must meet the notification, reporting, and recordkeeping requirements specified in §§ 63.2515, 63.2520, and 63.2525.
- (b) **Determine halogenated vent streams.** You must determine if an emission stream is a halogenated vent stream, as defined in § 63.2550, by calculating the mass emission rate of halogen atoms in accordance with § 63.115(d)(2)(v). Alternatively, you may elect to designate the emission stream as halogenated.
- (c) **Requirements for combined emission streams.** When organic HAP emissions from different emission types (e.g., continuous process vents, batch process vents, storage tanks, transfer operations, and waste management units) are combined, you must comply with the requirements of either paragraph (c)(1) or (2) of this section.
 - (1) Comply with the applicable requirements of this subpart for each kind of organic HAP emissions in the stream (e.g., the requirements of table 1 to this subpart for continuous process vents and the requirements of table 4 to this subpart for emissions from storage tanks).
 - (2) Determine the applicable requirements based on the hierarchy presented in paragraphs (c)(2)(i) through (vi) of this section. For a combined stream, the applicable requirements are specified in the highest-listed paragraph in the hierarchy that applies to any of the individual streams that make up

the combined stream. For example, if a combined stream consists of emissions from Group 1 batch process vents and any other type of emission stream, then you must comply with the requirements in paragraph (c)(2)(i) of this section for the combined stream; compliance with the requirements in paragraph (c)(2)(i) of this section constitutes compliance for the other emission streams in the combined stream. Two exceptions are that you must comply with the requirements in Table 3 to this subpart and § 63.2465 for all process vents with hydrogen halide and halogen HAP emissions, and recordkeeping requirements for Group 2 applicability or compliance are still required (e.g., the requirement in § 63.2525(e)(3) and (4) to track the number of batches produced and calculate rolling annual emissions for processes with Group 2 batch process vents).

- (i) The requirements of table 2 to this subpart and § 63.2460 for Group 1 batch process vents, including applicable monitoring, recordkeeping, and reporting.
- (ii) The requirements of table 1 to this subpart and § 63.2455 for continuous process vents that are routed to a control device, as defined in § 63.981, including applicable monitoring, recordkeeping, and reporting.
- (iii) The requirements of table 5 to this subpart and § 63.2475 for transfer operations, including applicable monitoring, recordkeeping, and reporting.
- (iv) The requirements of table 7 to this subpart and § 63.2485 for emissions from waste management units that are used to manage and treat Group 1 wastewater streams and residuals from Group 1 wastewater streams, including applicable monitoring, recordkeeping, and reporting.
- (v) The requirements of table 4 to this subpart and § 63.2470 for control of emissions from storage tanks, including applicable monitoring, recordkeeping, and reporting.
- (vi) The requirements of table 1 to this subpart and § 63.2455 for continuous process vents after a recovery device including applicable monitoring, recordkeeping, and reporting.

(d) [Reserved]

(e) ***Requirements for control devices.***

- (1) Except when complying with § 63.2485 or paragraph (e)(7) of this section, if you reduce organic HAP emissions by venting emissions through a closed-vent system to any combination of control devices (except a flare) or recovery devices, you must meet the requirements of paragraph (e)(4) of this section, and the requirements of § 63.982(c) and the requirements referenced therein.
- (2) Except as specified in paragraph (e)(5) of this section or except when complying with § 63.2485, if you reduce organic HAP emissions by venting emissions through a closed-vent system to a flare, you must meet the requirements of paragraph (e)(4) of this section, and the requirements of § 63.982(b) and the requirements referenced therein.
- (3) Except as specified in paragraphs (e)(3)(i) and (ii) of this section, if you use a halogen reduction device to reduce hydrogen halide and halogen HAP emissions from halogenated vent streams, you must meet the requirements of paragraph (e)(4) of this section, and the requirements of § 63.994 and the requirements referenced therein. If you use a halogen reduction device before a combustion device, you must determine the halogen atom emission rate prior to the combustion device according to the procedures in § 63.115(d)(2)(v).

- (i) Beginning on and after October 13, 2020, performance test reports must be submitted according to the procedures in § 63.2520(f).
 - (ii) If you use a halogen reduction device other than a scrubber, then you must submit procedures for establishing monitoring parameters to the Administrator as part of your precompliance report as specified in § 63.2520(c)(8).
- (4) Beginning no later than the compliance dates specified in § 63.2445(g), the referenced provisions specified in paragraphs (e)(4)(i) through (xvi) of this section do not apply when demonstrating compliance with subpart SS of this part.
- (i) The phrase “Except for equipment needed for safety purposes such as pressure relief devices, low leg drains, high point bleeds, analyzer vents, and open-ended valves or lines” in § 63.983(a)(3) of subpart SS.
 - (ii) The second sentence of § 63.983(a)(5) of subpart SS.
 - (iii) The phrase “except during periods of start-up, shutdown and malfunction as specified in the referencing subpart” in § 63.984(a) of subpart SS.
 - (iv) The phrase “except during periods of start-up, shutdown, and malfunction as specified in the referencing subpart” in § 63.985(a) of subpart SS.
 - (v) The phrase “other than start-ups, shutdowns, or malfunctions” in § 63.994(c)(1)(ii)(D) of subpart SS.
 - (vi) Section 63.996(c)(2)(ii) of subpart SS.
 - (vii) The last sentence of § 63.997(e)(1)(i) of subpart SS.
 - (viii) Section 63.998(b)(2)(iii) of subpart SS.
 - (ix) The phrase “other than start-ups, shutdowns or malfunctions” in § 63.998(b)(5)(i)(A) of subpart SS.
 - (x) The phrase “other than a start-up, shutdown, or malfunction” from § 63.998(b)(5)(i)(B)(3) of subpart SS.
 - (xi) The phrase “other than start-ups, shutdowns or malfunctions” in § 63.998(b)(5)(i)(C) of subpart SS.
 - (xii) The phrase “other than a start-up, shutdown, or malfunction” from § 63.998(b)(5)(ii)(C) of subpart SS.
 - (xiii) The phrase “except as provided in paragraphs (b)(6)(i)(A) and (B) of this section” in § 63.998(b)(6)(i) of subpart SS.
 - (xiv) The second sentence of § 63.998(b)(6)(ii) of subpart SS.
 - (xv) Section 63.998(c)(1)(ii)(D), (E), (F), and (G) of subpart SS.
 - (xvi) Section 63.998(d)(3) of subpart SS.
- (5) For any flare that is used to reduce organic HAP emissions from an MCPU, you may elect to comply with the requirements in this paragraph in lieu of the requirements of § 63.982(b) and the requirements referenced therein. However, beginning no later than the compliance dates specified in § 63.2445(g), paragraphs (e)(2) and (f) of this section no longer apply to flares that control ethylene

oxide emissions from affected sources in ethylene oxide service as defined in § 63.2550 and flares used to control emissions from MCPUs that produce olefins or polyolefins. Instead, if you reduce organic HAP emissions by venting emissions through a closed-vent system to a steam-assisted, air-assisted, non-assisted, or pressure-assisted multi-point flare that controls ethylene oxide emissions from affected sources in ethylene oxide service as defined in § 63.2550 or is used to control emissions from an MCPU that produces olefins or polyolefins, then you must meet the applicable requirements for flares as specified in §§ 63.670 and 63.671 of subpart CC, including the provisions in Tables 12 and 13 to subpart CC of this part, except as specified in paragraphs (e)(5)(i) through (xiii) of this section. This requirement in this paragraph (e)(5) also applies to any flare using fuel gas from a fuel gas system, of which 50 percent or more of the fuel gas is derived from an MCPU that has processes and/or equipment in ethylene oxide service or that produces olefins or polyolefins, as determined on an annual average basis. For purposes of compliance with this paragraph (e)(5), the following terms are defined in § 63.641 of subpart CC: Assist air, assist steam, center steam, combustion zone, combustion zone gas, flare, flare purge gas, flare supplemental gas, flare sweep gas, flare vent gas, lower steam, net heating value, perimeter assist air, pilot gas, premix assist air, total steam, and upper steam. Also, for purposes of compliance with this paragraph (e)(5), "MCPUs that produces olefins or polyolefins" includes only those MCPUs that manufacture ethylene, propylene, polyethylene, and/or polypropylene as a product. By-products and impurities as defined in § 63.101, as well as wastes and trace contaminants, are not considered products.

- (i) When determining compliance with the pilot flame requirements specified in § 63.670(b) and (g), substitute "pilot flame or flare flame" for each occurrence of "pilot flame."
- (ii) When determining compliance with the flare tip velocity and combustion zone operating limits specified in § 63.670(d) and (e), the requirement effectively applies starting with the 15-minute block that includes a full 15 minutes of the flaring event. You are required to demonstrate compliance with the velocity and NHVcz requirements starting with the block that contains the fifteenth minute of a flaring event. You are not required to demonstrate compliance for the previous 15-minute block in which the event started and contained only a fraction of flow.
- (iii) Instead of complying with paragraph (o)(2)(i) of § 63.670 of subpart CC, you must develop and implement the flare management plan no later than the compliance dates specified in § 63.2445(g).
- (iv) Instead of complying with paragraph (o)(2)(iii) of § 63.670 of subpart CC, if required to develop a flare management plan and submit it to the Administrator, then you must also submit all versions of the plan in portable document format (PDF) to the EPA following the procedure specified in § 63.9(k), except any medium submitted through mail must be sent to the attention of the Miscellaneous Organic Chemical Manufacturing Sector Lead.
- (v) Section 63.670(o)(3)(ii) of subpart CC and all references to § 63.670(o)(3)(ii) of subpart CC do not apply. Instead, the owner or operator must comply with the maximum flare tip velocity operating limit at all times.
- (vi) Substitute "MCPU" for each occurrence of "petroleum refinery."
- (vii) Each occurrence of "refinery" does not apply.
- (viii) If a pressure-assisted multi-point flare is used as a control device, then you must meet the following conditions:

- (A) You are not required to comply with the flare tip velocity requirements in paragraph (d) and (k) of § 63.670 of subpart CC;
- (B) You must comply with the NHVcz requirements in paragraph (e)(2) of § 63.670 of subpart CC;
- (C) You must determine the 15-minute block average NHVvg using only the direct calculation method specified in in paragraph (l)(5)(ii) of § 63.670 of subpart CC;
- (D) Instead of complying with paragraph (b) and (g) of § 63.670 of subpart CC, if a pressure-assisted multi-point flare uses cross-lighting on a stage of burners rather than having an individual pilot flame on each burner, then you must operate each stage of the pressure-assisted multi-point flare with a flame present at all times when regulated material is routed to that stage of burners. Each stage of burners that cross-lights in the pressure-assisted multi-point flare must have at least two pilots with at least one continuously lit and capable of igniting all regulated material that is routed to that stage of burners. Each 15-minute block during which there is at least one minute where no pilot flame is present on a stage of burners when regulated material is routed to the flare is a deviation of the standard. Deviations in different 15-minute blocks from the same event are considered separate deviations. The pilot flame(s) on each stage of burners that use cross-lighting must be continuously monitored by a thermocouple or any other equivalent device used to detect the presence of a flame;
- (E) Unless you choose to conduct a cross-light performance demonstration as specified in this paragraph (e)(5)(viii)(E), you must ensure that if a stage of burners on the flare uses cross-lighting, that the distance between any two burners in series on that stage is no more than 6 feet when measured from the center of one burner to the next burner. A distance greater than 6 feet between any two burners in series may be used provided you conduct a performance demonstration that confirms the pressure-assisted multi-point flare will cross-light a minimum of three burners and the spacing between the burners and location of the pilot flame must be representative of the projected installation. The compliance demonstration must be approved by the permitting authority and a copy of this approval must be maintained onsite. The compliance demonstration report must include: A protocol describing the test methodology used, associated test method QA/QC parameters, the waste gas composition and NHVcz of the gas tested, the velocity of the waste gas tested, the pressure-assisted multi-point flare burner tip pressure, the time, length, and duration of the test, records of whether a successful cross-light was observed over all of the burners and the length of time it took for the burners to cross-light, records of maintaining a stable flame after a successful cross-light and the duration for which this was observed, records of any smoking events during the cross-light, waste gas temperature, meteorological conditions (e.g., ambient temperature, barometric pressure, wind speed and direction, and relative humidity), and whether there were any observed flare flameouts; and
- (F) You must install and operate pressure monitor(s) on the main flare header, as well as a valve position indicator monitoring system for each staging valve to ensure that the flare operates within the proper range of conditions as specified by the manufacturer. The pressure monitor must meet the requirements in Table 13 to subpart CC of this part.

- (G) If a pressure-assisted multi-point flare is operating under the requirements of an approved alternative means of emission limitations, you must either continue to comply with the terms of the alternative means of emission limitations or comply with the provisions in paragraphs (e)(5)(viii)(A) through (F) of this section.
- (ix) If you choose to determine compositional analysis for net heating value with a continuous process mass spectrometer, then you must comply with the requirements specified in paragraphs (e)(5)(ix)(A) through (G) of this section.
 - (A) You must meet the requirements in § 63.671(e)(2). You may augment the minimum list of calibration gas components found in § 63.671(e)(2) with compounds found during a pre-survey or known to be in the gas through process knowledge.
 - (B) Calibration gas cylinders must be certified to an accuracy of 2 percent and traceable to National Institute of Standards and Technology (NIST) standards.
 - (C) For unknown gas components that have similar analytical mass fragments to calibration compounds, you may report the unknowns as an increase in the overlapped calibration gas compound. For unknown compounds that produce mass fragments that do not overlap calibration compounds, you may use the response factor for the nearest molecular weight hydrocarbon in the calibration mix to quantify the unknown component's NHVvg.
 - (D) You may use the response factor for n-pentane to quantify any unknown components detected with a higher molecular weight than n-pentane.
 - (E) You must perform an initial calibration to identify mass fragment overlap and response factors for the target compounds.
 - (F) You must meet applicable requirements in Performance Specification 9 of 40 CFR part 60, appendix B, for continuous monitoring system acceptance including, but not limited to, performing an initial multi-point calibration check at three concentrations following the procedure in Section 10.1 and performing the periodic calibration requirements listed for gas chromatographs in Table 13 to subpart CC of this part, for the process mass spectrometer. You may use the alternative sampling line temperature allowed under Net Heating Value by Gas Chromatograph in Table 13 to subpart CC of this part.
 - (G) The average instrument calibration error (CE) for each calibration compound at any calibration concentration must not differ by more than 10 percent from the certified cylinder gas value. The CE for each component in the calibration blend must be calculated using Equation 1 to this paragraph (e)(5)(ix)(G).

$$CE = \frac{C_m - C_a}{C_a} \times 100 \text{ (Eq. 1)}$$

Where:

C_m = Average instrument response (ppm).

C_a = Certified cylinder gas value (ppm).

- (x) If you use a gas chromatograph or mass spectrometer for compositional analysis for net heating value, then you may choose to use the CE of NHV_{measured} versus the cylinder tag value NHV_a as the measure of agreement for daily calibration and quarterly audits in lieu of determining the compound-specific CE. The CE for NHV at any calibration level must not differ by more than 10 percent from the certified cylinder gas value. The CE for must be calculated using Equation 2 to this paragraph (e)(5)(x).

$$CE = \frac{NHV_{\text{measured}} - NHV_a}{NHV_a} \times 100 \text{ (Eq. 2)}$$

Where:

NHV_{measured} = Average instrument response (Btu/scf).

NHV_a = Certified cylinder gas value (Btu/scf).

- (xi) Instead of complying with paragraph (q) of § 63.670 of subpart CC, you must comply with the reporting requirements specified in § 63.2520(d)(3) and (e)(11).
- (xii) Instead of complying with paragraph (p) of § 63.670 of subpart CC, you must keep the flare monitoring records specified in § 63.2525(m).
- (xiii) You may elect to comply with the alternative means of emissions limitation requirements specified in paragraph (r) of § 63.670 of subpart CC in lieu of the requirements in paragraphs (d) through (f) of § 63.670 of subpart CC, as applicable. However, instead of complying with paragraph (r)(3)(iii) of § 63.670 of subpart CC, you must also submit the alternative means of emissions limitation request to the following address: U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Sector Policies and Programs Division, U.S. EPA Mailroom (C404-02), Attention: Miscellaneous Organic Chemical Manufacturing Sector Lead, 4930 Old Page Rd., Durham, NC 27703.
- (6) Beginning no later than the compliance dates specified in § 63.2445(g), the use of a bypass line at any time on a closed vent system to divert emissions subject to the requirements in Tables 1 through 7 to this subpart to the atmosphere or to a control device not meeting the requirements specified in Tables 1 through 7 to this subpart is an emissions standards deviation. You must also comply with the requirements specified in paragraphs (e)(6)(i) through (v) of this section, as applicable:
- (i) If you are subject to the bypass monitoring requirements of § 63.148(f) of subpart G, then you must continue to comply with the requirements in § 63.148(f) of subpart G and the recordkeeping and reporting requirements in §§ 63.148(j)(2) and (3) of subpart G, and § 63.148(i)(3) of subpart G, in addition to the applicable requirements specified in § 63.2485(q), the recordkeeping requirements specified in § 63.2525(n), and the reporting requirements specified in § 63.2520(e)(12).
- (ii) If you are subject to the bypass monitoring requirements of § 63.172(j) of subpart H, then you must continue to comply with the requirements in § 63.172(j) of subpart H and the recordkeeping and reporting requirements in § 63.118(a)(3) and (4), and (f)(3) and (4) of subpart G, in addition to the applicable requirements specified in §§ 63.2480(f) and 63.2485(q), the recordkeeping requirements specified in § 63.2525(n), and the reporting requirements specified in § 63.2520(e)(12).

- (iii) If you are subject to the bypass monitoring requirements of § 63.983(a)(3) of subpart SS, then you must continue to comply with the requirements in § 63.983(a)(3) of subpart SS and the recordkeeping and reporting requirements in §§ 63.998(d)(1)(ii) and 63.999(c)(2) of subpart SS, in addition to the requirements specified in § 63.2450(e)(4), the recordkeeping requirements specified in § 63.2525(n), and the reporting requirements specified in § 63.2520(e)(12).
- (iv) If you are subject to the bypass monitoring requirements of § 65.143(a)(3) of this chapter, then you must continue to comply with the requirements in § 65.143(a)(3) and the recordkeeping and reporting requirements in §§ 65.163(a)(1) and 65.166(b) of this chapter; in addition to the applicable requirements specified in § 63.2480(f), the recordkeeping requirements specified in § 63.2525(n), and the reporting requirements specified in § 63.2520(e)(12).
- (v) For purposes of compliance with this paragraph (e)(6), §§ 63.148(f)(3) of subpart G, and 63.172(j)(3) of subpart H, the phrase "Except for equipment needed for safety purposes such as pressure relief devices, low leg drains, high point bleeds, analyzer vents, and open-ended valves or lines" in § 63.983(a)(3) of subpart SS, and the phrase "Except for pressure relief devices needed for safety purposes, low leg drains, high point bleeds, analyzer vents, and open-ended valves or lines" in § 65.143(a)(3) of this chapter do not apply; instead, the exemptions specified in paragraphs (e)(6)(v)(A) and (B) of this section apply.
 - (A) Except for pressure relief devices subject to § 63.2480(e)(4), equipment such as low leg drains and equipment subject to the requirements specified in § 63.2480 are not subject to this paragraph (e)(6).
 - (B) Open-ended valves or lines that use a cap, blind flange, plug, or second valve and follow the requirements specified in 40 CFR 60.482-6(a)(2), (b), and (c) or follow requirements codified in another regulation that are the same as 40 CFR 60.482-6(a)(2), (b), and (c) are not subject to this paragraph (e)(6).
- (7) Beginning no later than the compliance dates specified in § 63.2445(g), if you reduce organic HAP emissions by venting emissions through a closed-vent system to an adsorber(s) that cannot be regenerated or a regenerative adsorber(s) that is regenerated offsite, then you must comply with paragraphs (e)(4) and (6) of this section, § 63.2470(c)(3), §§ 63.2520(d)(6) and (e)(13), § 63.2525(o), the requirements in § 63.983 including the requirements referenced therein, and you must install a system of two or more adsorber units in series and comply with the requirements specified in paragraphs (e)(7)(i) through (iii) of this section.
 - (i) Conduct an initial performance test or design evaluation of the adsorber and establish the breakthrough limit and adsorber bed life.
 - (ii) Monitor the HAP or total organic compound (TOC) concentration through a sample port at the outlet of the first adsorber bed in series according to the schedule in paragraph (e)(7)(iii)(B) of this section. You must measure the concentration of HAP or TOC using either a portable analyzer, in accordance with Method 21 of 40 CFR part 60, appendix A-7, using methane, propane, isobutylene, or the primary HAP being controlled as the calibration gas or Method 25A of 40 CFR part 60, appendix A-7, using methane, propane, or the primary HAP being controlled as the calibration gas.
 - (iii) Comply with paragraph (e)(7)(iii)(A) of this section, and comply with the monitoring frequency according to paragraph (e)(7)(iii)(B) of this section.

- (A) The first adsorber in series must be replaced immediately when breakthrough, as defined in § 63.2550(i), is detected between the first and second adsorber. The original second adsorber (or a fresh canister) will become the new first adsorber and a fresh adsorber will become the second adsorber. For purposes of this paragraph (e)(7)(iii)(A), “immediately” means within 8 hours of the detection of a breakthrough for adsorbers of 55 gallons or less, and within 24 hours of the detection of a breakthrough for adsorbers greater than 55 gallons. You must monitor at the outlet of the first adsorber within 3 days of replacement to confirm it is performing properly.
 - (B) Based on the adsorber bed life established according to paragraph (e)(7)(i) of this section and the date the adsorbent was last replaced, conduct monitoring to detect breakthrough at least monthly if the adsorbent has more than 2 months of life remaining, at least weekly if the adsorbent has between 2 months and 2 weeks of life remaining, and at least daily if the adsorbent has 2 weeks or less of life remaining.
- (f) **Requirements for flare compliance assessments.** Except as specified in paragraph (e)(5) of this section, you must comply with paragraphs (f)(1) and (2) of this section.
- (1) As part of a flare compliance assessment required in § 63.987(b), you have the option of demonstrating compliance with the requirements of § 63.11(b) by complying with the requirements in either § 63.11(b)(6)(i) or § 63.987(b)(3)(ii).
 - (2) If you elect to meet the requirements in § 63.11(b)(6)(i), you must keep flare compliance assessment records as specified in paragraphs (f)(2)(i) and (ii) of this section.
 - (i) Keep records as specified in § 63.998(a)(1)(i), except that a record of the heat content determination is not required.
 - (ii) Keep records of the flare diameter, hydrogen content, exit velocity, and maximum permitted velocity. Include these records in the flare compliance report required in § 63.999(a)(2).
- (g) **Requirements for performance tests.** The requirements specified in paragraphs (g)(1) through (7) of this section apply instead of or in addition to the requirements specified in subpart SS of this part.
- (1) Conduct gas molecular weight analysis using Method 3, 3A, or 3B in appendix A to part 60 of this chapter.
 - (2) Measure moisture content of the stack gas using Method 4 in appendix A to part 60 of this chapter.
 - (3) If the uncontrolled or inlet gas stream to the control device contains carbon disulfide, you must conduct emissions testing according to paragraph (g)(3)(i) or (ii) of this section.
 - (i) If you elect to comply with the percent reduction emission limits in tables 1 through 7 to this subpart, and carbon disulfide is the principal organic HAP component (*i.e.*, greater than 50 percent of the HAP in the stream by volume), then you must use Method 18, or Method 15 (40 CFR part 60, appendix A) to measure carbon disulfide at the inlet and outlet of the control device. Use the percent reduction in carbon disulfide as a surrogate for the percent reduction in total organic HAP emissions.
 - (ii) If you elect to comply with the outlet TOC concentration emission limits in Tables 1 through 7 to this subpart, and the uncontrolled or inlet gas stream to the control device contains greater than 10 percent (volume concentration) carbon disulfide, you must use Method 18 or Method 15 of 40 CFR part 60, appendix A, to separately determine the carbon disulfide concentration.

Calculate the total HAP or TOC emissions by totaling the carbon disulfide emissions measured using Method 18 or 15 of 40 CFR part 60, appendix A, and the other HAP emissions measured using Method 18 or 25A of 40 CFR part 60, appendix A.

- (4) As an alternative to using Method 18, Method 25/25A, or Method 26/26A of 40 CFR part 60, appendix A, to comply with any of the emission limits specified in tables 1 through 7 to this subpart, you may use Method 320 of 40 CFR part 60, appendix A. When using Method 320, you must follow the analyte spiking procedures of section 13 of Method 320, unless you demonstrate that the complete spiking procedure has been conducted at a similar source.
- (5) Section 63.997(c)(1) does not apply. For the purposes of this subpart, results of all initial compliance demonstrations must be included in the notification of compliance status report, which is due 150 days after the compliance date, as specified in § 63.2520(d)(1). If the initial compliance demonstration includes a performance test and the results are submitted electronically via CEDRI in accordance with § 63.2520(f), the process unit(s) tested, the pollutant(s) tested, and the date that such performance test was conducted may be submitted in the notification of compliance status report in lieu of the performance test results. The performance test results must be submitted to CEDRI by the date the notification of compliance status report is submitted.
- (6) Beginning no later than the compliance dates specified in § 63.2445(g), in lieu of the requirements specified in § 63.7(e)(1) of subpart A you must conduct performance tests under such conditions as the Administrator specifies based on representative performance of the affected source for the period being tested. Representative conditions exclude periods of startup and shutdown. You may not conduct performance tests during periods of malfunction. You must record the process information that is necessary to document operating conditions during the test and include in such record an explanation to support that such conditions represent normal operation. Upon request, you must make available to the Administrator such records as may be necessary to determine the conditions of performance tests.
- (7) Comply with the requirements in § 63.2450(e)(4), as applicable.
- (h) **Design evaluation.** To determine the percent reduction of a small control device that is used to comply with an emission limit specified in Table 1, 2, 3, or 5 to this subpart, you may elect to conduct a design evaluation as specified in § 63.1257(a)(1) instead of a performance test as specified in subpart SS of this part. You must establish the value(s) and basis for the operating limits as part of the design evaluation. For continuous process vents, the design evaluation must be conducted at maximum representative operating conditions for the process, unless the Administrator specifies or approves alternate operating conditions. For transfer racks, the design evaluation must demonstrate that the control device achieves the required control efficiency during the reasonably expected maximum transfer loading rate. Beginning no later than the compliance dates specified in § 63.2445(i), this paragraph (h) does not apply to process vents in ethylene oxide service as defined in § 63.2550.
- (i) **Outlet concentration correction for combustion devices.** Except as specified in paragraph (i)(3) of this section, when § 63.997(e)(2)(iii)(C) requires you to correct the measured concentration at the outlet of a combustion device to 3-percent oxygen if you add supplemental combustion air, the requirements in either paragraph (i)(1) or (2) of this section apply for the purposes of this subpart.
 - (1) You must correct the concentration in the gas stream at the outlet of the combustion device to 3 percent oxygen if you add supplemental gases, as defined in § 63.2550, to the vent stream, or;

- (2) You must correct the measured concentration for supplemental gases using Equation 1 in § 63.2460(c)(6); you may use process knowledge and representative operating data to determine the fraction of the total flow due to supplemental gas.
- (3) Beginning no later than the compliance dates specified in § 63.2445(g), paragraphs (i)(1) and (2) of this section no longer apply. Instead, when § 63.997(e)(2)(iii)(C) requires you to correct the measured concentration at the outlet of a combustion device to 3-percent oxygen if you add supplemental combustion air, you must follow the procedures in § 63.997(e)(2)(iii)(C) to perform the concentration correction, except you may also use Method 3A of 40 CFR part 60, appendix A-2, to determine the oxygen concentration.
- (j) **Continuous emissions monitoring systems.** Each continuous emissions monitoring system (CEMS) must be installed, operated, and maintained according to the requirements in § 63.8 of subpart A and paragraphs (j)(1) through (6) of this section.
 - (1) Each CEMS must be installed, operated, and maintained according to the applicable Performance Specification of 40 CFR part 60, appendix B, and the applicable Quality Assurance Procedures of 40 CFR part 60, appendix F, and according to paragraph (j)(2) of this section, except as specified in paragraph (j)(1)(i) of this section. For any CEMS meeting Performance Specification 8 of 40 CFR part 60, appendix B, you must also comply with procedure 1 of 40 CFR part 60, appendix F. Locate the sampling probe or other interface at a measurement location such that you obtain representative measurements of emissions from the regulated source. For CEMS installed after August 12, 2020, conduct a performance evaluation of each CEMS within 180 days of installation of the monitoring system.
 - (i) If you wish to use a CEMS other than a Fourier Transform Infrared Spectroscopy (FTIR) meeting the requirements of Performance Specification 15 of 40 CFR part 60, appendix B, to measure hydrogen halide, other than hydrogen chloride, and halogen HAP or CEMS meeting the requirements of Performance Specification 18 of 40 CFR part 60, appendix B, to measure hydrogen chloride before we promulgate a Performance Specification for such CEMS, you must prepare a monitoring plan and submit it for approval in accordance with the procedures specified in § 63.8 of subpart A.
 - (ii) [Reserved]
 - (2) You must determine the calibration gases and reporting units for TOC CEMS in accordance with paragraph (j)(2)(i), (ii), or (iii) of this section.
 - (i) For CEMS meeting Performance Specification 9 or 15 requirements, determine the target analyte(s) for calibration using either process knowledge of the control device inlet stream or the screening procedures of Method 18 on the control device inlet stream.
 - (ii) For CEMS meeting Performance Specification 8 used to monitor performance of a combustion device, calibrate the instrument on the predominant organic HAP and report the results as carbon (C1), and use Method 25A or any approved alternative as the reference method for the relative accuracy tests.
 - (iii) For CEMS meeting Performance Specification 8 of 40 CFR part 60, appendix B, used to monitor performance of a noncombustion device, determine the predominant organic HAP using either process knowledge or the screening procedures of Method 18 of 40 CFR part 60, appendix A-6, on the control device inlet stream, calibrate the monitor on the predominant organic HAP, and

report the results as C_1 . Use Method 18 of 40 CFR part 60, appendix A-6, Method 320 of appendix A to this part, ASTM D6420-18 (incorporated by reference, see § 63.14), or any approved alternative as the reference method for the relative accuracy tests, and report the results as C_1 .

- (3) You must conduct a performance evaluation of each CEMS according to the requirements in § 63.8 of subpart A and according to the applicable Performance Specification of 40 CFR part 60, appendix B, except that the schedule in § 63.8(e)(4) of subpart A does not apply, and before October 13, 2020, the results of the performance evaluation must be included in the notification of compliance status report. Unless otherwise specified in this subpart, beginning on and after October 13, 2020, the results of the performance evaluation must be submitted in accordance with § 63.2520(g).
- (4) The CEMS data must be reduced to operating day or operating block averages computed using valid data consistent with the data availability requirements specified in § 63.999(c)(6)(i)(B) through (D), except monitoring data also are sufficient to constitute a valid hour of data if measured values are available for at least two of the 15-minute periods during an hour when calibration, quality assurance, or maintenance activities are being performed. An operating block is a period of time from the beginning to end of batch operations within a process. Operating block averages may be used only for batch process vent data. In computing operating day or operating block averages to determine compliance with this subpart, you must exclude monitoring data recorded during CEMS breakdowns, out-of-control periods, repairs, maintenance periods, calibration checks, or other quality assurance activities. Out-of-control periods are as specified in § 63.8(c)(7) of subpart A.
- (5) If you add supplemental gases, you must comply with paragraphs (j)(5)(i) and (ii) of this section.
 - (i) Except as specified in paragraph (j)(5)(ii) of this section, correct the measured concentrations in accordance with paragraph (i) of this section and § 63.2460(c)(6).
 - (ii) Beginning no later than the compliance dates specified in § 63.2445(g), you must use Performance Specification 3 of 40 CFR part 60, appendix B, to certify your oxygen CEMS, and you must comply with procedure 1 of 40 CFR part 60, appendix F. Use Method 3A of 40 CFR part 60, appendix A-2, as the reference method when conducting a relative accuracy test audit.
- (6) Beginning no later than the compliance dates specified in § 63.2445(g), in lieu of the requirements specified in § 63.8(d)(3) of subpart A you must keep the written procedures required by § 63.8(d)(2) of subpart A on record for the life of the affected source or until the affected source is no longer subject to the provisions of this part, to be made available for inspection, upon request, by the Administrator. If the performance evaluation plan is revised, you must keep previous (*i.e.*, superseded) versions of the performance evaluation plan on record to be made available for inspection, upon request, by the Administrator, for a period of 5 years after each revision to the plan. The program of corrective action should be included in the plan required under § 63.8(d)(2) of subpart A. In addition to the information required in § 63.8(d)(2) of subpart A, your written procedures for CEMS must include the information in paragraphs (j)(6)(i) through (vi) of this section:
 - (i) Description of CEMS installation location.
 - (ii) Description of the monitoring equipment, including the manufacturer and model number for all monitoring equipment components and the span of the analyzer.
 - (iii) Routine quality control and assurance procedures.

- (iv) Conditions that would trigger a CEMS performance evaluation, which must include, at a minimum, a newly installed CEMS; a process change that is expected to affect the performance of the CEMS; and the Administrator's request for a performance evaluation under section 114 of the Clean Air Act.
 - (v) Ongoing operation and maintenance procedures in accordance with the general requirements of § 63.8(c)(1) and (3), (c)(4)(ii), and (c)(7) and (8) of subpart A;
 - (vi) Ongoing recordkeeping and reporting procedures in accordance with the general requirements of § 63.10(c) and (e)(1) of subpart A.
- (k) **Continuous parameter monitoring.** The provisions in paragraphs (k)(1) through (8) of this section apply in addition to the requirements for continuous parameter monitoring system (CPMS) in subpart SS of this part.
- (1) You must comply with paragraphs (k)(1)(i) and (ii) of this section.
 - (i) Except as specified in paragraph (k)(1)(ii) of this section, record the results of each calibration check and all maintenance performed on the CPMS as specified in § 63.998(c)(1)(ii)(A).
 - (ii) Beginning no later than the compliance dates specified in § 63.2445(g), paragraph (k)(1)(i) of this section no longer applies. Instead, you must record the results of each calibration check and all maintenance performed on the CPMS as specified in § 63.998(c)(1)(ii)(A), except you must record all maintenance, not just preventative maintenance.
 - (2) When subpart SS of this part 63 uses the term "a range" or "operating range" of a monitored parameter, it means an "operating limit" for a monitored parameter for the purposes of this subpart.
 - (3) As an alternative to continuously measuring and recording pH as specified in §§ 63.994(c)(1)(i) and 63.998(a)(2)(ii)(D), you may elect to continuously monitor and record the caustic strength of the effluent. For halogen scrubbers used to control only batch process vents you may elect to monitor and record either the pH or the caustic strength of the scrubber effluent at least once per day.
 - (4) As an alternative to the inlet and outlet temperature monitoring requirements for catalytic incinerators as specified in § 63.988(c)(2) and the related recordkeeping requirements specified in § 63.998(a)(2)(ii)(B)(2) and (c)(2)(ii), you may elect to comply with the requirements specified in paragraphs (k)(4)(i) through (iv) of this section.
 - (i) Monitor and record the inlet temperature as specified in subpart SS of this part 63.
 - (ii) Check the activity level of the catalyst at least every 12 months and take any necessary corrective action, such as replacing the catalyst to ensure that the catalyst is performing as designed.
 - (iii) Maintain records of the annual checks of catalyst activity levels and the subsequent corrective actions.
 - (iv) Recording the downstream temperature and temperature difference across the catalyst bed as specified in § 63.998(a)(2)(ii)(B)(2) and (c)(2)(ii) is not required.
 - (5) For absorbers that control organic compounds and use water as the scrubbing fluid, you must conduct monitoring and recordkeeping as specified in paragraphs (k)(5)(i) through (iii) of this section instead of the monitoring and recordkeeping requirements specified in §§ 63.990(c)(1), 63.993(c)(1), and 63.998(a)(2)(ii)(C).

- (i) You must use a flow meter capable of providing a continuous record of the absorber influent liquid flow.
 - (ii) You must determine gas stream flow using one of the procedures specified in § 63.994(c)(1)(ii)(A) through (D).
 - (iii) You must record the absorber liquid-to-gas ratio averaged over the time period of any performance test.
- (6) For a control device with total inlet HAP emissions less than 1 tpy, you must establish an operating limit(s) for a parameter(s) that you will measure and record at least once per averaging period (i.e., daily or block) to verify that the control device is operating properly. You may elect to measure the same parameter(s) that is required for control devices that control inlet HAP emissions equal to or greater than 1 tpy. If the parameter will not be measured continuously, you must request approval of your proposed procedure in the precompliance report. You must identify the operating limit(s) and the measurement frequency, and you must provide rationale to support how these measurements demonstrate the control device is operating properly.
- (7) Beginning no later than the compliance dates specified in § 63.2445(g), the manufacturer's specifications or your written procedures must include a schedule for calibrations, preventative maintenance procedures, a schedule for preventative maintenance, and corrective actions to be taken if a calibration fails. If a CPMS calibration fails, the CPMS is considered to be inoperative until you take corrective action and the system passes calibration. You must record the nature and cause of instances when the CPMS is inoperative and the corrective action taken.
- (8) You must comply with the requirements in paragraph (e)(4) of this section, as applicable.
- (l) **Startup, shutdown, and malfunction.** Sections 63.152(f)(7)(ii) through (iv) and 63.998(b)(2)(iii) and (b)(6)(i)(A), which apply to the exclusion of monitoring data collected during periods of SSM from daily averages, do not apply for the purposes of this subpart.
- (m) **Reporting.**
- (1) When §§ 63.2455 through 63.2490 reference other subparts in this part 63 that use the term "periodic report," it means "compliance report" for the purposes of this subpart. The compliance report must include the information specified in § 63.2520(e), as well as the information specified in referenced subparts.
 - (2) When there are conflicts between this subpart and referenced subparts for the due dates of reports required by this subpart, reports must be submitted according to the due dates presented in this subpart.
 - (3) Excused excursions, as defined in subparts G and SS of this part 63, are not allowed.
- (n) [Reserved]
- (o) You may not use a flare to control halogenated vent streams or hydrogen halide and halogen HAP emissions.
- (p) **Original safety device requirements.** Except as specified in paragraph (t) of this section, opening a safety device, as defined in § 63.2550, is allowed at any time conditions require it to avoid unsafe conditions.

- (q) If an emission stream contains energetics or organic peroxides that, for safety reasons, cannot meet an applicable emission limit specified in Tables 1 through 7 to this subpart, then you must submit documentation in your precompliance report explaining why an undue safety hazard would be created if the air emission controls were installed, and you must describe the procedures that you will implement to minimize HAP emissions from these vent streams.
- (r) **Surge control vessels and bottoms receivers.** For each surge control vessel or bottoms receiver that meets the capacity and vapor pressure thresholds for a Group 1 storage tank, you must meet emission limits and work practice standards specified in Table 4 to this subpart. Beginning no later than the compliance dates specified in § 63.2445(i), for each surge control vessel and bottoms receiver in ethylene oxide service as defined in § 63.2550, you must also meet the applicable process vent requirements specified in §§ 63.2492 and 63.2493(a) through (c).
- (s) For the purposes of determining Group status for continuous process vents, batch process vents, and storage tanks in §§ 63.2455, 63.2460, and 63.2470, hydrazine is to be considered an organic HAP.
- (t) **New safety device requirements.** Beginning no later than the compliance dates specified in § 63.2445(g), paragraph (p) of this section no longer applies. Instead, you must comply with the requirements specified in § 63.2480(e).
- (u) **General duty.** Beginning no later than the compliance dates specified in § 63.2445(g), at all times, you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by the applicable standard have been achieved. Determination of whether a source is operating in compliance with operation and maintenance requirements will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.
- (v) **Maintenance vents.** Beginning no later than the compliance dates specified in § 63.2445(g), you may designate a process vent as a maintenance vent if the vent is only used as a result of startup, shutdown, maintenance, or inspection of equipment where equipment is emptied, depressurized, degassed, or placed into service. You must comply with the applicable requirements in paragraphs (v)(1) through (3) of this section for each maintenance vent. Any vent designated as a maintenance vent is only subject to the maintenance vent provisions in this paragraph (v) and the associated recordkeeping and reporting requirements in §§ 63.2525(p) and 63.2520(e)(14), respectively. You do not need to designate a maintenance vent as a Group 1 or Group 2 process vent nor identify maintenance vents in a Notification of Compliance Status report.
 - (1) Prior to venting to the atmosphere, remove process liquids from the equipment as much as practical and depressurize the equipment to either: A flare meeting the requirements of paragraph (e)(2) or (5) of this section, as applicable, or a non-flare control device meeting the requirements in paragraph (e)(4) of this section and the requirements specified in § 63.982(c)(2) of subpart SS until one of the following conditions, as applicable, is met.
 - (i) The vapor in the equipment served by the maintenance vent has a concentration less than 10 percent of its lower explosive limit (LEL) and has an outlet concentration less than or equal to 20 ppmv hydrogen halide and halogen HAP.

- (ii) If there is no ability to measure the concentration of the vapor in the equipment based on the design of the equipment, the pressure in the equipment served by the maintenance vent is reduced to 5 pounds per square inch gauge (psig) or less. Upon opening the maintenance vent, active purging of the equipment cannot be used until the concentration of the vapors in the maintenance vent (or inside the equipment if the maintenance is a hatch or similar type of opening) is less than 10 percent of its LEL.
 - (iii) The equipment served by the maintenance vent contains less than 50 pounds of total volatile organic compounds (VOC).
 - (iv) If, after applying best practices to isolate and purge equipment served by a maintenance vent, none of the applicable criterion in paragraphs (v)(1)(i) through (iii) of this section can be met prior to installing or removing a blind flange or similar equipment blind, then the pressure in the equipment served by the maintenance vent must be reduced to 2 psig or less before installing or removing the equipment blind. During installation or removal of the equipment blind, active purging of the equipment may be used provided the equipment pressure at the location where purge gas is introduced remains at 2 psig or less.
- (2) Except for maintenance vents complying with the alternative in paragraph (v)(1)(iii) of this section, you must determine the concentration of the vapor or, if applicable, equipment pressure using process instrumentation or portable measurement devices and follow procedures for calibration and maintenance according to manufacturer's specifications.
- (3) For maintenance vents complying with the alternative in paragraph (v)(1)(iii) of this section, you must determine mass of VOC in the equipment served by the maintenance vent based on the equipment size and contents after considering any contents drained or purged from the equipment. Equipment size may be determined from equipment design specifications. Equipment contents may be determined using process knowledge.

[68 FR 63888, Nov. 10, 2003, as amended at 70 FR 38559, July 1, 2005; 71 FR 40332, July 14, 2006; 85 FR 49133, Aug. 12, 2020; 89 FR 23868, Apr. 4, 2024]

§ 63.2455 What requirements must I meet for continuous process vents?

- (a) You must meet each emission limit in Table 1 to this subpart that applies to your continuous process vents, and you must meet each applicable requirement specified in paragraphs (b) through (c) of this section and §§ 63.2492 and 63.2493(a) through (c).
- (b) For each continuous process vent, you must either designate the vent as a Group 1 continuous process vent or determine the total resource effectiveness (TRE) index value as specified in § 63.115(d), except as specified in paragraphs (b)(1) through (3) of this section.
 - (1) You are not required to determine the Group status or the TRE index value for any continuous process vent that is combined with Group 1 batch process vents before a control device or recovery device because the requirements of § 63.2450(c)(2)(i) apply to the combined stream.
 - (2) When a TRE index value of 4.0 is referred to in § 63.115(d), TRE index values of 5.0 for existing affected sources and 8.0 for new and reconstructed affected sources apply for the purposes of this subpart.
 - (3) When § 63.115(d) refers to "emission reductions specified in § 63.113(a)," the reductions specified in Table 1 to this subpart apply for the purposes of this subpart.

- (c) If you use a recovery device to maintain the TRE above a specified threshold, you must meet the requirements of § 63.982(e) and the requirements referenced therein, except as specified in § 63.2450 and paragraph (c)(1) of this section.
- (1) When § 63.993 uses the phrase “the TRE index value is between the level specified in a referencing subpart and 4.0,” the phrase “the TRE index value is >1.9 but ≤5.0” applies for an existing affected source, and the phrase “the TRE index value is >5.0 but ≤8.0” applies for a new and reconstructed affected source, for the purposes of this subpart.
- (2) [Reserved]

[68 FR 63888, Nov. 10, 2003, as amended at 85 FR 49139, Aug. 12, 2020]

§ 63.2460 What requirements must I meet for batch process vents?

- (a) **General.** You must meet each emission limit in Table 2 to this subpart that applies to you, and you must meet each applicable requirement specified in paragraphs (b) and (c) of this section and §§ 63.2492 and 63.2493(a) through (c).
- (b) **Group status.** If a process has batch process vents, as defined in § 63.2550, you must determine the group status of the batch process vents by determining and summing the uncontrolled organic HAP emissions from each of the batch process vents within the process using the procedures specified in § 63.1257(d)(2)(i) and (ii), except as specified in paragraphs (b)(1) through (7) of this section.
 - (1) To calculate emissions caused by the heating of a vessel without a process condenser to a temperature lower than the boiling point, you must use the procedures in § 63.1257(d)(2)(i)(C)(3).
 - (2) To calculate emissions from depressurization of a vessel without a process condenser, you must use the procedures in § 63.1257(d)(2)(i)(D)(10).
 - (3) To calculate emissions from vacuum systems for the purposes of this subpart, the receiving vessel is part of the vacuum system, and terms used in Equation 33 to 40 CFR part 63, subpart GGG, are defined as follows:

P_{system} = absolute pressure of the receiving vessel;

P_i = partial pressure of the HAP determined at the exit temperature and exit pressure conditions of the condenser or at the conditions of the dedicated receiver;

P_j = partial pressure of condensables (including HAP) determined at the exit temperature and exit pressure conditions of the condenser or at the conditions of the dedicated receiver;

MW_{HAP} = molecular weight of the HAP determined at the exit temperature and exit pressure conditions of the condenser or at the conditions of the dedicated receiver.

- (4) To calculate uncontrolled emissions when a vessel is equipped with a process condenser, you must use the procedures in § 63.1257(d)(3)(i)(B), except as specified in paragraphs (b)(4)(i) through (vii) of this section.
 - (i) You must determine the flowrate of gas (or volume of gas), partial pressures of condensables, temperature (T), and HAP molecular weight (MW_{HAP}) at the exit temperature and exit pressure conditions of the condenser or at the conditions of the dedicated receiver.

- (ii) You must assume that all of the components contained in the condenser exit vent stream are in equilibrium with the same components in the exit condensate stream (except for noncondensables).
 - (iii) You must perform a material balance for each component.
 - (iv) For the emissions from gas evolution, the term for time, t , must be used in Equation 12 to 40 CFR part 63, subpart GGG.
 - (v) Emissions from empty vessel purging shall be calculated using Equation 36 to 40 CFR part 63, subpart GGG and the exit temperature and exit pressure conditions of the condenser or the conditions of the dedicated receiver.
 - (vi) You must conduct an engineering assessment as specified in § 63.1257(d)(2)(ii) for each emission episode that is not due to vapor displacement, purging, heating, depressurization, vacuum operations, gas evolution, air drying, or empty vessel purging. The requirements of paragraphs (b)(3) through (4) of this section shall apply.
 - (vii) You may elect to conduct an engineering assessment if you can demonstrate to the Administrator that the methods in § 63.1257(d)(3)(i)(B) are not appropriate.
- (5) You may elect to designate the batch process vents within a process as Group 1 and not calculate uncontrolled emissions if you comply with one of the situations in paragraph (b)(5)(i), (ii), or (iii) of this section.
- (i) If you comply with the alternative standard specified in § 63.2505.
 - (ii) If all Group 1 batch process vents within a process are controlled; you conduct the performance test under hypothetical worst case conditions, as defined in § 63.1257(b)(8)(i)(B); and the emission profile is based on capture and control system limitations as specified in § 63.1257(b)(8)(ii)(C).
 - (iii) If you comply with an emission limit using a flare that meets the requirements specified in § 63.987 or § 63.2450(e)(5), as applicable.
- (6) You may change from Group 2 to Group 1 in accordance with either paragraph (b)(6)(i) or (ii) of this section. Before October 13, 2020, you must comply with the requirements of this section and submit the test report. Beginning on and after October 13, 2020, you must comply with the requirements of this section and submit the performance test report for the demonstration required in § 63.1257(b)(8) in accordance with § 63.2520(f).
- (i) You may switch at any time after operating as Group 2 for at least 1 year so that you can show compliance with the 10,000 pounds per year (lb/yr) threshold for Group 2 batch process vents for at least 365 days before the switch. You may elect to start keeping records of emissions from Group 2 batch process vents before the compliance date. Report a switch based on this provision in your next compliance report in accordance with § 63.2520(e)(10)(i).
 - (ii) If the conditions in paragraph (b)(6)(i) of this section are not applicable, you must provide a 60-day advance notice in accordance with § 63.2520(e)(10)(ii) before switching.
- (7) As an alternative to determining the uncontrolled organic HAP emissions as specified in § 63.1257(d)(2)(i) and (ii), you may elect to demonstrate that non-reactive organic HAP are the only HAP used in the process and non-reactive HAP usage in the process is less than 10,000 lb/yr. You must provide data and supporting rationale in your notification of compliance status report

explaining why the non-reactive organic HAP usage will be less than 10,000 lb/yr. You must keep records of the non-reactive organic HAP usage as specified in § 63.2525(e)(2) and include information in compliance reports as specified in § 63.2520(e)(5)(iv).

(c) Exceptions to the requirements in subparts SS and WW of this part 63 are specified in paragraphs (c)(1) through (9) of this section.

(1) **Process condensers.** Process condensers, as defined in § 63.2550(i), are not considered to be control devices for batch process vents. You must determine whether a condenser is a control device for a batch process vent or a process condenser from which the uncontrolled HAP emissions are evaluated as part of the initial compliance demonstration for each MCPU and report the results with supporting rationale in your notification of compliance status report.

(2) **Initial compliance.**

(i) To demonstrate initial compliance with a percent reduction emission limit in Table 2 to this subpart, you must compare the sums of the controlled and uncontrolled emissions for the applicable Group 1 batch process vents within the process, and show that the specified reduction is met. This requirement does not apply if you comply with the emission limits of Table 2 to this subpart by using a flare that meets the requirements of § 63.987 or 63.2450(e)(5), as applicable.

(ii) When you conduct a performance test or design evaluation for a non-flare control device used to control emissions from batch process vents, you must establish emission profiles and conduct the test under worst-case conditions according to § 63.1257(b)(8) instead of under normal operating conditions as specified in § 63.7(e)(1) of subpart A or the conditions as specified in § 63.2450(g)(6). The requirements in § 63.997(e)(1)(i) and (iii) also do not apply for performance tests conducted to determine compliance with the emission limits for batch process vents. For purposes of this subpart, references in § 63.997(b)(1) to “methods specified in § 63.997(e)” include the methods specified in § 63.1257(b)(8).

(iii) As an alternative to conducting a performance test or design evaluation to demonstrate initial compliance with a percent reduction requirement for a condenser, you may determine controlled emissions using the procedures specified in § 63.1257(d)(3)(i)(B) and paragraphs (b)(3) through (4) of this section.

(iv) When § 63.1257(d)(3)(i)(B)(7) specifies that condenser-controlled emissions from an air dryer must be calculated using Equation 11 of 40 CFR part 63, subpart GGG, with “V equal to the air flow rate,” it means “V equal to the dryer outlet gas flow rate,” for the purposes of this subpart. Alternatively, you may use Equation 12 of 40 CFR part 63, subpart GGG, with V equal to the dryer inlet air flow rate. Account for time as appropriate in either equation.

(v) If a process condenser is used for boiling operations in which HAP (not as an impurity) is heated to the boiling point, you must demonstrate that it is properly operated according to the procedures specified in § 63.1257(d)(2)(i)(C)(4)(ii) and (d)(3)(iii)(B), and the demonstration must occur only during the boiling operation. The reference in § 63.1257(d)(3)(iii)(B) to the alternative standard in § 63.1254(c) means § 63.2505 for the purposes of this subpart. As an alternative to measuring the exhaust gas temperature, as required by § 63.1257(d)(3)(iii)(B), you may elect to measure the liquid temperature in the receiver.

(vi) You must conduct a subsequent performance test or compliance demonstration equivalent to an initial compliance demonstration within 180 days of a change in the worst-case conditions.

- (3) **Establishing operating limits.** You must establish operating limits under the conditions required for your initial compliance demonstration, except you may elect to establish operating limit(s) for conditions other than those under which a performance test was conducted as specified in paragraph (c)(3)(i) of this section and, if applicable, paragraph (c)(3)(ii) of this section.
- (i) The operating limits may be based on the results of the performance test and supplementary information such as engineering assessments and manufacturer's recommendations. These limits may be established for conditions as unique as individual emission episodes for a batch process. You must provide rationale in the precompliance report for the specific level for each operating limit, including any data and calculations used to develop the limit and a description of why the limit indicates proper operation of the control device. The procedures provided in this paragraph (c)(3)(i) have not been approved by the Administrator and determination of the operating limit using these procedures is subject to review and approval by the Administrator.
- (ii) If you elect to establish separate monitoring levels for different emission episodes within a batch process, you must maintain records in your daily schedule or log of processes indicating each point at which you change from one operating limit to another, even if the duration of the monitoring for an operating limit is less than 15 minutes. You must maintain a daily schedule or log of processes according to § 63.2525(c).
- (4) **Averaging periods.** As an alternative to the requirement for daily averages in § 63.998(b)(3), you may determine averages for operating blocks. An operating block is a period of time that is equal to the time from the beginning to end of batch process operations within a process.
- (5) [Reserved]
- (6) **Outlet concentration correction for supplemental gases.** If you use a control device other than a combustion device to comply with a TOC, organic HAP, or hydrogen halide and halogen HAP outlet concentration emission limit for batch process vents, you must correct the actual concentration for supplemental gases using Equation 1 to this paragraph (e)(6); you may use process knowledge and representative operating data to determine the fraction of the total flow due to supplemental gas.

$$C_a = C_m \left(\frac{Q_s + Q_a}{Q_a} \right) \quad (\text{Eq. 1})$$

Where:

C_a = corrected outlet TOC, organic HAP, or hydrogen halide and halogen HAP concentration, dry basis, ppmv;

C_m = actual TOC, organic HAP, or hydrogen halide and halogen HAP concentration measured at control device outlet, dry basis, ppmv;

Q_a = total volumetric flowrate of all gas streams vented to the control device, except supplemental gases;

Q_s = total volumetric flowrate of supplemental gases.

- (7) If flow to a control device could be intermittent, you must install, calibrate, and operate a flow indicator at the inlet or outlet of the control device to identify periods of no flow. Periods of no flow may not be used in daily or block averages, and it may not be used in fulfilling a minimum data availability requirement.
- (8) **Terminology.** When the term “storage vessel” is used in subpart WW of this part 63, the term “process tank,” as defined in § 63.2550(i), applies for the purposes of this section.
- (9) **Requirements for a biofilter.** If you use a biofilter to meet either the 95-percent reduction requirement or outlet concentration requirement specified in Table 2 to this subpart, you must meet the requirements specified in paragraphs (c)(9)(i) through (iv) of this section.
 - (i) **Operational requirements.** The biofilter must be operated at all times when emissions are vented to it.
 - (ii) **Performance tests.** To demonstrate initial compliance, you must conduct a performance test according to the procedures in §§ 63.2450(g) and 63.997 of subpart SS, and paragraphs (c)(9)(ii)(A) through (D) of this section. The design evaluation option for small control devices is not applicable if you use a biofilter.
 - (A) Keep up-to-date, readily accessible continuous records of either the biofilter bed temperature averaged over the full period of the performance test or the outlet total organic HAP or TOC concentration averaged over the full period of the performance test. Include these data in your notification of compliance status report as required by § 63.999(b)(3)(ii).
 - (B) Record either the percent reduction of total organic HAP achieved by the biofilter determined as specified in § 63.997(e)(2)(iv) or the concentration of TOC or total organic HAP determined as specified in § 63.997(e)(2)(iii) at the outlet of the biofilter, as applicable.
 - (C) If you monitor the biofilter bed temperature, you may elect to use multiple thermocouples in representative locations throughout the biofilter bed and calculate the average biofilter bed temperature across these thermocouples prior to reducing the temperature data to 15 minute (or shorter) averages for purposes of establishing operating limits for the biofilter. If you use multiple thermocouples, include your rationale for their site selection in your notification of compliance status report.
 - (D) Before October 13, 2020, submit a performance test report as specified in § 63.999(a)(2)(i) and (ii) and include the records from paragraph (c)(9)(ii)(B) of this section. Beginning on and after October 13, 2020, you must submit a performance test report as specified in § 63.2520(f).
 - (iii) **Monitoring requirements.** Use either a biofilter bed temperature monitoring device (or multiple devices) capable of providing a continuous record or an organic monitoring device capable of providing a continuous record. Comply with the requirements in § 63.2450(e)(4), the general requirements for monitoring in § 63.996, and keep records of temperature or other parameter monitoring results as specified in § 63.998(b) and (c), as applicable. If you monitor temperature, the operating temperature range must be based on only the temperatures measured during the performance test; these data may not be supplemented by engineering assessments or manufacturer's recommendations as otherwise allowed in § 63.999(b)(3)(ii)(A). If you establish the operating range (minimum and maximum temperatures)

using data from previous performance tests in accordance with § 63.996(c)(6), replacement of the biofilter media with the same type of media is not considered a process change under § 63.997(b)(1). You may expand your biofilter bed temperature operating range by conducting a repeat performance test that demonstrates compliance with the 95-percent reduction requirement or outlet concentration limit, as applicable.

- (iv) **Repeat performance tests.** You must conduct a repeat performance test using the applicable methods specified in §§ 63.2450(g) and 63.997 within 2 years following the previous performance test and within 150 days after each replacement of any portion of the biofilter bed media with a different type of media or each replacement of more than 50 percent (by volume) of the biofilter bed media with the same type of media.

[68 FR 63888, Nov. 10, 2003, as amended at 70 FR 38559, July 1, 2005; 71 FR 40333, July 14, 2006; 85 FR 49139, Aug. 12, 2020; 89 FR 23868, Apr. 4, 2024]

§ 63.2465 What requirements must I meet for process vents that emit hydrogen halide and halogen HAP or HAP metals?

- (a) You must meet each emission limit in Table 3 to this subpart that applies to you, and you must meet each applicable requirement in paragraphs (b) through (d) of this section.
- (b) If any process vents within a process emit hydrogen halide and halogen HAP, you must determine and sum the uncontrolled hydrogen halide and halogen HAP emissions from each of the process vents within the process using the procedures specified in § 63.1257(d)(2)(i) and/or (ii), as appropriate. When § 63.1257(d)(2)(ii)(E) requires documentation to be submitted in the precompliance report, it means the notification of compliance status report for the purposes of this paragraph.
- (c) If collective uncontrolled hydrogen halide and halogen HAP emissions from the process vents within a process are greater than or equal to 1,000 pounds per year (lb/yr), you must comply with the requirements in § 63.2450(e)(4) and the requirements of § 63.994 and the requirements referenced therein, except as specified in paragraphs (c)(1) through (3) of this section.
- (1) When § 63.994(b)(1) requires a performance test, you may elect to conduct a design evaluation in accordance with § 63.1257(a)(1).
- (2) When § 63.994(b)(1) refers to “a combustion device followed by a halogen scrubber or other halogen reduction device,” it means any combination of control devices used to meet the emission limits specified in Table 3 to this subpart.
- (3) Section 63.994(b)(2) does not apply for the purposes of this section.
- (d) To demonstrate compliance with the emission limit in Table 3 to this subpart for HAP metals at a new source, you must comply with paragraphs (d)(1) through (3) of this section.
- (1) Determine the mass emission rate of HAP metals based on process knowledge, engineering assessment, or test data.
- (2) Conduct an initial performance test of each control device that is used to comply with the emission limit for HAP metals specified in Table 3 to this subpart. Conduct the performance test according to the procedures in §§ 63.2450(g) and 63.997. Use Method 29 of 40 CFR part 60, appendix A, to determine the HAP metals at the inlet and outlet of each control device, or use Method 5 of 40 CFR part 60, appendix A, to determine the total particulate matter (PM) at the inlet and outlet of each

control device. You may use ASTM D6784-02 (Reapproved 2008) (incorporated by reference, see § 63.14) as an alternative to Method 29 (portion for mercury only) as a method for measuring mercury concentrations of 0.5 to 100 micrograms per standard cubic meter. You have demonstrated initial compliance if the overall reduction of either HAP metals or total PM from the process is greater than or equal to 97 percent by weight.

- (3) Comply with the monitoring requirements specified in § 63.1366(b)(1)(xi) for each fabric filter used to control HAP metals.

[68 FR 63888, Nov. 10, 2003, as amended at 71 FR 40334, July 14, 2006; 85 FR 49140, Aug. 12, 2020]

§ 63.2470 What requirements must I meet for storage tanks?

- (a) **General.** You must meet each emission limit in Table 4 to this subpart that applies to your storage tanks, and except as specified in paragraph (b) of this section, you must also meet each applicable requirement specified in paragraphs (c) through (f) of this section and §§ 63.2492 and 63.2493(a) through (c).
- (b) **General for storage tanks in ethylene oxide service.** On and after the compliance dates specified in § 63.2445(i), paragraphs (d) and (e) of this section do not apply to storage tanks in ethylene oxide service as defined in § 63.2550.
- (c) **Exceptions to subparts SS and WW of this part.**
 - (1) Except as specified in paragraph (c)(4)(ii) of this section, if you conduct a performance test or design evaluation for a control device used to control emissions only from storage tanks, you must establish operating limits, conduct monitoring, and keep records using the same procedures as required in subpart SS of this part for control devices used to reduce emissions from process vents instead of the procedures specified in §§ 63.985(c), 63.998(d)(2)(i), and 63.999(b)(2). You must also comply with the requirements in § 63.2450(e)(4), as applicable.
 - (2) Except as specified in paragraph (c)(4) of this section, when the term “storage vessel” is used in subparts SS and WW of this part, the term “storage tank,” as defined in § 63.2550 applies for the purposes of this subpart.
 - (3) For adsorbers that cannot be regenerated or regenerative adsorbers that are regenerated offsite, you must comply with the monitoring requirements in § 63.2450(e)(7) in lieu of § 63.995(c).
 - (4) Beginning no later than the compliance dates specified in § 63.2445(i), you must comply with paragraphs (c)(4)(i) and (ii) of this section.
 - (i) The exemptions for “vessels storing organic liquids that contain HAP only as impurities” and “pressure vessels designed to operate in excess of 204.9 kilopascals and without emissions to the atmosphere” listed in the definition of “storage tank” in § 63.2550 do not apply for storage tanks in ethylene oxide service.
 - (ii) For storage tanks in ethylene oxide service as defined in § 63.2550, you may not use a design evaluation to determine the percent reduction of any control device that is used to comply with an emission limit specified in Table 4 to this subpart.
- (d) **Planned routine maintenance.** The emission limits in Table 4 to this subpart for control devices used to control emissions from storage tanks do not apply during periods of planned routine maintenance. Periods of planned routine maintenance of each control device, during which the control device does not meet the emission limit specified in Table 4 to this subpart, must not exceed 240 hours per year (hr/yr).

You may submit an application to the Administrator requesting an extension of this time limit to a total of 360 hr/yr. The application must explain why the extension is needed, it must indicate that no material will be added to the storage tank between the time the 240-hr limit is exceeded and the control device is again operational, and it must be submitted at least 60 days before the 240-hr limit will be exceeded.

- (e) **Vapor balancing alternative.** As an alternative to the emission limits specified in Table 4 to this subpart, you may elect to implement vapor balancing in accordance with § 63.1253(f), except as specified in paragraphs (e)(1) through (3) of this section.
- (1) When § 63.1253(f)(6)(i) refers to a 90 percent reduction, 95 percent applies for the purposes of this subpart.
 - (2) To comply with § 63.1253(f)(6)(i), the owner or operator of an offsite cleaning or reloading facility must comply with §§ 63.2445 through 63.2550 instead of complying with § 63.1253(f)(7)(ii), except as specified in paragraph (e)(2)(i) or (ii) of this section.
 - (i) The reporting requirements in § 63.2520 do not apply to the owner or operator of the offsite cleaning or reloading facility.
 - (ii) As an alternative to complying with the monitoring, recordkeeping, and reporting provisions in §§ 63.2445 through 63.2550, the owner or operator of an offsite cleaning or reloading facility may comply as specified in § 63.2535(a)(2) with any other subpart of this part 63 which has monitoring, recordkeeping, and reporting provisions as specified in § 63.2535(a)(2).
 - (3) You may elect to set a pressure relief device to a value less than the 2.5 psig required in § 63.1253(f)(5) if you provide rationale in your notification of compliance status report explaining why the alternative value is sufficient to prevent breathing losses at all times.
 - (4) You may comply with the vapor balancing alternative in § 63.1253(f) when your storage tank is filled from a barge. All requirements for tank trucks and railcars specified in § 63.1253(f) also apply to barges, except as specified in § 63.2470(e)(4)(i).
 - (i) When § 63.1253(f)(2) refers to pressure testing certifications, the requirements in 40 CFR 61.304(f) apply for barges.
 - (ii) [Reserved]
- (f) **Storage tank degassing.** Beginning no later than the compliance dates specified in § 63.2445(g), for each storage tank subject to item 1 of Table 4 to this subpart, you must comply with paragraphs (f)(1) through (4) of this section during storage tank shutdown operations (*i.e.*, emptying and degassing of a storage tank) until the vapor space concentration in the storage tank is less than 10 percent of the LEL. You must determine the concentration using process instrumentation or portable measurement devices and follow procedures for calibration and maintenance according to manufacturer's specifications.
- (1) Remove liquids from the storage tank as much as practicable.
 - (2) Comply with one of the following:
 - (i) Reduce emissions of total organic HAP by venting emissions through a closed vent system to a flare.
 - (ii) Reduce emissions of total organic HAP by 95 weight-percent by venting emissions through a closed vent system to any combination of non-flare control devices.

- (iii) Reduce emissions of total organic HAP by routing emissions to a fuel gas system or process and meet the requirements specified in § 63.982(d) and the applicable requirements in § 63.2450(e)(4).
- (3) Maintain records necessary to demonstrate compliance with the requirements in § 63.2450(u) including, if appropriate, records of existing standard site procedures used to empty and degas (deinventory) equipment for safety purposes.
- (4) For floating roof storage tanks, the storage tank may be opened to set up equipment (e.g., making connections to a temporary control device) for the shutdown operations but must not be actively degassed during this time period.

[68 FR 63888, Nov. 10, 2003, as amended at 70 FR 38559, July 1, 2005; 71 FR 40335, July 14, 2006; 85 FR 49140, Aug. 12, 2020; 89 FR 23868, Apr. 4, 2024]

§ 63.2475 What requirements must I meet for transfer racks?

- (a) You must comply with each emission limit and work practice standard in Table 5 to this subpart that applies to your transfer racks, and you must meet each applicable requirement in paragraph (b) of this section.
- (b) When the term “high throughput transfer rack” is used in subpart SS of this part 63, the term “Group 1 transfer rack,” as defined in § 63.2550, applies for the purposes of this subpart.

[68 FR 63888, Nov. 10, 2003, as amended at 71 FR 40335, July 14, 2006; 85 FR 49141, Aug. 12, 2020]

§ 63.2480 What requirements must I meet for equipment leaks?

- (a) You must meet each requirement in table 6 to this subpart that applies to your equipment leaks, except as specified in paragraphs (b) through (f) of this section. For each light liquid pump, pressure relief device, and connector in ethylene oxide service as defined in § 63.2550(i), you must also meet the applicable requirements specified in §§ 63.2492 and 63.2493(d) and (e).
- (b) Except as specified in paragraphs (b)(6) and (7) of this section, if you comply with either subpart H or UU of this part, you may elect to comply with the provisions in paragraphs (b)(1) through (5) of this section as an alternative to the referenced provisions in subpart H or UU of this part.
 - (1) The requirements for pressure testing in § 63.178(b) or § 63.1036(b) may be applied to all processes, not just batch processes.
 - (2) For the purposes of this subpart, pressure testing for leaks in accordance with § 63.178(b) or § 63.1036(b) is not required after reconfiguration of an equipment train if flexible hose connections are the only disturbed equipment.
 - (3) For an existing source, you are not required to develop an initial list of identification numbers for connectors as would otherwise be required under § 63.1022(b)(1) or § 63.181(b)(1)(i).
 - (4) For connectors in gas/vapor and light liquid service at an existing source, you may elect to comply with the requirements in § 63.169 or § 63.1029 for connectors in heavy liquid service, including all associated recordkeeping and reporting requirements, rather than the requirements of § 63.174 or § 63.1027.

- (5) Except as specified in paragraph (b)(6) of this section, for pumps in light liquid service in an MCPU that has no continuous process vents and is part of an existing source, you may elect to consider the leak definition that defines a leak to be 10,000 parts per million (ppm) or greater as an alternative to the values specified in § 63.1026(b)(2)(i) through (iii) or § 63.163(b)(2).
 - (6) Beginning no later than the compliance dates specified in § 63.2445(h), paragraph (b)(5) of this section no longer applies.
 - (7) For each piece of equipment that is subject to Table 6 to this subpart and is also subject to periodic monitoring with EPA Method 21 of 40 CFR part 60, appendix A-7, and is added to an affected source after December 17, 2019, or replaces equipment at an affected source after December 17, 2019, you must initially monitor for leaks within 30 days after August 12, 2020, or initial startup of the equipment, whichever is later. Equipment that is designated as unsafe- or difficult-to-monitor is not subject to this paragraph (b)(7).
- (c) Except as specified in paragraphs (c)(10) and (11) of this section, if you comply with 40 CFR part 65, subpart F, you may elect to comply with the provisions in paragraphs (c)(1) through (9) of this section as an alternative to the referenced provisions in 40 CFR part 65, subpart F.
- (1) The requirements for pressure testing in § 65.117(b) may be applied to all processes, not just batch processes.
 - (2) For the purposes of this subpart, pressure testing for leaks in accordance with § 65.117(b) is not required after reconfiguration of an equipment train if flexible hose connections are the only disturbed equipment.
 - (3) For an existing source, you are not required to develop an initial list of identification numbers for connectors as would otherwise be required under § 65.103(b)(1).
 - (4) You may elect to comply with the monitoring and repair requirements specified in § 65.108(e)(3) as an alternative to the requirements specified in § 65.108(a) through (d) for any connectors at your affected source.
 - (5) Except as specified in paragraph (c)(10) of this section, for pumps in light liquid service in an MCPU that has no continuous process vents and is part of an existing source, you may elect to consider the leak definition that defines a leak to be 10,000 ppm or greater as an alternative to the values specified in § 65.107(b)(2)(i) through (iii) of this chapter.
 - (6) When 40 CFR part 65, subpart F refers to the implementation date specified in § 65.1(f), it means the compliance date specified in § 63.2445.
 - (7) When §§ 65.105(f) and 65.117(d)(3) refer to § 65.4, it means § 63.2525.
 - (8) When § 65.120(a) refers to § 65.5(d), it means § 63.2515.
 - (9) When § 65.120(b) refers to § 65.5(e), it means § 63.2520.
 - (10) Beginning no later than the compliance dates specified in § 63.2445(h), paragraph (c)(5) of this section no longer applies.
 - (11) For each piece of equipment that is subject to Table 6 to this subpart and is also subject to periodic monitoring with EPA Method 21 of 40 CFR part 60, appendix A-7, and is added to an affected source after December 17, 2019, or replaces equipment at an affected source after December 17, 2019, you

must initially monitor for leaks within 30 days after August 12, 2020, or initial startup of the equipment, whichever is later. Equipment that is designated as unsafe- or difficult-to-monitor is not subject to this paragraph (c)(11).

- (d) The provisions of this section do not apply to bench-scale processes, regardless of whether the processes are located at the same plant site as a process subject to the provisions of this subpart.
- (e) Beginning no later than the compliance dates specified in § 63.2445(g), except as specified in paragraph (e)(4) of this section, you must comply with the requirements specified in paragraphs (e)(1) and (2) of this section for pressure relief devices, such as relief valves or rupture disks, in organic HAP gas or vapor service instead of the pressure relief device requirements of § 63.1030 of subpart UU, § 63.165 of subpart H, or § 65.111 of this chapter. Except as specified in paragraphs (e)(4) and (5) of this section, you must also comply with the requirements specified in paragraphs (e)(3), (6), (7), and (8) of this section for all pressure relief devices in organic HAP service.
 - (1) **Operating requirements.** Except during a pressure release, operate each pressure relief device in organic HAP gas or vapor service with an instrument reading of less than 500 ppm above background as measured by the method in § 63.1023(b) of subpart UU, § 63.180(c) of subpart H, or § 65.104(b) of this chapter.
 - (2) **Pressure release requirements.** For pressure relief devices in organic HAP gas or vapor service, you must comply with the applicable requirements paragraphs (e)(2)(i) through (iii) of this section following a pressure release.
 - (i) If the pressure relief device does not consist of or include a rupture disk, conduct instrument monitoring, as specified in § 63.1023(b) of subpart UU, § 63.180(c) of subpart H, or § 65.104(b) of this chapter, no later than 5 calendar days after the pressure relief device returns to organic HAP gas or vapor service following a pressure release to verify that the pressure relief device is operating with an instrument reading of less than 500 ppm.
 - (ii) If the pressure relief device includes a rupture disk, either comply with the requirements in paragraph (e)(2)(i) of this section (and do not replace the rupture disk) or install a replacement disk as soon as practicable after a pressure release, but no later than 5 calendar days after the pressure release.
 - (iii) If the pressure relief device consists only of a rupture disk, install a replacement disk as soon as practicable after a pressure release, but no later than 5 calendar days after the pressure release. You must not initiate startup of the equipment served by the rupture disk until the rupture disc is replaced.
 - (3) **Pressure release management.** Except as specified in paragraphs (e)(4) and (5) of this section, you must comply with the requirements specified in paragraphs (e)(3)(i) through (v) of this section for all pressure relief devices in organic HAP service.
 - (i) You must equip each affected pressure relief device with a device(s) or use a monitoring system that is capable of:
 - (A) Identifying the pressure release;
 - (B) Recording the time and duration of each pressure release; and

- (C) Notifying operators immediately that a pressure release is occurring. The device or monitoring system must be either specific to the pressure relief device itself or must be associated with the process system or piping, sufficient to indicate a pressure release to the atmosphere. Examples of these types of devices and systems include, but are not limited to, a rupture disk indicator, magnetic sensor, motion detector on the pressure relief valve stem, flow monitor, or pressure monitor.
- (ii) You must apply at least three redundant prevention measures to each affected pressure relief device and document these measures. Examples of prevention measures include:
 - (A) Flow, temperature, liquid level and pressure indicators with deadman switches, monitors, or automatic actuators. Independent, non-duplicative systems within this category count as separate redundant prevention measures.
 - (B) Documented routine inspection and maintenance programs and/or operator training (maintenance programs and operator training may count as only one redundant prevention measure).
 - (C) Inherently safer designs or safety instrumentation systems.
 - (D) Deluge systems.
 - (E) Staged relief system where the initial pressure relief device (with lower set release pressure) discharges to a flare or other closed vent system and control device.
- (iii) If any affected pressure relief device releases to atmosphere as a result of a pressure release event, you must perform root cause analysis and corrective action analysis according to the requirement in paragraph (e)(6) of this section and implement corrective actions according to the requirements in paragraph (e)(7) of this section. You must also calculate the quantity of organic HAP released during each pressure release event and report this quantity as required in § 63.2520(e)(15). Calculations may be based on data from the pressure relief device monitoring alone or in combination with process parameter monitoring data and process knowledge.
- (iv) You must determine the total number of release events that occurred during the calendar year for each affected pressure relief device separately. Prior to June 3, 2024, you must also determine the total number of release events for each pressure relief device for which the root cause analysis concluded that the root cause was a *force majeure* event, as defined in § 63.2550.
- (v) Except for pressure relief devices described in paragraphs (e)(4) and (5) of this section, the following release events from an affected pressure relief device are a deviation of the pressure release management work practice standards.
 - (A) Any release event for which the root cause of the event was determined to be operator error or poor maintenance.
 - (B) Prior to June 3, 2024, a second release event not including force majeure events from a single pressure relief device in a 3 calendar year period for the same root cause for the same equipment. On and after June 3, 2024, a second release event from a single pressure relief device in a 3 calendar year period for the same root cause for the same equipment.

- (C) Prior to June 3, 2024, a third release event not including force majeure events from a single pressure relief device in a 3 calendar year period for any reason. On and after June 3, 2024, a third release event from a single pressure relief device in a 3 calendar year period for any reason.
- (4) ***Pressure relief devices routed to a control device, process, fuel gas system, or drain system.***
 - (i) If all releases and potential leaks from a pressure relief device are routed through a closed vent system to a control device, back into the process, to the fuel gas system, or to a drain system, then you are not required to comply with paragraph (e)(1), (2), or (3) of this section.
 - (ii) Before the compliance dates specified in § 63.2445(g), both the closed vent system and control device (if applicable) referenced in paragraph (e)(4)(i) of this section must meet the applicable requirements specified in § 63.982(b) and (c)(2) of subpart SS. Beginning no later than the compliance dates specified in § 63.2445(g), both the closed vent system and control device (if applicable) referenced in paragraph (e)(4)(i) of this section must meet the applicable requirements specified in §§ 63.982(c)(2), 63.983, and 63.2450(e)(4) through (6).
 - (iii) The drain system (if applicable) referenced in paragraph (e)(4)(i) must meet the applicable requirements specified in § 63.2485(e).
- (5) ***Pressure relief devices exempted from pressure release management requirements.*** The following types of pressure relief devices are not subject to the pressure release management requirements in paragraph (e)(3) of this section.
 - (i) Pressure relief devices in heavy liquid service, as defined in § 63.1020 of subpart UU or § 65.103(f) of this chapter.
 - (ii) Thermal expansion relief valves.
 - (iii) Pressure relief devices on mobile equipment.
 - (iv) Pilot-operated pressure relief devices where the primary release valve is routed through a closed vent system to a control device or back into the process, to the fuel gas system, or to a drain system.
 - (v) Balanced bellows pressure relief devices where the primary release valve is routed through a closed vent system to a control device or back into the process, to the fuel gas system, or to a drain system.
- (6) ***Root cause analysis and corrective action analysis.*** A root cause analysis and corrective action analysis must be completed as soon as possible, but no later than 45 days after a release event. Special circumstances affecting the number of root cause analyses and/or corrective action analyses are provided in paragraphs (e)(6)(i) through (iii) of this section.
 - (i) You may conduct a single root cause analysis and corrective action analysis for a single emergency event that causes two or more pressure relief devices installed on the same equipment to release.
 - (ii) Prior to June 3, 2024, you may conduct a single root cause analysis and corrective action analysis for a single emergency event that causes two or more pressure relief devices to release, regardless of the equipment served, if the root cause is reasonably expected to be a *force majeure* event, as defined in § 63.2550.

- (iii) Except as provided in paragraphs (e)(6)(i) and (ii) of this section, if more than one pressure relief device has a release during the same time period, an initial root cause analysis must be conducted separately for each pressure relief device that had a release. If the initial root cause analysis indicates that the release events have the same root cause(s), the initially separate root cause analyses may be recorded as a single root cause analysis and a single corrective action analysis may be conducted.
- (7) **Corrective action implementation.** You must conduct a root cause analysis and corrective action analysis as specified in paragraphs (e)(3)(iii) and (e)(6) of this section, and you must implement the corrective action(s) identified in the corrective action analysis in accordance with the applicable requirements in paragraphs (e)(7)(i) through (iii) of this section.
 - (i) All corrective action(s) must be implemented within 45 days of the event for which the root cause and corrective action analyses were required or as soon thereafter as practicable. If you conclude that no corrective action should be implemented, you must record and explain the basis for that conclusion no later than 45 days following the event.
 - (ii) For corrective actions that cannot be fully implemented within 45 days following the event for which the root cause and corrective action analyses were required, you must develop an implementation schedule to complete the corrective action(s) as soon as practicable.
 - (iii) No later than 45 days following the event for which a root cause and corrective action analyses were required, you must record the corrective action(s) completed to date, and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates.
- (8) **Flowing pilot-operated pressure relief devices.** For affected sources that commenced construction or reconstruction on or before December 17, 2019, you are prohibited from installing a flowing pilot-operated pressure relief device or replacing any pressure relief device with a flowing pilot-operated pressure relief device after August 12, 2023. For affected sources that commenced construction or reconstruction after December 17, 2019, you are prohibited from installing and operating flowing pilot-operated pressure relief devices. For purpose of compliance with this paragraph (e)(8), a flowing pilot-operated pressure relief device means the type of pilot-operated pressure relief device where the pilot discharge vent continuously releases emissions to the atmosphere when the pressure relief device is actuated.
- (f) Beginning no later than the compliance dates specified in § 63.2445(g), the referenced provisions specified in paragraphs (f)(1) through (18) of this section do not apply when demonstrating compliance with this section.
 - (1) Section 63.163(c)(3) of subpart H.
 - (2) Section 63.172(j)(3) of subpart H.
 - (3) The second sentence of § 63.181(d)(5)(i) of subpart H.
 - (4) The phrase “may be included as part of the startup, shutdown, and malfunction plan, as required by the referencing subpart for the source, or” from § 63.1024(f)(4)(i) of subpart UU.
 - (5) Section 63.1026(b)(3) of subpart UU.
 - (6) The phrase “(except periods of startup, shutdown, or malfunction)” from § 63.1026(e)(1)(ii)(A) of subpart UU.

- (7) The phrase “(except during periods of startup, shutdown, or malfunction)” from § 63.1028(e)(1)(i)(A) of subpart UU.
- (8) The phrase “(except during periods of startup, shutdown, or malfunction)” from § 63.1031(b)(1) of subpart UU.
- (9) The second sentence of § 65.105(f)(4)(i) of this chapter.
- (10) Section 65.107(b)(3) of this chapter.
- (11) The phrase “(except periods of start-up, shutdown, or malfunction)” from § 65.107(e)(1)(ii)(A) of this chapter.
- (12) The phrase “(except during periods of start-up, shutdown, or malfunction)” from § 65.109(e)(1)(i)(A) of this chapter.
- (13) The phrase “(except during periods of start-up, shutdown, or malfunction)” from § 65.112(b)(1) of this chapter.
- (14) The last sentence of § 65.115(b)(1) of this chapter.
- (15) The last sentence of § 65.115(b)(2) of this chapter.
- (16) The phrase “Except for pressure relief devices needed for safety purposes, low leg drains, high point bleeds, analyzer vents, and open-ended valves or lines” in § 65.143(a)(3) of this chapter.
- (17) For flares complying with § 63.2450(e)(5), the following provisions do not apply:
 - (i) Section 63.172(d) of subpart H;
 - (ii) Section 63.180(e) of subpart H;
 - (iii) Section 63.181(g)(1)(iii) of subpart H;
 - (iv) The phrase “including periods when a flare pilot light system does not have a flame” from § 63.181(g)(2)(i) of subpart H;
 - (v) Section 63.1034(b)(2)(iii) of subpart UU; and
 - (vi) Section 65.115(b)(2) of this chapter.
- (18) For pressure relief devices complying with § 63.2480(e), the following provisions are modified as follows:
 - (i) In the introductory text of § 63.180(c), replace the reference to § 63.165(a) with § 63.2480(e)(1).
 - (ii) In § 63.181(b)(2)(i), replace the reference to § 63.165(c) with § 63.2480(e)(4).
 - (iii) In § 63.181(b)(3)(i), replace the reference to § 63.165(a) with § 63.2480(e)(1).
 - (iv) In § 63.181(b)(3)(ii), replace the reference to § 63.165(d) with § 63.2480(e)(2)(ii) and (iii).
 - (v) In § 63.181(f), replace the reference to § 63.165(a) and (b) with § 63.2480(e)(1) and (2).
 - (vi) The information in § 63.165(a) required to be reported under § 63.182(d)(2)(xiv) is now required to be reported under § 63.2520(e)(15)(i) through (iii).
 - (vii) The reference to § 63.1030(b) in § 63.1021(a) no longer applies.

- (viii) In § 63.1022(b)(2), replace the reference to § 63.1030(d) with § 63.2480(e)(4).
- (ix) In § 63.1022(b)(3), replace the reference to § 63.1030(e) with § 63.2480(e)(2)(ii).
- (x) The reference to § 63.1030(c) in § 63.1023(a)(1)(v) no longer applies. Instead comply with the § 63.2480(e)(1) and (2).
- (xi) In § 63.1023(c) introductory text and (c)(4), replace the reference to § 63.1030(b) with § 63.2480(e)(1).
- (xii) In § 63.1038(c) replace the reference to § 63.1030(c)(3) with § 63.2480(e)(2).
- (xiii) The information in § 63.1030(b) required to be reported under § 63.1039(b)(4) is now required to be reported under § 63.2520(e)(15)(i) and (ii).
- (xiv) The reference to § 65.111(b) of this chapter in § 65.102(a) of this chapter no longer applies.
- (xv) In § 65.103(b)(3) of this chapter, replace the reference to § 65.111(d) with § 63.2480(e)(4).
- (xvi) In § 65.103(b)(4) of this chapter, replace the reference to § 63.111(e) with § 63.2480(e)(2)(ii).
- (xvii) The reference to § 65.111(b) and (c) of this chapter in § 65.104(a)(1)(iv) of this chapter no longer applies. Instead comply with § 63.2480(e)(1) and (2).
- (xviii) In § 65.104(c) introductory text and (c)(4) of this chapter, replace the reference to § 63.111(b) with § 63.2480(e)(1).
- (xix) In § 65.119(c)(5) of this chapter, replace the reference to § 65.111(c)(3) with § 63.2480(e)(2) and replace the reference to § 65.111(e) with § 63.2480(e)(2)(ii) and (iii).
- (xx) The information required to be reported under § 65.120(b)(4) of this chapter is now required to be reported under § 63.2520(e)(15)(i) and (ii).

[71 FR 40335, July 14, 2006, as amended at 85 FR 49141, Aug. 12, 2020; 89 FR 23869, Apr. 4, 2024]

§ 63.2485 What requirements must I meet for wastewater streams and liquid streams in open systems within an MCPU?

- (a) **General.** You must meet each requirement in Table 7 to this subpart that applies to your wastewater streams and liquid streams in open systems within an MCPU, except as specified in paragraphs (b) through (q) of this section.
- (b) **Wastewater HAP.** Where § 63.105 and §§ 63.132 through 63.148 refer to compounds in table 9 of subpart G of this part 63, the compounds in tables 8 and 9 to this subpart apply for the purposes of this subpart.
- (c) **Group 1 wastewater.** Section 63.132(c)(1) (i) and (ii) do not apply. For the purposes of this subpart, a process wastewater stream is Group 1 for compounds in tables 8 and 9 to this subpart if any of the conditions specified in paragraphs (c) (1) through (3) of this section are met.
 - (1) The total annual average concentration of compounds in table 8 to this subpart is greater than or equal to 10,000 ppmw at any flowrate, and the total annual load of compounds in table 8 to this subpart is greater than or equal to 200 lb/yr.
 - (2) The total annual average concentration of compounds in table 8 to this subpart is greater than or equal to 1,000 ppmw, and the annual average flowrate is greater than or equal to 1 l/min.

- (3) The combined total annual average concentration of compounds in tables 8 and 9 to this subpart is greater than or equal to 30,000 ppmw, and the combined total annual load of compounds in tables 8 and 9 to this subpart is greater than or equal to 1 tpy.

(d) **Wastewater tank requirements.**

- (1) When §§ 63.133 and 63.147 reference floating roof requirements in §§ 63.119 and 63.120, the corresponding requirements in subpart WW of this part 63 may be applied for the purposes of this subpart.
- (2) When § 63.133(a) refers to table 10 of subpart G of this part 63, the maximum true vapor pressure in the table shall be limited to the HAP listed in tables 8 and 9 of this subpart FFFF.
- (3) For the purposes of this subpart, the requirements of § 63.133(a)(2) are satisfied by operating and maintaining a fixed roof if you demonstrate that the total soluble and partially soluble HAP emissions from the wastewater tank are no more than 5 percent higher than the emissions would be if the contents of the wastewater tank were not heated, treated by an exothermic reaction, or sparged.
- (4) The emission limits specified in §§ 63.133(b)(2) and 63.139 for control devices used to control emissions from wastewater tanks do not apply during periods of planned routine maintenance of the control device(s) of no more than 240 hr/yr. You may request an extension to a total of 360 hr/yr in accordance with the procedures specified in § 63.2470(d).

(e) **Individual drain systems.** The provisions of § 63.136(e)(3) apply except as specified in paragraph (e)(1) of this section.

- (1) A sewer line connected to drains that are in compliance with § 63.136(e)(1) may be vented to the atmosphere, provided that the sewer line entrance to the first downstream junction box is water sealed and the sewer line vent pipe is designed as specified in § 63.136(e)(2)(ii)(A).

(2) [Reserved]

(f) **Closed-vent system requirements.** Except as specified in § 63.2450(e)(6), when § 63.148(k) refers to closed vent systems that are subject to the requirements of § 63.172, the requirements of either § 63.172 or § 63.1034 apply for the purposes of this subpart.

(g) **Halogenated vent stream requirements.** For each halogenated vent stream from a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream that is vented through a closed-vent system to a combustion device to reduce organic HAP emissions, you must meet the same emission limits as specified for batch process vents in item 2 of table 2 to this subpart.

(h) **Alternative test methods.**

- (1) As an alternative to the test methods specified in § 63.144(b)(5)(i), you may use Method 8260 or 8270 as specified in § 63.1257(b)(10)(iii).
- (2) As an alternative to using the methods specified in § 63.144(b)(5)(i), you may conduct wastewater analyses using Method 1666 or 1671 of 40 CFR part 136 and comply with the sampling protocol requirements specified in § 63.144(b)(5)(ii). The validation requirements specified in § 63.144(b)(5)(iii) do not apply if you use Method 1666 or 1671 of 40 CFR part 136.
- (3) As an alternative to using Method 18 of 40 CFR part 60, as specified in §§ 63.139(c)(1)(ii) and 63.145(i)(2), you may elect to use Method 25A of 40 CFR part 60 as specified in § 63.997.

- (4) As an alternative to using EPA Method 624 of 40 CFR part 136, appendix A, as specified in § 63.144(b)(5)(i)(C), you may use ASTM D5790-95 (Reapproved 2012) (incorporated by reference, see § 63.14) for the analysis of total organic HAP in wastewater samples. If you choose to use ASTM D5790-95 (Reapproved 2012), then you must also use the sampling procedures of EPA Method 25D 40 CFR part 60, appendix A-7, or an equivalent method.

(i) **Offsite management and treatment option.**

- (1) If you ship wastewater to an offsite treatment facility that meets the requirements of § 63.138(h), you may elect to document in your notification of compliance status report that the wastewater will be treated as hazardous waste at a facility that meets the requirements of § 63.138(h) as an alternative to having the offsite facility submit the certification specified in § 63.132(g)(2).
- (2) As an alternative to the management and treatment options specified in § 63.132(g)(2), any affected wastewater stream (or residual removed from an affected wastewater stream) with a total annual average concentration of compounds in Table 8 to this subpart less than 50 ppmw may be transferred offsite in accordance with paragraphs (i)(2) (i) and (ii) of this section.
 - (i) The transferee (or you) must demonstrate that less than 5 percent of the HAP in Table 9 to this subpart is emitted from the waste management units up to the activated sludge unit.
 - (ii) The transferee must treat the wastewater stream or residual in a biological treatment unit in accordance with the requirement in paragraph (i)(2)(iii) of this section and the requirements of §§ 63.138 and 63.145 and the requirements referenced therein.
 - (iii) Beginning no later than the compliance dates specified in § 63.2445(g), the requirement of § 63.145(a)(3) no longer applies. Instead, the transferee must comply with the conditions specified in § 63.2450(g)(6).

- (j) You must determine the annual average concentration and annual average flowrate for wastewater streams for each MCPU. The procedures for flexible operation units specified in § 63.144 (b) and (c) do not apply for the purposes of this subpart.

- (k) **Outlet concentration correction for supplemental gases.** The requirement to correct outlet concentrations from combustion devices to 3-percent oxygen in §§ 63.139(c)(1)(ii) and 63.145(i)(6) applies only if supplemental gases are combined with a vent stream from a Group 1 wastewater stream. If emissions are controlled with a vapor recovery system as specified in § 63.139(c)(2), you must correct for supplemental gases as specified in § 63.2460(c)(6).

(l) **Requirements for liquid streams in open systems.**

- (1) References in § 63.149 to § 63.100(b) mean § 63.2435(b) for the purposes of this subpart.
- (2) When § 63.149(e) refers to 40 CFR 63.100(l) (1) or (2), § 63.2445(a) applies for the purposes of this subpart.
- (3) When § 63.149 uses the term “chemical manufacturing process unit,” the term “MCPU” applies for the purposes of this subpart.
- (4) When § 63.149(e)(1) refers to characteristics of water that contain compounds in Table 9 to 40 CFR part 63, subpart G, the characteristics specified in paragraphs (c) (1) through (3) of this section apply for the purposes of this subpart.

(5) When § 63.149(e)(2) refers to characteristics of water that contain compounds in Table 9 to 40 CFR part 63, subpart G, the characteristics specified in paragraph (c)(2) of this section apply for the purposes of this subpart.

(m) When § 63.132(f) refers to “a concentration of greater than 10,000 ppmw of table 9 compounds,” the phrase “a concentration of greater than 30,000 ppmw of total partially soluble HAP (PSHAP) and soluble HAP (SHAP) or greater than 10,000 ppmw of PSHAP” shall apply for the purposes of this subpart.

(n) **Alternative requirements for wastewater that is Group 1 for soluble HAP only.** The option specified in this paragraph (n) applies to wastewater that is Group 1 for soluble HAP in accordance with paragraph (c)(3) of this section and is discharged to biological treatment. Except as provided in paragraph (n)(4) of this section, this option does not apply to wastewater that is Group 1 for partially soluble HAP in accordance with paragraph (c)(1), (c)(2), or (c)(4) of this section. For wastewater that is Group 1 for SHAP, you need not comply with §§ 63.133 through 63.137 for any equalization unit, neutralization unit, and/or clarifier prior to the activated sludge unit, and you need not comply with the venting requirements in § 63.136(e)(2)(ii)(A) for lift stations with a volume larger than 10,000 gal, provided you comply with the requirements specified in paragraphs (n)(1) through (3) of this section and all otherwise applicable requirements specified in table 7 to this subpart. For this option, the treatment requirements in § 63.138 and the performance testing requirements in § 63.145 do not apply to the biological treatment unit, except as specified in paragraphs (n)(2)(i) through (iv) of this section.

(1) Wastewater must be hard-piped between the equalization unit, clarifier, and activated sludge unit. This requirement does not apply to the transfer between any of these types of units that are part of the same structure and one unit overflows into the next.

(2) Calculate the destruction efficiency of the biological treatment unit using Equation 1 to this paragraph (n)(2) in accordance with the procedures described in paragraphs (n)(2)(i) through (viii) of this section. You have demonstrated initial compliance if E is greater than or equal to 90 percent.

$$E = \frac{(QMW_a - QMG_e - QMG_n - QMG_c)(F_{bio})}{QMW_a} \times 100 \quad (\text{Eq. 1})$$

Where:

E = destruction efficiency of total PSHAP and SHAP for the biological treatment unit including the equalization unit, neutralization unit, and/or clarifier, percent;

QMW_a = mass flow rate of total PSHAP and SHAP compounds entering the equalization unit (or whichever of the three types of units is first), kilograms per hour (kg/hr);

QMG_e = mass flow rate of total PSHAP and SHAP compounds emitted from the equalization unit, kg/hr;

QMG_n = mass flow rate of total PSHAP and SHAP compounds emitted from the neutralization unit, kg/hr;

QMG_c = mass flow rate of total PSHAP and SHAP compounds emitted from the clarifier, kg/hr

F_{bio} = site-specific fraction of PSHAP and SHAP compounds biodegraded in the biological treatment unit.

- (i) Include all PSHAP and SHAP compounds in both Group 1 and Group 2 wastewater streams from all MCPU, except you may exclude any compounds that meet the criteria specified in § 63.145(a)(6)(ii) or (iii).
 - (ii) Except as specified in paragraph (n)(2)(vii) of this section, conduct the demonstration under representative process unit and treatment unit operating conditions in accordance with § 63.145(a)(3) and (4).
 - (iii) Determine PSHAP and SHAP concentrations and the total wastewater flow rate at the inlet to the equalization unit in accordance with § 63.145(f)(1) and (2). References in § 63.145(f)(1) and (2) to required mass removal and actual mass removal do not apply for the purposes of this section.
 - (iv) Determine F_{bio} for the activated sludge unit as specified in § 63.145(h), except as specified in paragraph (n)(2)(iv)(A) or paragraph (n)(2)(iv)(B) of this section.
 - (A) If the biological treatment process meets both of the requirements specified in § 63.145(h)(1)(i) and (ii), you may elect to replace the F_{bio} term in Equation 1 to paragraph (n)(2) of this section with the numeral "1."
 - (B) You may elect to assume f_{bio} is zero for any compounds on List 2 of table 36 in subpart G.
 - (v) Determine QMG_e , QMG_n , and QMG_c using EPA's WATER9 model or the most recent update to this model, and conduct testing or use other procedures to validate the modeling results.
 - (vi) Submit the data and results of your demonstration, including both a description of and the results of your WATER9 modeling validation procedures, in your notification of compliance status report as specified in § 63.2520(d)(2)(ii).
 - (vii) Beginning no later than the compliance dates specified in § 63.2445(g), the requirement of § 63.145(a)(3) no longer applies. Instead, you must comply with the conditions specified in § 63.2450(g)(6).
- (3) As an alternative to the venting requirements in § 63.136(e)(2)(ii)(A), a lift station with a volume larger than 10,000 gal may have openings necessary for proper venting of the lift station. The size and other design characteristics of these openings may be established based on manufacturer recommendations or engineering judgment for venting under normal operating conditions. You must describe the design of such openings and your supporting calculations and other rationale in your notification of compliance status report.
- (4) For any wastewater streams that are Group 1 for both PSHAP and SHAP, you may elect to meet the requirements specified in Table 7 to this subpart for the PSHAP and then comply with paragraphs (n)(1) through (3) of this section for the SHAP in the wastewater system. You may determine the SHAP mass removal rate, in kg/hr, in treatment units that are used to meet the requirements for PSHAP and add this amount to both the numerator and denominator in Equation 1 to paragraph (n)(2) of this section.
- (o) **Compliance records.** Except as specified in paragraph (p) of this section, for each CPMS used to monitor a nonflare control device for wastewater emissions, you must keep records as specified in § 63.998(c)(1) in addition to the records required in § 63.147(d).

- (p) **Compliance records after date of compliance.** Beginning no later than the compliance dates specified in § 63.2445(g), paragraph (o) of this section no longer applies. Instead, for each CPMS used to monitor a nonflare control device for wastewater emissions, you must keep records as specified in § 63.998(c)(1) in addition to the records required in § 63.147(d), except that the provisions of § 63.998(c)(1)(ii)(D), (E), (F), and (G) do not apply.
- (q) **Startup, shutdown, and malfunction referenced provisions.** Beginning no later than the compliance dates specified in § 63.2445(g), the referenced provisions specified in paragraphs (q)(1) through (5) of this section do not apply when demonstrating compliance with this section.
 - (1) Section 63.105(d) of subpart F and the phrase “as part of the start-up, shutdown, and malfunction plan required under § 63.6(e)(3) of subpart A of this part” from § 63.105(e) of subpart F.
 - (2) Section 63.132(b)(3)(i)(B) of subpart G.
 - (3) The phrase “or startup/shutdown/malfunction” in § 63.132(f)(2) of subpart G.
 - (4) Section 63.148(f)(3) of subpart G.
 - (5) For flares complying with § 63.2450(e)(5), the following provisions do not apply:
 - (i) Section 63.139(c)(3) of subpart G;
 - (ii) Section 63.139(d)(3) of subpart G;
 - (iii) Section 63.145(j) of subpart G;
 - (iv) Section 63.146(b)(7)(i) of subpart G; and
 - (v) Section 63.147(d)(1) of subpart G.

[68 FR 63888, Nov. 10, 2003, as amended at 70 FR 38559, July 1, 2005; 71 FR 40335, July 14, 2006; 85 FR 49144, Aug. 12, 2020]

§ 63.2490 What requirements must I meet for heat exchange systems?

- (a) You must comply with each requirement in Table 10 to this subpart that applies to your heat exchange systems, except as specified in paragraphs (b) through (e) of this section.
- (b) Except as specified in paragraph (d) of this section, if you comply with the requirements of § 63.104 as specified in Table 10 to this subpart, then the phrase “a chemical manufacturing process unit meeting the conditions of § 63.100 (b)(1) through (b)(3) of this subpart” in § 63.104(a) means “an MCPU meeting the conditions of § 63.2435” for the purposes of this subpart.
- (c) Except as specified in paragraph (d) of this section, if you comply with the requirements of § 63.104 as specified in Table 10 to this subpart, then the reference to “§ 63.100(c)” in § 63.104(a) does not apply for the purposes of this subpart.
- (d) Unless one or more of the conditions specified in § 63.104(a)(1), (2), (5), and (6) or paragraph (e) of this section are met, beginning no later than the compliance dates specified in § 63.2445(g), the requirements of § 63.104 as specified in Table 10 to this subpart and paragraphs (b) and (c) of this section no longer apply. Instead, you must monitor the cooling water for the presence of total strippable hydrocarbons that indicate a leak according to paragraph (d)(1) of this section, and if you detect a leak, then you must repair it according to paragraphs (d)(2) and (3) of this section, unless repair is delayed according to paragraph (d)(4) of this section. At any time before the compliance dates specified in § 63.2445(g), you may choose to comply with the requirements in this paragraph (d) in lieu of the requirements of § 63.104 as specified

in Table 10 to this subpart and paragraphs (b) and (c) of this section. The requirements in this paragraph (d) do not apply to heat exchange systems that have a maximum cooling water flow rate of 10 gallons per minute or less.

- (1) You must perform monitoring to identify leaks of total strippable hydrocarbons from each heat exchange system subject to the requirements of this subpart according to the procedures in paragraphs (d)(1)(i) through (v) of this section.
 - (i) **Monitoring locations for closed-loop recirculation heat exchange systems.** For each closed loop recirculating heat exchange system, you must collect and analyze a sample from the location(s) described in either paragraph (d)(1)(i)(A) or (B) of this section.
 - (A) Each cooling tower return line or any representative riser within the cooling tower prior to exposure to air for each heat exchange system.
 - (B) Selected heat exchanger exit line(s), so that each heat exchanger or group of heat exchangers within a heat exchange system is covered by the selected monitoring location(s).
 - (ii) **Monitoring locations for once-through heat exchange systems.** For each once-through heat exchange system, you must collect and analyze a sample from the location(s) described in paragraph (d)(1)(ii)(A) of this section. You may also elect to collect and analyze an additional sample from the location(s) described in paragraph (d)(1)(ii)(B) of this section.
 - (A) Selected heat exchanger exit line(s), so that each heat exchanger or group of heat exchangers within a heat exchange system is covered by the selected monitoring location(s). The selected monitoring location may be at a point where discharges from multiple heat exchange systems are combined provided that the combined cooling water flow rate at the monitoring location does not exceed 40,000 gallons per minute.
 - (B) The inlet water feed line for a once-through heat exchange system prior to any heat exchanger. If multiple heat exchange systems use the same water feed (*i.e.*, inlet water from the same primary water source), you may monitor at one representative location and use the monitoring results for that sampling location for all heat exchange systems that use that same water feed.
 - (iii) **Monitoring method.** If you comply with the total strippable hydrocarbon concentration leak action level as specified in paragraph (d)(1)(iv) of this section, you must comply with the requirements in paragraph (d)(1)(iii)(A) of this section. If you comply with the total hydrocarbon mass emissions rate leak action level as specified in paragraph (d)(1)(iv) of this section, you must comply with the requirements in paragraphs (d)(1)(iii)(A) and (B) of this section.
 - (A) You must determine the total strippable hydrocarbon concentration (in parts per million by volume (ppmv) as methane) at each monitoring location using the "Air Stripping Method (Modified El Paso Method) for Determination of Volatile Organic Compound Emissions from Water Sources" (incorporated by reference—see § 63.14) using a flame ionization detector (FID) analyzer for on-site determination as described in Section 6.1 of the Modified El Paso Method.

- (B) You must convert the total strippable hydrocarbon concentration (in ppmv as methane) to a total hydrocarbon mass emissions rate (as methane) using the calculations in Section 7.0 of "Air Stripping Method (Modified El Paso Method) for Determination of Volatile Organic Compound Emissions from Water Sources" (incorporated by reference—see § 63.14).
- (iv) **Monitoring frequency and leak action level.** For each heat exchange system, you must initially monitor monthly for 6-months beginning upon startup and monitor quarterly thereafter using a leak action level defined as a total strippable hydrocarbon concentration (as methane) in the stripping gas of 6.2 ppmv or, for heat exchange systems with a recirculation rate of 10,000 gallons per minute or less, you may monitor quarterly using a leak action level defined as a total hydrocarbon mass emissions rate from the heat exchange system (as methane) of 0.18 kg/hr. If a leak is detected as specified in paragraph (d)(1)(v) of this section, then you must monitor monthly until the leak has been repaired according to the requirements in paragraph (d)(2) or (3) of this section. Once the leak has been repaired according to the requirements in paragraph (d)(2) or (3) of this section, quarterly monitoring for the heat exchange system may resume. The monitoring frequencies specified in this paragraph (d)(1)(iv) also apply to the inlet water feed line for a once-through heat exchange system, if monitoring of the inlet water feed is elected as provided in paragraph (d)(1)(ii)(B) of this section.
- (v) **Leak definition.** A leak is defined as described in paragraph (d)(1)(v)(A) or (B) of this section, as applicable.
 - (A) For once-through heat exchange systems for which the inlet water feed is monitored as described in paragraph (d)(1)(ii)(B) of this section, a leak is detected if the difference in the measurement value of the sample taken from a location specified in paragraph (d)(1)(ii)(A) of this section and the measurement value of the corresponding sample taken from the location specified in paragraph (d)(1)(ii)(B) of this section equals or exceeds the leak action level.
 - (B) For all other heat exchange systems, a leak is detected if a measurement value of the sample taken from a location specified in paragraph (d)(1)(i)(A) or (B) or (d)(1)(ii)(A) of this section equals or exceeds the leak action level.
- (2) If a leak is detected using the methods described in paragraph (d)(1) of this section, you must repair the leak to reduce the concentration or mass emissions rate to below the applicable leak action level as soon as practicable, but no later than 45 days after identifying the leak, except as specified in paragraph (d)(4) of this section. Repair must include re-monitoring at the monitoring location where the leak was identified according to the method specified in paragraph (d)(1)(iii) of this section to verify that the total strippable hydrocarbon concentration or total hydrocarbon mass emissions rate is below the applicable leak action level. Repair may also include performing the additional monitoring in paragraph (d)(3) of this section to verify that the total strippable hydrocarbon concentration or total hydrocarbon mass emissions rate is below the applicable leak action level. Actions that can be taken to achieve repair include but are not limited to:
 - (i) Physical modifications to the leaking heat exchanger, such as welding the leak or replacing a tube;
 - (ii) Blocking the leaking tube within the heat exchanger;
 - (iii) Changing the pressure so that water flows into the process fluid;

- (iv) Replacing the heat exchanger or heat exchanger bundle; or
 - (v) Isolating, bypassing, or otherwise removing the leaking heat exchanger from service until it is otherwise repaired.
- (3) If you detect a leak when monitoring a cooling tower return line under paragraph (d)(1)(i)(A) of this section, you may conduct additional monitoring of each heat exchanger or group of heat exchangers associated with the heat exchange system for which the leak was detected, as provided in paragraph (d)(1)(i)(B) of this section. If no leaks are detected when monitoring according to the requirements of paragraph (d)(1)(i)(B) of this section, the heat exchange system is considered to have met the repair requirements through re-monitoring of the heat exchange system, as provided in paragraph (d)(2) of this section.
- (4) You may delay repair when one of the conditions in paragraph (d)(4)(i) or (ii) of this section is met and the leak is less than the delay of repair action level specified in paragraph (d)(4)(iii) of this section. You must determine if a delay of repair is necessary as soon as practicable, but no later than 45 days after first identifying the leak.
- (i) If the repair is technically infeasible without a shutdown and the total strippable hydrocarbon concentration or total hydrocarbon mass emissions rate is initially and remains less than the delay of repair action level for all monitoring periods during the delay of repair, then you may delay repair until the next scheduled shutdown of the heat exchange system. If, during subsequent monitoring, the delay of repair action level is exceeded, then you must repair the leak within 30 days of the monitoring event in which the leak was equal to or exceeded the delay of repair action level.
 - (ii) If the necessary equipment, parts, or personnel are not available and the total strippable hydrocarbon concentration or total hydrocarbon mass emissions rate is initially and remains less than the delay of repair action level for all monitoring periods during the delay of repair, then you may delay the repair for a maximum of 120 calendar days. You must demonstrate that the necessary equipment, parts, or personnel were not available. If, during subsequent monitoring, the delay of repair action level is exceeded, then you must repair the leak within 30 days of the monitoring event in which the leak was equal to or exceeded the delay of repair action level.
 - (iii) The delay of repair action level is a total strippable hydrocarbon concentration (as methane) in the stripping gas of 62 ppmv or, for heat exchange systems with a recirculation rate of 10,000 gallons per minute or less, the delay of repair action level is a total hydrocarbon mass emissions rate (as methane) of 1.8 kg/hr. The delay of repair action level is assessed as described in paragraph (d)(4)(iii)(A) or (B) of this section, as applicable.
 - (A) For once-through heat exchange systems for which the inlet water feed is monitored as described in paragraph (d)(1)(ii)(B) of this section, the delay of repair action level is exceeded if the difference in the measurement value of the sample taken from a location specified in paragraph (d)(1)(ii)(A) of this section and the measurement value of the corresponding sample taken from the location specified in paragraph (d)(1)(ii)(B) of this section equals or exceeds the delay of repair action level.
 - (B) For all other heat exchange systems, the delay of repair action level is exceeded if a measurement value of the sample taken from a location specified in paragraph (d)(1)(i)(A) or (B) or (d)(1)(ii)(A) of this section equals or exceeds the delay of repair action level.

- (e) If 99 percent by weight or more of the organic compounds that could leak into the heat exchange system are water soluble and have a Henry's Law Constant less than 5.0×10^{-6} at 25 degrees Celsius (atmospheres-cubic meters/mol) and none of the conditions specified in § 63.104(a)(1), (2), (5), and (6) are met, beginning no later than the compliance dates specified in § 63.2445(g), you may monitor the cooling water for leaks according to the requirements in § 63.104(b) in lieu of using the Modified El Paso Method. If you detect a leak according to § 63.104(b), then you must repair it according to paragraph (e)(1) of this section, unless repair is delayed according to paragraph (e)(2) of this section.
- (1) If a leak is detected using the methods described in paragraph (e) of this section, you must repair the leak as soon as practicable, but no later than 45 days after identifying the leak, except as specified in paragraph (e)(2) of this section. Repair must include re-monitoring at the monitoring location where the leak was identified to verify that the criteria in § 63.104(b)(6) is no longer met. Actions that can be taken to achieve repair include but are not limited to:
 - (i) Physical modifications to the leaking heat exchanger, such as welding the leak or replacing a tube;
 - (ii) Blocking the leaking tube within the heat exchanger;
 - (iii) Changing the pressure so that water flows into the process fluid;
 - (iv) Replacing the heat exchanger or heat exchanger bundle; or
 - (v) Isolating, bypassing, or otherwise removing the leaking heat exchanger from service until it is otherwise repaired.
- (2) You may delay repair when the conditions in § 63.104(e) are met.

[85 FR 49145, Aug. 12, 2020, as amended at 89 FR 23869, Apr. 4, 2024]

§ 63.2492 How do I determine whether my process vent, storage tank, or equipment is in ethylene oxide service?

To determine if process vents, storage tanks, and equipment leaks are in ethylene oxide service as defined in § 63.2550(i), you must comply with the requirements in paragraphs (a) through (c) of this section, as applicable.

- (a) For each batch process vent or continuous process vent stream, you must measure the flow rate and concentration of ethylene oxide of each process vent as specified in paragraphs (a)(1) through (5) of this section.
 - (1) Measurements must be made prior to any dilution of the vent streams.
 - (2) Measurements may be made on the combined vent streams at an MCPU or for each separate vent stream.
 - (3) Method 1 or 1A of 40 CFR part 60, appendix A-1, as appropriate, must be used for the selection of the sampling sites. For vents smaller than 0.10 meter in diameter, sample at one point at the center of the duct.
 - (4) The gas volumetric flow rate must be determined using Method 2, 2A, 2C, 2D, 2F, or 2G of 40 CFR part 60, appendices A-1 and A-2, as appropriate.
 - (5) The concentration of ethylene oxide must be determined using Method 18 of 40 CFR part 60, appendix A-6, or Method 320 of appendix A to this part.

- (b) For storage tanks, you must determine the concentration of ethylene oxide of the fluid stored in the storage tanks by complying with the requirements in paragraph (b)(1) or (2) of this section.
 - (1) You must measure the concentration of ethylene oxide of the fluid stored in the storage tanks using Method 624.1 of 40 CFR part 136, appendix A, or preparation by Method 5031 and analysis by Method 8260D (both incorporated by reference, see § 63.14) in the SW-846 Compendium. In lieu of preparation by SW-846 Method 5031, you may use SW-846 Method 5030B (incorporated by reference, see § 63.14), as long as: You do not use a preservative in the collected sample; you store the sample with minimal headspace as cold as possible and at least below 4 degrees C; and you analyze the sample as soon as possible, but in no case longer than 7 days from the time the sample was collected. If you are collecting a sample from a pressure vessel, you must maintain the sample under pressure both during and following sampling.
 - (2) Unless specified by the Administrator, you may calculate the concentration of ethylene oxide of the fluid stored in the storage tanks if information specific to the fluid stored is available. Information specific to the fluid stored includes concentration data from safety data sheets.
- (c) For equipment leaks, you must comply with the requirements in paragraphs (c)(1) through (4) of this section.
 - (1) Each piece of equipment within an MCPU that can reasonably be expected to contain equipment in ethylene oxide service is presumed to be in ethylene oxide service unless you demonstrate that the piece of equipment is not in ethylene oxide service. For a piece of equipment to be considered not in ethylene oxide service, it must be determined that the percent ethylene oxide content of the process fluid that is contained in or contacts equipment can be reasonably expected to not exceed 0.1 percent by weight on an annual average basis. For purposes of determining the percent ethylene oxide content of the process fluid, you must use Method 18 of 40 CFR part 60, appendix A-6, for gaseous process fluid, and Method 624.1 of 40 CFR part 136, appendix A, or preparation by Method 5031 and analysis by Method 8260D (both incorporated by reference, see § 63.14) in the SW-846 Compendium for liquid process fluid. In lieu of preparation by SW-846 Method 5031, you may use SW-846 Method 5030B (incorporated by reference, see § 63.14), as long as: You do not use a preservative in the collected sample; you store the sample with minimal headspace as cold as possible and at least below 4 degrees C; and you analyze the sample as soon as possible, but in no case longer than 7 days from the time the sample was collected.
 - (2) Unless specified by the Administrator, you may use good engineering judgment rather than the procedures specified in paragraph (c)(1) of this section to determine that the percent ethylene oxide content of the process fluid that is contained in or contacts equipment does not exceed 0.1 percent by weight.
 - (3) You may revise your determination for whether a piece of equipment is in ethylene oxide service by following the procedures in paragraph (c)(1) of this section, or by documenting that a change in the process or raw materials no longer causes the equipment to be in ethylene oxide service.
 - (4) Samples used in determining the ethylene oxide content must be representative of the process fluid that is contained in or contacts the equipment.

[85 FR 49146, Aug. 12, 2020, as amended at 89 FR 23870, Apr. 3, 2024]

§ 63.2493 What requirements must I meet for process vents, storage tanks, or equipment that are in ethylene oxide service?

This section applies beginning no later than the compliance dates specified in § 63.2445(i). In order to demonstrate compliance with the emission limits and work practice standards specified in Tables 1, 2, and 4 to this subpart for process vents and storage tanks in ethylene oxide service, you must meet the requirements specified in paragraphs (a) through (c) of this section. In order to demonstrate compliance with the requirements specified in Table 6 to this subpart for equipment in ethylene oxide service, you must meet the requirements specified in paragraphs (d) and (e) of this section.

- (a) **Initial compliance.** For initial compliance, you must comply with paragraphs (a)(1) through (4) of this section, as applicable.
- (1) If you choose to reduce emissions of ethylene oxide by venting emissions through a closed-vent system to a flare as specified in Table 1, 2, or 4 to this subpart, then you must comply with § 63.2450(e)(4) and (6) and the requirements in § 63.983, and you must conduct the initial visible emissions demonstration required by § 63.670(h) of subpart CC as specified in § 63.2450(e)(5).
- (2) If you choose to reduce emissions of ethylene oxide by venting emissions through a closed-vent system to a non-flare control device that reduces ethylene oxide by greater than or equal to 99.9 percent by weight as specified in Table 1, 2, or 4 to this subpart, then you must comply with § 63.2450(e)(4) and (6) and the requirements in § 63.983, and you must comply with paragraphs (a)(2)(i) through (viii) of this section.
- (i) Conduct an initial performance test of the control device that is used to comply with the percent reduction requirement at the inlet and outlet of the control device. For purposes of compliance with this paragraph (a)(2), you may not use a design evaluation.
- (ii) Conduct the performance test according to the procedures in §§ 63.997 and 63.2450(g). Use Method 18 of 40 CFR part 60, appendix A-6, or Method 320 of appendix A to this part to determine the ethylene oxide concentration. Use Method 1 or 1A of 40 CFR part 60, appendix A-1, to select the sampling sites at each sampling location. Determine the gas volumetric flowrate using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A-2. Use Method 4 of 40 CFR part 60, appendix A-3, to convert the volumetric flowrate to a dry basis.
- (iii) Calculate the mass emission rate of ethylene oxide entering the control device and exiting the control device using Equations 1 and 2 to this paragraph (a)(2)(iii).

$$E_{\text{EtO,inlet}} = K C_{\text{EtO,inlet}} M_{\text{EtO}} Q_{\text{inlet}} \text{ (Eq. 1)}$$

$$E_{\text{EtO,outlet}} = K C_{\text{EtO,outlet}} M_{\text{EtO}} Q_{\text{outlet}} \text{ (Eq. 2)}$$

Where:

$E_{\text{EtO,inlet}}$, $E_{\text{EtO,outlet}}$ = Mass rate of ethylene oxide at the inlet and outlet of the control device, respectively, kilogram per hour.

$C_{\text{EtO,inlet}}$, $C_{\text{EtO,outlet}}$ = Concentration of ethylene oxide in the gas stream at the inlet and outlet of the control device, respectively, dry basis, parts per million by volume.

M_{EtO} = Molecular weight of ethylene oxide, 44.05 grams per gram-mole.

Q_{inlet} , Q_{outlet} = Flow rate of the gas stream at the inlet and outlet of the control device, respectively, dry standard cubic meter per minute.

K = Constant, 2.494×10^{-6} (parts per million) $^{-1}$ (gram-mole per standard cubic meter) (kilogram per gram) (minutes per hour), where standard temperature (gram-mole per standard cubic meter) is 20 °C.

- (iv) Calculate the percent reduction from the control device using Equation 3 to this paragraph (a)(2)(iv). You have demonstrated initial compliance if the overall reduction of ethylene oxide is greater than or equal to 99.9 percent by weight.

$$\text{Percent reduction} = (E_{EtO,inlet} - E_{EtO,outlet}) / E_{EtO,inlet} * 100 \text{ (Eq. 3)}$$

Where:

$E_{EtO,inlet}$, $E_{EtO,outlet}$ = Mass rate of ethylene oxide at the inlet and outlet of the control device, respectively, kilogram per hour, calculated using Equations 1 and 2 to paragraph (a)(2)(iii) of this section.

- (v) If a new control device is installed, then conduct a performance test of the new device following the procedures in paragraphs (a)(2)(i) through (iv) of this section.
- (vi) If you vent emissions through a closed-vent system to a scrubber with a reactant tank, then you must establish operating parameter limits by monitoring the operating parameters specified in paragraphs (a)(2)(vi)(A) through (C) of this section during the performance test.
- (vi) If you vent emissions through a closed-vent system to a scrubber with a reactant tank, then you must establish operating parameter limits by monitoring the operating parameters specified in paragraphs (a)(2)(vi)(A) through (C) of this section during the performance test.
- (A) Scrubber liquid-to-gas ratio (L/G), determined from the total scrubber liquid inlet flow rate and the exit gas flow rate. Determine the average L/G during the performance test as the average of the test run averages.
- (B) Scrubber liquid pH of the liquid in the reactant tank. The pH may be measured at any point between the discharge from the scrubber column and the inlet to the reactant tank. Determine the average pH during the performance test as the average of the test run averages.
- (C) Temperature of the scrubber liquid entering the scrubber column. The temperature may be measured at any point after the heat exchanger and prior to entering the top of the scrubber column. Determine the average inlet scrubber liquid temperature as the average of the test run averages.
- (vii) If you vent emissions through a closed-vent system to a thermal oxidizer, then you must establish operating parameter limits by monitoring the operating parameters specified in paragraphs (a)(2)(vii)(A) and (B) of this section during the performance test.
- (A) Combustion chamber temperature. Determine the average combustion chamber temperature during the performance test as the average of the test run averages.

- (B) Flue gas flow rate. Determine the average flue gas flow rate during the performance test as the average of the test run averages.
- (viii) If you vent emissions through a closed-vent system to a control device other than a flare, scrubber with a reactant tank, or thermal oxidizer, then you must notify the Administrator of the operating parameters that you plan to monitor during the performance test prior to establishing operating parameter limits for the control device.
- (viii) If you vent emissions through a closed-vent system to a control device other than a flare, scrubber with a reactant tank, or thermal oxidizer, then you must notify the Administrator of the operating parameters that you plan to monitor during the performance test prior to establishing operating parameter limits for the control device.
- (3) If you choose to reduce emissions of ethylene oxide by venting emissions through a closed-vent system to a non-flare control device that reduces ethylene oxide to less than 1 ppmv as specified in Table 1, 2, or 4 to this subpart, then you must comply with § 63.2450(e)(4) and (6) and the requirements in § 63.983, and you must comply with either paragraph (a)(3)(i) or (ii) of this section.
 - (i) Install an FTIR CEMS meeting the requirements of Performance Specification 15 of 40 CFR part 60, appendix B, to continuously monitor the ethylene oxide concentration at the exit of the control device. Comply with the requirements specified in § 63.2450(j) for your CEMS.
 - (ii) If you do not install a CEMS under paragraph (a)(3)(i) of this section, you must comply with paragraphs (a)(3)(ii)(A) through (C) of this section.
 - (A) Conduct an initial performance test of the control device that is used to comply with the concentration requirement at the outlet of the control device.
 - (B) Conduct the performance test according to the procedures in §§ 63.997 and 63.2450(g). Use Method 18 of 40 CFR part 60, appendix A-6, or Method 320 of appendix A to this part to determine the ethylene oxide concentration. You have demonstrated initial compliance if the ethylene oxide concentration is less than 1 ppmv.
 - (C) Comply with the requirements specified in paragraphs (a)(2)(v) through (viii) of this section, as applicable.
- (4) If you choose to reduce emissions of ethylene oxide by venting emissions through a closed-vent system to a non-flare control device that reduces ethylene oxide to less than 5 pounds per year for all combined process vents as specified in Table 1 or 2 to this subpart, then you must comply with § 63.2450(e)(4) and (6) and the requirements in § 63.983, and you must comply with paragraphs (a)(4)(i) through (iv) of this section.
 - (i) Conduct an initial performance test of the control device that is used to comply with the mass emission limit requirement at the outlet of the control device.
 - (ii) Conduct the performance test according to the procedures in §§ 63.997 and 63.2450(g). Use Method 18 of 40 CFR part 60, appendix A-6, or Method 320 of appendix A to this part to determine the ethylene oxide concentration. Use Method 1 or 1A of 40 CFR part 60, appendix A-1, to select the sampling site. Determine the gas volumetric flowrate using Method 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A-2. Use Method 4 of 40 CFR part 60, appendix A-3, to convert the volumetric flowrate to a dry basis.

- (iii) Calculate the mass emission rate of ethylene oxide exiting the control device using Equation 2 to paragraph (a)(2)(iii) of this section. You have demonstrated initial compliance if the ethylene oxide from all process vents (controlled and uncontrolled) is less than 5 pounds per year when combined.
 - (iv) Comply with the requirements specified in paragraphs (a)(2)(v) through (viii) of this section, as applicable.
- (b) **Continuous compliance.** For continuous compliance, you must comply with paragraphs (b)(1) through (6) of this section, as applicable.
- (1) If you choose to reduce emissions of ethylene oxide by venting emissions through a closed-vent system to a flare as specified in Table 1, 2, or 4 to this subpart, then you must comply with the requirements in §§ 63.983 and 63.2450(e)(4) through (6).
 - (2) If you choose to reduce emissions of ethylene oxide by venting emissions through a closed-vent system to a non-flare control device that reduces ethylene oxide to less than 1 ppmv as specified in Table 1, 2, or 4 to this subpart, and you choose to comply with paragraph (a)(3)(i) of this section, then continuously monitor the ethylene oxide concentration at the exit of the control device using an FTIR CEMS meeting the requirements of Performance Specification 15 of 40 CFR part 60, appendix B, and § 63.2450(j). If you use an FTIR CEMS, you do not need to conduct the performance testing required in paragraph (b)(3) of this section or the operating parameter monitoring required in paragraphs (b)(4) through (6) of this section.
 - (3) Conduct a performance test no later than 60 months after the previous performance test and reestablish operating parameter limits following the procedures in paragraph (a)(2) through (4) of this section. The Administrator may request a repeat performance test at any time. For purposes of compliance with this paragraph (b)(3), you may not use a design evaluation.
 - (4) If you vent emissions through a closed-vent system to a scrubber with a reactant tank, then you must comply with § 63.2450(e)(4) and (6) and the requirements in § 63.983, and you must meet the operating parameter limits specified in paragraphs (b)(4)(i) through (v) of this section.
 - (i) Minimum scrubber liquid-to-gas ratio (L/G), equal to the average L/G measured during the most recent performance test. Determine total scrubber liquid inlet flow rate with a flow sensor with a minimum accuracy of at least ± 5 percent over the normal range of flow measured, or 1.9 liters per minute (0.5 gallons per minute), whichever is greater. Determine exit gas flow rate with a flow sensor with a minimum accuracy of at least ± 5 percent over the normal range of flow measured, or 280 liters per minute (10 cubic feet per minute), whichever is greater. Compliance with the minimum L/G operating limit must be determined continuously on a 1-hour block basis.
 - (ii) Maximum scrubber liquid pH of the liquid in the reactant tank, equal to the average pH measured during the most recent performance test. Compliance with the pH operating limit must be determined continuously on a 1-hour block basis. Use a pH sensor with a minimum accuracy of ± 0.2 pH units.
 - (iii) Pressure drop across the scrubber column, within the pressure drop range specified by the manufacturer or established based on engineering analysis. Compliance with the pressure drop operating limit must be determined continuously on a 1-hour block basis. Use pressure sensors with a minimum accuracy of ± 5 percent over the normal operating range or 0.12 kilopascals, whichever is greater.

- (iv) Maximum temperature of the scrubber liquid entering the scrubber column, equal to the average temperature measured during the most recent performance test. Compliance with the inlet scrubber liquid temperature operating limit must be determined continuously on a 1-hour block basis. Use a temperature sensor with a minimum accuracy of ± 1 percent over the normal range of the temperature measured, expressed in degrees Celsius, or 2.8 degrees Celsius, whichever is greater.
 - (v) Liquid feed pressure to the scrubber column within the feed pressure range specified by the manufacturer or established based on engineering analysis. Compliance with the liquid feed pressure operating limit must be determined continuously on a 1-hour block basis. Use a pressure sensor with a minimum accuracy of ± 5 percent over the normal operating range or 0.12 kilopascals, whichever is greater.
- (5) If you vent emissions through a closed-vent system to a thermal oxidizer, then you must comply with § 63.2450(e)(4) and (6) and the requirements in § 63.983, and you must meet the operating parameter limits specified in paragraphs (b)(5)(i) and (ii) of this section and the requirements in paragraph (b)(5)(iii) of this section.
- (i) Minimum combustion chamber temperature, equal to the average combustion chamber temperature measured during the most recent performance test. Determine combustion chamber temperature with a temperature sensor with a minimum accuracy of at least ± 1 percent over the normal range of temperature measured, expressed in degrees Celsius, or 2.8 degrees Celsius, whichever is greater. Compliance with the minimum combustion chamber temperature operating limit must be determined continuously on a 1-hour block basis.
 - (ii) Maximum flue gas flow rate, equal to the average flue gas flow rate measured during the most recent performance test. Determine flue gas flow rate with a flow sensor with a minimum accuracy of at least ± 5 percent over the normal range of flow measured, or 280 liters per minute (10 cubic feet per minute), whichever is greater. Compliance with the maximum flue gas flow rate operating limit must be determined continuously on a 1-hour block basis.
 - (iii) You must maintain the thermal oxidizer in accordance with good combustion practices that ensure proper combustion. Good combustion practices include, but are not limited to, proper burner maintenance, proper burner alignment, proper fuel to air distribution and mixing, routine inspection, and preventative maintenance.
- (6) If you vent emissions through a closed-vent system to a control device other than a flare, scrubber with a reactant tank, or thermal oxidizer, then you must comply with § 63.2450(e)(4) and (6) and the requirements in § 63.983, and you must monitor the operating parameters identified in paragraph (a)(2)(viii) of this section and meet the established operating parameter limits to ensure continuous compliance. The frequency of monitoring and averaging time will be determined based upon the information provided to the Administrator.
- (c) **Pressure vessels.** If you have a storage tank in ethylene oxide service that is considered a pressure vessel as defined in as defined in § 63.2550(i), then you must operate and maintain the pressure vessel, as specified in paragraphs (c)(1) through (5) of this section.
- (1) The pressure vessel must be designed to operate with no detectable emissions at all times.
 - (2) Monitor each point on the pressure vessel through which ethylene oxide could potentially be emitted by conducting initial and annual performance tests using Method 21 of 40 CFR part 60, appendix A-7.

- (3) Each instrument reading greater than 500 ppmv is a deviation.
- (4) Estimate the flow rate and total regulated material emissions from the defect. Assume the pressure vessel has been emitting for half of the time since the last performance test, unless other information supports a different assumption.
- (5) Whenever ethylene oxide is in the pressure vessel, you must operate the pressure vessel as a closed system that vents through a closed vent system to a control device as specified in paragraphs (c)(5)(i) through (iii) of this section, as applicable.
 - (i) For closed vent systems, comply with § 63.2450(e)(4) and (6) and the requirements in § 63.983.
 - (ii) For a non-flare control device, comply with requirements as specified in paragraph (b) of this section.
 - (iii) For a flare, comply with the requirements of § 63.2450(e)(5).
- (d) **Equipment in ethylene oxide service.** Except as specified in paragraphs (d)(1) through (4) and (e) of this section, for equipment in ethylene oxide service as defined in § 63.2550(i), you must comply with the requirements of subpart UU or H of this part, or 40 CFR part 65, subpart F.
 - (1) For pumps in ethylene oxide service, you must comply with the requirements in paragraphs (d)(1)(i) through (iii) of this section.
 - (i) The instrument reading that defines a leak for pumps is 1,000 parts per million or greater.
 - (ii) The monitoring period for pumps is monthly.
 - (iii) When a leak is detected, it must be repaired as soon as practicable, but not later than 15 calendar days after it is detected. Delay of repair of pumps for which leaks have been detected is allowed for pumps that are isolated from the process and that do not remain in ethylene oxide service.
 - (2) For connectors in ethylene oxide service, you must comply with the requirements in paragraphs (d)(2)(i) through (iii) of this section.
 - (i) The instrument reading that defines a leak for connectors is 500 parts per million or greater.
 - (ii) The monitoring period for connectors is once every 12 months.
 - (iii) When a leak is detected, it must be repaired as soon as practicable, but not later than 15 calendar days after it is detected. Delay of repair of connectors for which leaks have been detected is allowed for connectors that are isolated from the process and that do not remain in ethylene oxide service.
 - (3) For each light liquid pump or connector in ethylene oxide service that is added to an MCPU, and for each light liquid pump or connector in ethylene oxide service that replaces a light liquid pump or connector in ethylene oxide service, you must initially monitor for leaks within 5 days after initial startup of the equipment.
 - (4) Pressure relief devices in ethylene oxide service must comply with the requirements in § 63.2480(e) and (f), except as specified in paragraphs (d)(4)(i) through (v) of this section.
 - (i) The second sentence in § 63.2480(e)(3)(iv) does not apply.

- (ii) Section 63.2480(e)(3)(v) does not apply.
 - (iii) Section 63.2480(e)(6)(ii) does not apply.
 - (iv) Any release event from an affected pressure relief device is a deviation of the pressure release management work practice standards.
 - (v) Replace all references to § 63.2445(g) with § 63.2445(i).
- (e) ***Non-applicable referenced provisions.*** The referenced provisions specified in paragraphs (e)(1) through (16) of this section do not apply when demonstrating compliance with this section.
- (1) Section 63.163(c)(3) of subpart H.
 - (2) Section 63.163(e) of subpart H.
 - (3) The second sentence of § 63.181(d)(5)(i) of subpart H.
 - (4) Section 63.1026(b)(3) of subpart UU.
 - (5) Section 63.1026(e) of subpart UU.
 - (6) The phrase “(except during periods of startup, shutdown, or malfunction)” from § 63.1028(e)(1)(i)(A) of subpart UU.
 - (7) The phrase “(except during periods of startup, shutdown, or malfunction)” from § 63.1031(b)(1) of subpart UU.
 - (8) The second sentence of § 65.105(f)(4)(i) of this chapter.
 - (9) Section 65.107(b)(3) of this chapter.
 - (10) Section 65.107(e) of this chapter.
 - (11) The phrase “(except during periods of start-up, shutdown, or malfunction)” from § 65.109(e)(1)(i)(A) of this chapter.
 - (12) The phrase “(except during periods of start-up, shutdown, or malfunction)” from § 65.112(b)(1) of this chapter.
 - (13) The last sentence of § 65.115(b)(1) of this chapter.
 - (14) The last sentence of § 65.115(b)(2) of this chapter.
 - (15) For flares complying with § 63.2450(e)(5), the following provisions do not apply:
 - (i) Section 63.172(d) of subpart H;
 - (ii) Section 63.180(e) of subpart H;
 - (iii) Section 63.181(g)(1)(iii) of subpart H;
 - (iv) The phrase “including periods when a flare pilot light system does not have a flame” from § 63.181(g)(2)(i) of subpart H;
 - (v) Section 63.1034(b)(2)(iii) of subpart H; and
 - (vi) Section 65.115(b)(2) of this chapter.
 - (16) Requirements for maintenance vents in § 63.2450(v).

[85 FR 49147, Aug. 12, 2020, as amended at 89 FR 23870, Apr. 4, 2024]

ALTERNATIVE MEANS OF COMPLIANCE

§ 63.2495 How do I comply with the pollution prevention standard?

- (a) You may elect to comply with the pollution prevention alternative requirements specified in paragraphs (a)(1) and (2) of this section in lieu of the emission limitations and work practice standards contained in Tables 1 through 7 to this subpart for any MCPU for which initial startup occurred before April 4, 2002.
 - (1) You must reduce the production-indexed HAP consumption factor (HAP factor) by at least 65 percent from a 3-year average baseline beginning no earlier than the 1994 through 1996 calendar years. For any reduction in the HAP factor that you achieve by reducing HAP that are also volatile organic compounds (VOC), you must demonstrate an equivalent reduction in the production-indexed VOC consumption factor (VOC factor) on a mass basis. For any reduction in the HAP factor that you achieve by reducing a HAP that is not a VOC, you may not increase the VOC factor.
 - (2) Any MCPU for which you seek to comply by using the pollution prevention alternative must begin with the same starting material(s) and end with the same product(s). You may not comply by eliminating any steps of a process by transferring the step offsite (to another manufacturing location). You may also not merge a solvent recovery step conducted offsite to onsite and as part of an existing process as a method of reducing consumption.
 - (3) You may comply with the requirements of paragraph (a)(1) of this section for a series of processes, including situations where multiple processes are merged, if you demonstrate to the satisfaction of the Administrator that the multiple processes were merged after the baseline period into an existing process or processes.
- (b) **Exclusions.**
 - (1) You must comply with the emission limitations and work practice standards contained in Tables 1 through 7 to this subpart for all HAP that are generated in the MCPU and that are not included in consumption, as defined in § 63.2550. If any vent stream routed to the combustion control is a halogenated vent stream, as defined in § 63.2550, then hydrogen halides that are generated as a result of combustion control must be controlled according to the requirements in § 63.2450(e)(4) and the requirements of § 63.994 and the requirements referenced therein.
 - (2) You may not merge nondedicated formulation or nondedicated solvent recovery processes with any other processes.
- (c) **Initial compliance procedures.** To demonstrate initial compliance with paragraph (a) of this section, you must prepare a demonstration summary in accordance with paragraph (c)(1) of this section and calculate baseline and target annual HAP and VOC factors in accordance with paragraphs (c)(2) and (3) of this section.
 - (1) **Demonstration plan.** You must prepare a pollution prevention demonstration plan that contains, at a minimum, the information in paragraphs (c)(1)(i) through (iii) of this section for each MCPU for which you comply with paragraph (a) of this section.
 - (i) Descriptions of the methodologies and forms used to measure and record consumption of HAP and VOC compounds.

- (ii) Descriptions of the methodologies and forms used to measure and record production of the product(s).
 - (iii) Supporting documentation for the descriptions provided in accordance with paragraphs (c)(1)(i) and (ii) of this section including, but not limited to, samples of operator log sheets and daily, monthly, and/or annual inventories of materials and products. You must describe how this documentation will be used to calculate the annual factors required in paragraph (d) of this section.
- (2) **Baseline factors.** You must calculate baseline HAP and VOC factors by dividing the consumption of total HAP and total VOC by the production rate, per process, for the first 3-year period in which the process was operational, beginning no earlier than the period consisting of the 1994 through 1996 calendar years.
- (3) **Target annual factors.** You must calculate target annual HAP and VOC factors. The target annual HAP factor must be equal to 35 percent of the baseline HAP factor. The target annual VOC factor must be lower than the baseline VOC factor by an amount equivalent to the reduction in any HAP that is also a VOC, on a mass basis. The target annual VOC factor may be the same as the baseline VOC factor if the only HAP you reduce is not a VOC.
- (d) **Continuous compliance requirements.** You must calculate annual rolling average values of the HAP and VOC factors (annual factors) in accordance with the procedures specified in paragraphs (d) (1) through (3) of this section. To show continuous compliance, the annual factors must be equal to or less than the target annual factors calculated according to paragraph (c)(3) of this section.
- (1) To calculate the annual factors, you must divide the consumption of both total HAP and total VOC by the production rate, per process, for 12-month periods at the frequency specified in either paragraph (d) (2) or (3) of this section, as applicable.
 - (2) For continuous processes, you must calculate the annual factors every 30 days for the 12-month period preceding the 30th day (i.e., annual rolling average calculated every 30 days). A process with both batch and continuous operations is considered a continuous process for the purposes of this section.
 - (3) For batch processes, you must calculate the annual factors every 10 batches for the 12-month period preceding the 10th batch (i.e., annual rolling average calculated every 10 batches), except as specified in paragraphs (d)(3) (i) and (ii) of this section.
 - (i) If you produce more than 10 batches during a month, you must calculate the annual factors at least once during that month.
 - (ii) If you produce less than 10 batches in a 12-month period, you must calculate the annual factors for the number of batches in the 12-month period since the previous calculations.
- (e) **Records.** You must keep records of HAP and VOC consumption, production, and the rolling annual HAP and VOC factors for each MCPU for which you are complying with paragraph (a) of this section.
- (f) **Reporting.**
- (1) You must include the pollution prevention demonstration plan in the precompliance report required by § 63.2520(c).
 - (2) You must identify all days when the annual factors were above the target factors in the compliance reports.

[68 FR 63888, Nov. 10, 2003, as amended at 71 FR 40336, July 14, 2006; 85 FR 49150, Aug. 12, 2020]

§ 63.2500 How do I comply with emissions averaging?

- (a) For an existing source, you may elect to comply with the percent reduction emission limitations in Tables 1, 2, 4, 5, and 7 to this subpart by complying with the emissions averaging provisions specified in § 63.150, except as specified in paragraphs (b) through (g) of this section.
- (b) The batch process vents in an MCPU collectively are considered one individual emission point for the purposes of emissions averaging, except that only individual batch process vents must be excluded to meet the requirements of § 63.150(d)(5).
- (c) References in § 63.150 to §§ 63.112 through 63.130 mean the corresponding requirements in §§ 63.2450 through 63.2490, including applicable monitoring, recordkeeping, and reporting.
- (d) References to “periodic reports” in § 63.150 mean “compliance report” for the purposes of this subpart.
- (e) For batch process vents, estimate uncontrolled emissions for a standard batch using the procedures in § 63.1257(d)(2)(i) and (ii) instead of the procedures in § 63.150(g)(2). Multiply the calculated emissions per batch by the number of batches per month when calculating the monthly emissions for use in calculating debits and credits.
- (f) References to “storage vessels” in § 63.150 mean “storage tank” as defined in § 63.2550 for the purposes of this subpart.
- (g) Beginning no later than the compliance dates specified in § 63.2445(g), § 63.150(f)(2) does not apply when demonstrating compliance with this section.

[68 FR 63888, Nov. 10, 2003, as amended at 85 FR 49150, Aug. 12, 2020]

§ 63.2505 How do I comply with the alternative standard?

As an alternative to complying with the emission limits and work practice standards for process vents and storage tanks in Tables 1 through 4 to this subpart and the requirements in §§ 63.2455 through 63.2470, you may comply with the emission limits in paragraph (a) of this section and demonstrate compliance in accordance with the requirements in paragraph (b) of this section.

(a) *Emission limits and work practice standards.*

- (1) You must route vent streams through a closed-vent system to a control device that reduces HAP emissions as specified in either paragraph (a)(1)(i) or (ii) of this section.
 - (i) If you use a combustion control device, it must reduce HAP emissions as specified in paragraphs (a)(1)(i)(A), (B), and (C) of this section.
 - (A) To an outlet TOC concentration of 20 parts per million by volume (ppmv) or less.
 - (B) To an outlet concentration of hydrogen halide and halogen HAP of 20 ppmv or less.
 - (C) As an alternative to paragraph (a)(1)(i)(B) of this section, if you control halogenated vent streams emitted from a combustion device followed by a scrubber, reduce the hydrogen halide and halogen HAP generated in the combustion device by greater than or equal to 95 percent by weight in the scrubber.

- (ii) If you use a noncombustion control device(s), it must reduce HAP emissions to an outlet total organic HAP concentration of 50 ppmv or less, and an outlet concentration of hydrogen halide and halogen HAP of 50 ppmv or less.
- (2) Any Group 1 process vents within a process that are not controlled according to this alternative standard must be controlled according to the emission limits in tables 1 through 3 to this subpart.
- (b) **Compliance requirements.** To demonstrate compliance with paragraph (a) of this section, you must meet the requirements of § 63.1258(b)(5) beginning no later than the initial compliance date specified in § 63.2445, except as specified in paragraphs (b)(1) through (9) of this section.
 - (1) You must comply with the requirements in § 63.2450(e)(4) and (6), and the requirements in § 63.983 and the requirements referenced therein for closed-vent systems, except if you are not reducing organic HAP emissions by venting emissions through a closed-vent system to any combination of control devices, including a flare or recovery device, you are not required to comply with the requirements in § 63.983(b)(1)(i)(A), (b)(1)(ii), (c), (d)(1)(ii), and (d)(2) and (3).
 - (2) When § 63.1258(b)(5)(i) refers to §§ 63.1253(d) and 63.1254(c), the requirements in paragraph (a) of this section apply for the purposes of this subpart FFFF.
 - (3) When § 63.1258(b)(5)(i)(B) refers to "HCl," it means "total hydrogen halide and halogen HAP" for the purposes of this subpart FFFF.
 - (4) When § 63.1258(b)(5)(ii) refers to § 63.1257(a)(3), it means § 63.2450(j)(5) for the purposes of this subpart FFFF.
 - (5) You must submit the results of any determination of the target analytes of predominant HAP in the notification of compliance status report.
 - (6) If you elect to comply with the requirement to reduce hydrogen halide and halogen HAP by greater than or equal to 95 percent by weight in paragraph (a)(1)(i)(C) of this section, you must meet the requirements in paragraphs (b)(6)(i) and (ii) of this section.
 - (i) Demonstrate initial compliance with the 95-percent reduction by conducting a performance test and setting a site-specific operating limit(s) for the scrubber in accordance with the requirements in § 63.2450(e)(4) and the requirements of § 63.994 and the requirements referenced therein. You must submit the results of the initial compliance demonstration in the notification of compliance status report. If the performance test report is submitted electronically through the EPA's CEDRI in accordance with § 63.2520(f), the process unit(s) tested, the pollutant(s) tested, and the date that such performance test was conducted may be submitted in the notification of compliance status report in lieu of the performance test results. The performance test results must be submitted to CEDRI by the date the notification of compliance status report is submitted.
 - (ii) Install, operate, and maintain CPMS for the scrubber as specified in §§ 63.994(c) and 63.2450(k), instead of as specified in § 63.1258(b)(5)(i)(C). You must also comply with the requirements in § 63.2450(e)(4), as applicable.
 - (7) If flow to the scrubber could be intermittent, you must install, calibrate, and operate a flow indicator as specified in § 63.2460(c)(7).
 - (8) Use the operating day as the averaging period for CEMS data and scrubber parameter monitoring data.

- (9) The requirements in paragraph (a) of this section do not apply to emissions from storage tanks during periods of planned routine maintenance of the control device that do not exceed 240 hr/yr. You may submit an application to the Administrator requesting an extension of this time limit to a total of 360 hr/yr in accordance with the procedures specified in § 63.2470(d). You must comply with the recordkeeping and reporting specified in §§ 63.998(d)(2)(ii) and 63.999(c)(4) for periods of planned routine maintenance.

[68 FR 63888, Nov. 10, 2003, as amended at 70 FR 38559, July 1, 2005; 85 FR 49150, Aug. 12, 2020]

NOTIFICATION, REPORTS, AND RECORDS

§ 63.2515 What notifications must I submit and when?

- (a) **General.** Except as specified in paragraph (d) of this section, you must submit all of the notifications in §§ 63.6(h)(4) and (5), 63.7(b) and (c), 63.8(e) and (f)(4) and (6), and 63.9(b) through (h) of subpart A that apply to you by the dates specified.
- (b) **Initial notification.**
- (1) As specified in § 63.9(b)(2), if you startup your affected source before November 10, 2003, you must submit an initial notification not later than 120 calendar days after November 10, 2003, or no later than 120 days after the source becomes subject to this subpart, whichever is later.
- (2) As specified in § 63.9(b)(3), if you startup your new affected source on or after November 10, 2003, you must submit an initial notification not later than 120 calendar days after you become subject to this subpart.
- (c) **Notification of performance test.** If you are required to conduct a performance test, you must submit a notification of intent to conduct a performance test at least 60 calendar days before the performance test is scheduled to begin as required in § 63.7(b)(1). For any performance test required as part of the initial compliance procedures for batch process vents in table 2 to this subpart, you must also submit the test plan required by § 63.7(c) and the emission profile with the notification of the performance test.
- (d) **Supplement to Notification of Compliance Status.** You must also submit supplements to the Notification of Compliance Status as specified in § 63.2520(d)(3) through (6).

[68 FR 63888, Nov. 10, 2003, as amended at 85 FR 49150, Aug. 12, 2020; 85 FR 73903, Nov. 19, 2020; 89 FR 23870, Apr. 4, 2024]

§ 63.2520 What reports must I submit and when?

- (a) You must submit each report in Table 11 to this subpart that applies to you.
- (b) Unless the Administrator has approved a different schedule for submission of reports under § 63.10(a), you must submit each report by the date in table 11 to this subpart and according to paragraphs (b)(1) through (5) of this section.
- (1) The first compliance report must cover the period beginning on the compliance date that is specified for your affected source in § 63.2445 and ending on June 30 or December 31, whichever date is the first date following the end of the first 6 months after the compliance date that is specified for your affected source in § 63.2445.

- (2) The first compliance report must be postmarked or delivered no later than August 31 or February 28, whichever date is the first date following the end of the first reporting period specified in paragraph (b)(1) of this section.
 - (3) Each subsequent compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.
 - (4) Each subsequent compliance report must be postmarked or delivered no later than August 31 or February 28, whichever date is the first date following the end of the semiannual reporting period.
 - (5) For each affected source that is subject to permitting regulations pursuant to 40 CFR part 70 or 40 CFR part 71, and if the permitting authority has established dates for submitting semiannual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), you may submit the first and subsequent compliance reports according to the dates the permitting authority has established instead of according to the dates in paragraphs (b)(1) through (4) of this section.
- (c) **Precompliance report.** You must submit a precompliance report to request approval for any of the items in paragraphs (c)(1) through (8) of this section. We will either approve or disapprove the report within 90 days after we receive it. If we disapprove the report, you must still be in compliance with the emission limitations and work practice standards in this subpart by the compliance date. To change any of the information submitted in the report, you must notify us 60 days before the planned change is to be implemented.
- (1) Requests for approval to set operating limits for parameters other than those specified in §§ 63.2455 through 63.2485 and referenced therein. Alternatively, you may make these requests according to § 63.8(f).
 - (2) Descriptions of daily or per batch demonstrations to verify that control devices subject to § 63.2450(k)(6) are operating as designed.
 - (3) A description of the test conditions, data, calculations, and other information used to establish operating limits according to § 63.2460(c)(3).
 - (4) Data and rationale used to support an engineering assessment to calculate uncontrolled emissions in accordance with § 63.1257(d)(2)(ii). This requirement does not apply to calculations of hydrogen halide and halogen HAP emissions as specified in § 63.2465(b), to determinations that the total HAP concentration is less than 50 ppmv, or if you use previous test data to establish the uncontrolled emissions.
 - (5) The pollution prevention demonstration plan required in § 63.2495(c)(1), if you are complying with the pollution prevention alternative.
 - (6) Documentation of the practices that you will implement to minimize HAP emissions from streams that contain energetics and organic peroxides, and rationale for why meeting the emission limit specified in tables 1 through 7 to this subpart would create an undue safety hazard.
 - (7) For fabric filters that are monitored with bag leak detectors, an operation and maintenance plan that describes proper operation and maintenance procedures, and a corrective action plan that describes corrective actions to be taken, and the timing of those actions, when the PM concentration exceeds the set point and activates the alarm.
 - (8) For halogen reduction device other than a scrubber, procedures for establishing monitoring parameters as required by § 63.2450(e)(3)(ii).

- (d) **Notification of compliance status report.** You must submit a notification of compliance status report according to the schedule in paragraph (d)(1) of this section, and the notification of compliance status report must contain the information specified in paragraphs (d)(2) through (6) of this section.
- (1) You must submit the notification of compliance status report no later than 150 days after the applicable compliance date specified in § 63.2445.
- (2) The notification of compliance status report must include the information in paragraphs (d)(2)(i) through (ix) of this section.
- (i) The results of any applicability determinations, emission calculations, or analyses used to identify and quantify HAP usage or HAP emissions from the affected source.
- (ii) The results of emissions profiles, performance tests, engineering analyses, design evaluations, flare compliance assessments, inspections and repairs, and calculations used to demonstrate initial compliance according to §§ 63.2455 through 63.2485. For performance tests, results must include descriptions of sampling and analysis procedures and quality assurance procedures. If the performance test report is submitted electronically through the EPA's CEDRI in accordance with paragraph (f) of this section, the process unit(s) tested, the pollutant(s) tested, and the date that such performance test was conducted may be submitted in the notification of compliance status report in lieu of the performance test results. The performance test results must be submitted to CEDRI by the date the notification of compliance status report is submitted.
- (iii) Descriptions of monitoring devices, monitoring frequencies, and the operating limits established during the initial compliance demonstrations, including data and calculations to support the levels you establish.
- (iv) All operating scenarios.
- (v) Descriptions of worst-case operating and/or testing conditions for control devices.
- (vi) Identification of parts of the affected source subject to overlapping requirements described in § 63.2535 and the authority under which you will comply.
- (vii) The information specified in § 63.1039(a)(1) through (3) for each process subject to the work practice standards for equipment leaks in Table 6 to this subpart.
- (viii) Identify storage tanks for which you are complying with the vapor balancing alternative in § 63.2470(e).
- (ix) Records as specified in § 63.2535(l)(1) through (3) of process units used to create a PUG and calculations of the initial primary product of the PUG.
- (3) For flares subject to the requirements of § 63.2450(e)(5), you must also submit the information in this paragraph (d)(3) in a supplement to the Notification of Compliance Status within 150 days after the first applicable compliance date for flare monitoring. In lieu of the information required in § 63.987(b) of subpart SS, the supplement to the Notification of Compliance Status must include flare design (e.g., steam-assisted, air-assisted, non-assisted, or pressure-assisted multi-point); all visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the initial visible emissions demonstration required by § 63.670(h) of subpart CC, as applicable; and all periods during the compliance determination when the pilot flame or flare flame is absent.

- (4) For pressure relief devices subject to the pressure release management work practice standards in § 63.2480(e)(3), you must also submit the information listed in paragraphs (d)(4)(i) and (ii) of this section in a supplement to the Notification of Compliance Status within 150 days after the first applicable compliance date for pressure relief device monitoring.
 - (i) A description of the monitoring system to be implemented, including the relief devices and process parameters to be monitored, and a description of the alarms or other methods by which operators will be notified of a pressure release.
 - (ii) A description of the prevention measures to be implemented for each affected pressure relief device.
- (5) For process vents, storage tanks, and equipment leaks subject to the requirements of § 63.2493, you must also submit the information in this paragraph (d)(5) in a supplement to the Notification of Compliance Status within 150 days after the first applicable compliance date. The supplement to the Notification of Compliance Status must identify all process vents, storage tanks, and equipment that are in ethylene oxide service as defined in § 63.2550, the method(s) used to control ethylene oxide emissions from each process vent and storage tank (i.e., use of a flare, scrubber, or other control device), the method(s) used to control ethylene oxide emissions from equipment (i.e., subpart UU or H of this part, or 40 CFR part 65, subpart F), and the information specified in paragraphs (d)(5)(i) through (iii) of this section.
 - (i) For process vents, include all uncontrolled, undiluted ethylene oxide concentration measurements, and the calculations you used to determine the total uncontrolled ethylene oxide mass emission rate for the sum of all vent gas streams.
 - (ii) For storage tanks, include the concentration of ethylene oxide of the fluid stored in each storage tank.
 - (iii) For equipment, include the percent ethylene oxide content of the process fluid and the method used to determine it.
- (6) For adsorbers subject to the requirements of § 63.2450(e)(7), you must also submit the information listed in paragraphs (d)(6)(i) and (ii) of this section in a supplement to the Notification of Compliance Status within 150 days after the first applicable compliance date.
 - (i) Whether the adsorber cannot be regenerated or is a regenerative adsorber(s) that is regenerated off site.
 - (ii) The breakthrough limit and adsorber bed life established during the initial performance test or design evaluation of the adsorber.
- (e) **Compliance report.** The compliance report must contain the information specified in paragraphs (e)(1) through (17) of this section. On and after August 12, 2023 or once the reporting template for this subpart has been available on the CEDRI website for 1 year, whichever date is later, you must submit all subsequent reports following the procedure specified in § 63.9(k), except any medium submitted through mail must be sent to the attention of the Miscellaneous Organic Chemical Manufacturing Sector Lead. You must use the appropriate electronic report template on the CEDRI website (<https://www.epa.gov/electronic-reporting-air-emissions/cedri>) for this subpart. The date report templates become available will be listed on the CEDRI website. Unless the Administrator or delegated state agency or other authority has

approved a different schedule for submission of reports under §§ 63.9(i) and 63.10(a) of subpart A, the report must be submitted by the deadline specified in this subpart, regardless of the method in which the report is submitted.

- (1) Company name and address.
- (2) Statement by a responsible official with that official's name, title, and signature, certifying the accuracy of the content of the report. If your report is submitted via CEDRI, the certifier's electronic signature during the submission process replaces the requirement in this paragraph (e)(2).
- (3) Date of report and beginning and ending dates of the reporting period. You are no longer required to provide the date of report when the report is submitted via CEDRI.
- (4) For each SSM during which excess emissions occur, the compliance report must include records that the procedures specified in your startup, shutdown, and malfunction plan (SSMP) were followed or documentation of actions taken that are not consistent with the SSMP, and include a brief description of each malfunction. On and after August 12, 2023, this paragraph (e)(4) no longer applies; however, for historical compliance purposes, a copy of the plan must be retained and available on-site for five years after August 12, 2023.
- (5) The compliance report must contain the information on deviations, as defined in § 63.2550, according to paragraphs (e)(5)(i), (ii), (iii), and (iv) of this section.
 - (i) If there are no deviations from any emission limit, operating limit or work practice standard specified in this subpart, include a statement that there were no deviations from the emission limits, operating limits, or work practice standards during the reporting period.
 - (ii) For each deviation from an emission limit, operating limit, and work practice standard that occurs at an affected source where you are not using a continuous monitoring system (CMS) to comply with the emission limit or work practice standard in this subpart, you must include the information in paragraphs (e)(5)(ii)(A) through (D) of this section. This includes periods of SSM.
 - (A) The total operating time in hours of the affected source during the reporting period.
 - (B) Except as specified in paragraph (e)(5)(ii)(D) of this section, information on the number, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.
 - (C) Operating logs of processes with batch vents from batch operations for the day(s) during which the deviation occurred, except operating logs are not required for deviations of the work practice standards for equipment leaks.
 - (D) Beginning no later than the compliance dates specified in § 63.2445(g), paragraph (e)(5)(ii)(B) of this section no longer applies. Instead, report information for each deviation to meet an applicable standard. For each instance, report the start date, start time, and duration in hours of each deviation. For each deviation, the report must include a list of the affected sources or equipment, an estimate of the quantity in pounds of each regulated pollutant emitted over any emission limit, a description of the method used to estimate the emissions, the cause of the deviation (including unknown cause, if applicable), as applicable, and the corrective action taken.

- (iii) For each deviation from an emission limit or operating limit occurring at an affected source where you are using a CMS to comply with an emission limit in this subpart, you must include the information in paragraphs (e)(5)(iii)(A) through (N) of this section. This includes periods of SSM.
 - (A) The start date, start time, and duration in hours that each CMS was inoperative, except for zero (low-level) and high-level checks.
 - (B) The start date, start time, and duration in hours that each CEMS was out-of-control and a description of the corrective actions taken.
 - (C) Except as specified in paragraph (e)(5)(iii)(M) of this section, the date and time that each deviation started and stopped, and whether each deviation occurred during a period of startup, shutdown, or malfunction or during another period.
 - (D) The total duration in hours of all deviations for each CMS during the reporting period, the total operating time in hours of the affected source during the reporting period, and the total duration as a percent of the total operating time of the affected source during that reporting period.
 - (E) Except as specified in paragraph (e)(5)(iii)(N) of this section, a breakdown of the total duration of the deviations during the reporting period into those that are due to startup, shutdown, control equipment problems, process problems, other known causes, and other unknown causes.
 - (F) The total duration in hours of CMS downtime for each CMS during the reporting period, and the total duration of CMS downtime as a percent of the total operating time of the affected source during that reporting period.
 - (G) An identification of each HAP that is known to be in the emission stream.
 - (H) A brief description of the process units.
 - (I) The monitoring equipment manufacturer(s) and model number(s) and the pollutant or parameter monitored.
 - (J) The date of the latest CMS certification or audit.
 - (K) Operating logs of processes with batch vents from batch operations for each day(s) during which the deviation occurred.
 - (L) The operating day or operating block average values of monitored parameters for each day(s) during which the deviation occurred.
 - (M) Beginning no later than the compliance dates specified in § 63.2445(g), paragraph (e)(5)(iii)(C) of this section no longer applies. Instead, report the number of deviation to meet an applicable standard. For each instance, report the start date, start time and duration in hours of each deviation. For each deviation, the report must include a list of the affected sources or equipment, an estimate of the quantity in pounds of each regulated pollutant emitted over any emission limit, a description of the method used to estimate the emissions, and the cause of the deviation (including unknown cause, if applicable), as applicable, and the corrective action taken.

- (N) Beginning no later than the compliance dates specified in § 63.2445(g), paragraph (e)(5)(iii)(E) of this section no longer applies. Instead, report a breakdown of the total duration in hours of the deviations during the reporting period into those that are due control equipment problems, process problems, other known causes, and other unknown causes.
- (iv) If you documented in your notification of compliance status report that an MCPU has Group 2 batch process vents because the non-reactive HAP is the only HAP and usage is less than 10,000 lb/yr, the total uncontrolled organic HAP emissions from the batch process vents in an MCPU will be less than 1,000 lb/yr for the anticipated number of standard batches, or total uncontrolled hydrogen halide and halogen HAP emissions from all batch process vents and continuous process vents in a process are less than 1,000 lb/yr, include the records associated with each calculation required by § 63.2525(e) that exceeds an applicable HAP usage or emissions threshold.
- (6) If you use a CEMS, and there were no periods during which it was out-of-control as specified in § 63.8(c)(7), include a statement that there were no periods during which the CEMS was out-of-control during the reporting period.
- (7) Include each new operating scenario which has been operated since the time period covered by the last compliance report and has not been submitted in the notification of compliance status report or a previous compliance report. For each new operating scenario, you must report the information specified in § 63.2525(b) and provide verification that the operating conditions for any associated control or treatment device have not been exceeded and that any required calculations and engineering analyses have been performed. For the purposes of this paragraph (e)(7), a revised operating scenario for an existing process is considered to be a new operating scenario.
- (8) For process units added to a PUG, you must report the description and rationale specified in § 63.2525(i)(4). You must report your primary product redeterminations specified in § 63.2525(i)(5).
- (9) Except as specified in §§ 63.2450(e)(4), 63.2480(f), and 63.2485(p) and (q) and paragraph (t) of this section, applicable records and information for periodic reports as specified in referenced subparts F, G, H, SS, UU, WW, and GGG of this part and subpart F of 40 CFR part 65.
- (10) Except as specified in paragraph (e)(10)(ii) of this section, whenever you make a process change, or change any of the information submitted in the notification of compliance status report or a previous compliance report, that is not within the scope of an existing operating scenario, you must document the change in your compliance report. A process change does not include moving within a range of conditions identified in the standard batch, and a nonstandard batch does not constitute a process change.
 - (i) The notification must include all of the information in paragraphs (e)(10)(i)(A) through (C) of this section.
 - (A) A description of the process change.
 - (B) Revisions to any of the information reported in the original notification of compliance status report under paragraph (d) of this section.
 - (C) Information required by the notification of compliance status report under paragraph (d) of this section for changes involving the addition of processes or equipment at the affected source.

- (ii) You must submit a report 60 days before the scheduled implementation date of any of the changes identified in paragraph (e)(10)(ii)(A), (B), or (C) of this section.
 - (A) Any change to the information contained in the precompliance report.
 - (B) A change in the status of a control device from small to large.
 - (C) A change from Group 2 to Group 1 for any emission point except for batch process vents that meet the conditions specified in § 63.2460(b)(6)(i).
- (11) For each flare subject to the requirements in § 63.2450(e)(5), the compliance report must include the items specified in paragraphs (e)(11)(i) through (vi) of this section in lieu of the information required in § 63.999(c)(3) of subpart SS.
 - (i) Records as specified in § 63.2525(m)(1) for each 15-minute block during which there was at least one minute when regulated material is routed to a flare and no pilot flame or flare flame is present. Include the start and stop time and date of each 15-minute block.
 - (ii) Visible emission records as specified in § 63.2525(m)(2)(iv) for each period of 2 consecutive hours during which visible emissions exceeded a total of 5 minutes.
 - (iii) The periods specified in § 63.2525(m)(6). Indicate the date and start and end times for each period, and the net heating value operating parameter(s) determined following the methods in § 63.670(k) through (n) of subpart CC as applicable.
 - (iv) For flaring events meeting the criteria in §§ 63.670(o)(3) of subpart CC and 63.2450(e)(5)(v):
 - (A) The start and stop time and date of the flaring event.
 - (B) The length of time in minutes for which emissions were visible from the flare during the event.
 - (C) For steam-assisted, air-assisted, and non-assisted flares, the start date, start time, and duration in minutes for periods of time that the flare tip velocity exceeds the maximum flare tip velocity determined using the methods in § 63.670(d)(2) of subpart CC and the maximum 15-minute block average flare tip velocity in ft/sec recorded during the event.
 - (D) Results of the root cause and corrective actions analysis completed during the reporting period, including the corrective actions implemented during the reporting period and, if applicable, the implementation schedule for planned corrective actions to be implemented subsequent to the reporting period.
 - (v) For pressure-assisted multi-point flares, the periods of time when the pressure monitor(s) on the main flare header show the burners operating outside the range of the manufacturer's specifications. Indicate the date and start and end times for each period.
 - (vi) For pressure-assisted multi-point flares, the periods of time when the staging valve position indicator monitoring system indicates a stage should not be in operation and is or when a stage should be in operation and is not. Indicate the date and start and end times for each period.
- (12) For bypass lines subject to the requirements § 63.2450(e)(6), the compliance report must include the start date, start time, duration in hours, estimate of the volume of gas in standard cubic feet, the concentration of organic HAP in the gas in parts per million by volume and the resulting mass emissions of organic HAP in pounds that bypass a control device. For periods when the flow indicator is not operating, report the start date, start time, and duration in hours.

- (13) For each nonregenerative adsorber and regenerative adsorber that is regenerated offsite subject to the requirements in § 63.2450(e)(7), you must report the date of each instance when breakthrough, as defined in § 63.2550(i), is detected between the first and second adsorber and the adsorber is not replaced according to § 63.2450(e)(7)(iii)(A).
- (14) For any maintenance vent release exceeding the applicable limits in § 63.2450(v)(1), the compliance report must include the information specified in paragraphs (e)(14)(i) through (iv) of this section. For the purposes of this reporting requirement, if you comply with § 63.2450(v)(1)(iv) then you must report each venting event conducted under those provisions and include an explanation for each event as to why utilization of this alternative was required.
 - (i) Identification of the maintenance vent and the equipment served by the maintenance vent.
 - (ii) The date and time the maintenance vent was opened to the atmosphere.
 - (iii) The lower explosive limit in percent, vessel pressure in psig, or mass in pounds of VOC in the equipment, as applicable, at the start of atmospheric venting. If the 5 psig vessel pressure option in § 63.2450(v)(1)(ii) was used and active purging was initiated while the concentration of the vapor was 10 percent or greater of its LEL, also include the concentration of the vapors at the time active purging was initiated.
 - (iv) An estimate of the mass in pounds of organic HAP released during the entire atmospheric venting event.
- (15) Compliance reports for pressure relief devices subject to the requirements § 63.2480(e) must include the information specified in paragraphs (e)(15)(i) through (iii) of this section.
 - (i) For pressure relief devices in organic HAP gas or vapor service, pursuant to § 63.2480(e)(1), report the instrument readings and dates for all readings of 500 ppmv or greater.
 - (ii) For pressure relief devices in organic HAP gas or vapor service subject to § 63.2480(e)(2), report the instrument readings and dates of instrument monitoring conducted.
 - (iii) For pressure relief devices in organic HAP service subject to § 63.2480(e)(3), report each pressure release to the atmosphere, including the start date, start time, and duration in minutes of the pressure release and an estimate of the mass quantity in pounds of each organic HAP released; the results of any root cause analysis and corrective action analysis completed during the reporting period, including the corrective actions implemented during the reporting period; and, if applicable, the implementation schedule for planned corrective actions to be implemented subsequent to the reporting period.
- (16) For each heat exchange system subject to § 63.2490(d) or (e), beginning no later than the compliance dates specified in § 63.2445(g), the reporting requirements of § 63.104(f)(2) no longer apply; instead, the compliance report must include the information specified in paragraphs (e)(16)(i) through (v) of this section.
 - (i) The number of heat exchange systems at the plant site subject to the monitoring requirements in § 63.2490(d) or (e) during the reporting period;
 - (ii) The number of heat exchange systems subject to the monitoring requirements in § 63.2490(d) or (e) at the plant site found to be leaking during the reporting period;

- (iii) For each monitoring location where a leak was identified during the reporting period, identification of the monitoring location (e.g., unique monitoring location or heat exchange system ID number), the measured total strippable hydrocarbon concentration or total hydrocarbon mass emissions rate (if complying with § 63.2490(d)) or the measured concentration of the monitored substance(s) (if complying with § 63.2490(e)), the date the leak was first identified, and, if applicable, the date the source of the leak was identified;
 - (iv) For leaks that were repaired during the reporting period (including delayed repairs), identification of the monitoring location associated with the repaired leak, the total strippable hydrocarbon concentration or total hydrocarbon mass emissions rate (if complying with § 63.2490(d)) or the measured concentration of the monitored substance(s) (if complying with § 63.2490(e)) measured during re-monitoring to verify repair, and the re-monitoring date (*i.e.*, the effective date of repair); and
 - (v) For each delayed repair, identification of the monitoring location associated with the leak for which repair is delayed, the date when the delay of repair began, the date the repair is expected to be completed (if the leak is not repaired during the reporting period), the total strippable hydrocarbon concentration or total hydrocarbon mass emissions rate (if complying with § 63.2490(d)) or the measured concentration of the monitored substance(s) (if complying with § 63.2490(e)) and date of each monitoring event conducted on the delayed repair during the reporting period, and an estimate in pounds of the potential total hydrocarbon emissions or monitored substance(s) emissions over the reporting period associated with the delayed repair.
- (16) For each heat exchange system subject to § 63.2490(d) or (e), beginning no later than the compliance dates specified in § 63.2445(g), the reporting requirements of § 63.104(f)(2) no longer apply; instead, the compliance report must include the information specified in paragraphs (e)(16)(i) through (v) of this section.
- (i) The number of heat exchange systems at the plant site subject to the monitoring requirements in § 63.2490(d) or (e) during the reporting period;
 - (ii) The number of heat exchange systems subject to the monitoring requirements in § 63.2490(d) or (e) at the plant site found to be leaking during the reporting period;
 - (iii) For each monitoring location where a leak was identified during the reporting period, identification of the monitoring location (e.g., unique monitoring location or heat exchange system ID number), the measured total strippable hydrocarbon concentration or total hydrocarbon mass emissions rate (if complying with § 63.2490(d)) or the measured concentration of the monitored substance(s) (if complying with § 63.2490(e)), the date the leak was first identified, and, if applicable, the date the source of the leak was identified;
 - (iv) For leaks that were repaired during the reporting period (including delayed repairs), identification of the monitoring location associated with the repaired leak, the total strippable hydrocarbon concentration or total hydrocarbon mass emissions rate (if complying with § 63.2490(d)) or the measured concentration of the monitored substance(s) (if complying with § 63.2490(e)) measured during re-monitoring to verify repair, and the re-monitoring date (*i.e.*, the effective date of repair); and
 - (v) For each delayed repair, identification of the monitoring location associated with the leak for which repair is delayed, the date when the delay of repair began, the date the repair is expected to be completed (if the leak is not repaired during the reporting period), the total strippable hydrocarbon concentration or total hydrocarbon mass emissions rate (if complying with §

63.2490(d)) or the measured concentration of the monitored substance(s) (if complying with § 63.2490(e)) and date of each monitoring event conducted on the delayed repair during the reporting period, and an estimate in pounds of the potential total hydrocarbon emissions or monitored substance(s) emissions over the reporting period associated with the delayed repair.

- (17) For process vents and storage tanks in ethylene oxide service subject to the requirements of § 63.2493, the compliance report must include:
- (i) The periods specified in § 63.2525(s)(4). Indicate the date and start and end times for each period.
 - (ii) If you obtain an instrument reading greater than 500 ppmv of a leak when monitoring a pressure vessel in accordance with § 63.2493(c)(2), submit a copy of the records specified in § 63.2525(s)(5)(ii).
 - (iii) Reports for equipment subject to the requirements of § 63.2493 as specified in paragraph (e)(9) of this section.
- (f) **Performance test reports.** Beginning no later than October 13, 2020, you must submit performance test reports in accordance with this paragraph (f). Unless otherwise specified in this subpart, within 60 days after the date of completing each performance test required by this subpart, you must submit the results of the performance test following the procedures specified in § 63.9(k). Data collected using test methods supported by the EPA's Electronic Reporting Tool (ERT) as listed on the EPA's ERT website (<https://www.epa.gov/electronic-reporting-air-emissions/electronic-reporting-tool-ert>) at the time of the test must be submitted in a file format generated through the use of the EPA's ERT. Alternatively, you may submit an electronic file consistent with the extensible markup language (XML) schema listed on the EPA's ERT website. Data collected using test methods that are not supported by the EPA's ERT as listed on the EPA's ERT website at the time of the test must be included as an attachment in the ERT or alternate electronic file.
- (g) **CEMS relative accuracy test audit (RATA) Performance evaluation reports.** Beginning no later than October 13, 2020, you must start submitting CEMS RATA performance evaluation reports in accordance with this paragraph (g). Unless otherwise specified in this subpart, within 60 days after the date of completing each continuous monitoring system performance evaluation (as defined in § 63.2) that includes a RATA, you must submit the results of the performance evaluation following the procedures specified in § 63.9(k). The results of performance evaluations of CEMS measuring RATA pollutants that are supported by the EPA's ERT as listed on the EPA's ERT website at the time of the evaluation must be submitted in a file format generated through the use of the EPA's ERT. Alternatively, you may submit an electronic file consistent with the XML schema listed on the EPA's ERT website. The results of performance evaluations of CEMS measuring RATA pollutants that are not supported by the EPA's ERT as listed on the EPA's ERT website at the time of the evaluation must be included as an attachment in the ERT or alternate electronic file.

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§ 63.2525 What records must I keep?

You must keep the records specified in paragraphs (a) through (t) of this section.

- (a) Except as specified in §§ 63.2450(e)(4), 63.2480(f), and 63.2485(p) and (q) and paragraph (t) of this section, each applicable record required by subpart A of this part and in referenced subparts F, G, SS, UU, WW, and GGG of this part and in referenced subpart F of 40 CFR part 65.
- (b) Records of each operating scenario as specified in paragraphs (b)(1) through (8) of this section.
 - (1) A description of the process and the type of process equipment used.
 - (2) An identification of related process vents, including their associated emissions episodes if not complying with the alternative standard in § 63.2505; wastewater point of determination (POD); storage tanks; and transfer racks.
 - (3) The applicable control requirements of this subpart, including the level of required control, and for vents, the level of control for each vent.
 - (4) The control device or treatment process used, as applicable, including a description of operating and/or testing conditions for any associated control device.
 - (5) The process vents, wastewater POD, transfer racks, and storage tanks (including those from other processes) that are simultaneously routed to the control device or treatment process(s).
 - (6) The applicable monitoring requirements of this subpart and any parametric level that assures compliance for all emissions routed to the control device or treatment process.
 - (7) Calculations and engineering analyses required to demonstrate compliance.
 - (8) For reporting purposes, a change to any of these elements not previously reported, except for paragraph (b)(5) of this section, constitutes a new operating scenario.
- (c) A schedule or log of operating scenarios for processes with batch vents from batch operations updated each time a different operating scenario is put into effect.
- (d) The information specified in paragraphs (d)(1) and (2) of this section for Group 1 batch process vents in compliance with a percent reduction emission limit in Table 2 to this subpart if some of the vents are controlled to less the percent reduction requirement.
 - (1) Records of whether each batch operated was considered a standard batch.
 - (2) The estimated uncontrolled and controlled emissions for each batch that is considered to be a nonstandard batch.
- (e) The information specified in paragraph (e)(2), (3), or (4) of this section, as applicable, for each process with Group 2 batch process vents or uncontrolled hydrogen halide and halogen HAP emissions from the sum of all batch and continuous process vents less than 1,000 lb/yr. No records are required for situations described in paragraph (e)(1) of this section.
 - (1) No records are required if you documented in your notification of compliance status report that the MCPU meets any of the situations described in paragraph (e)(1)(i), (ii), or (iii) of this section.
 - (i) The MCPU does not process, use, or generate HAP.
 - (ii) You control the Group 2 batch process vents using a flare that meets the requirements of § 63.987 or § 63.2450(e)(5), as applicable.

- (iii) You control the Group 2 batch process vents using a control device for which your determination of worst case for initial compliance includes the contribution of all Group 2 batch process vents.
- (2) If you documented in your notification of compliance status report that an MCPU has Group 2 batch process vents because the non-reactive organic HAP is the only HAP and usage is less than 10,000 lb/yr, as specified in § 63.2460(b)(7), you must keep records of the amount of HAP material used, and calculate the daily rolling annual sum of the amount used no less frequently than monthly. If a record indicates usage exceeds 10,000 lb/yr, you must estimate emissions for the preceding 12 months based on the number of batches operated and the estimated emissions for a standard batch, and you must begin recordkeeping as specified in paragraph (e)(4) of this section. After 1 year, you may revert to recording only usage if the usage during the year is less than 10,000 lb.
- (3) If you documented in your notification of compliance status report that total uncontrolled organic HAP emissions from the batch process vents in an MCPU will be less than 1,000 lb/yr for the anticipated number of standard batches, then you must keep records of the number of batches operated and calculate a daily rolling annual sum of batches operated no less frequently than monthly. If the number of batches operated results in organic HAP emissions that exceed 1,000 lb/yr, you must estimate emissions for the preceding 12 months based on the number of batches operated and the estimated emissions for a standard batch, and you must begin recordkeeping as specified in paragraph (e)(4) of this section. After 1 year, you may revert to recording only the number of batches if the number of batches operated during the year results in less than 1,000 lb of organic HAP emissions.
- (4) If you meet none of the conditions specified in paragraphs (e)(1) through (3) of this section, you must keep records of the information specified in paragraphs (e)(4)(i) through (iv) of this section.
 - (i) A record of the day each batch was completed and/or the operating hours per day for continuous operations with hydrogen halide and halogen emissions.
 - (ii) A record of whether each batch operated was considered a standard batch.
 - (iii) The estimated uncontrolled and controlled emissions for each batch that is considered to be a nonstandard batch.
 - (iv) Records of the daily 365-day rolling summations of emissions, or alternative records that correlate to the emissions (e.g., number of batches), calculated no less frequently than monthly.
- (f) A record of each time a safety device is opened to avoid unsafe conditions in accordance with § 63.2450(p).
- (g) Records of the results of each CPMS calibration check and the maintenance performed, as specified in § 63.2450(k)(1).
- (h) Except as specified in paragraph (l) of this section, for each CEMS, you must keep records of the date and time that each deviation started and stopped, and whether the deviation occurred during a period of startup, shutdown, or malfunction or during another period.
- (i) For each PUG, you must keep records specified in paragraphs (i)(1) through (5) of this section.
 - (1) Descriptions of the MCPU and other process units in the initial PUG required by § 63.2535(l)(1)(v).

- (2) Rationale for including each MCPU and other process unit in the initial PUG (i.e., identify the overlapping equipment between process units) required by § 63.2535(l)(1)(v).
 - (3) Calculations used to determine the primary product for the initial PUG required by § 63.2535(l)(2)(iv).
 - (4) Descriptions of process units added to the PUG after the creation date and rationale for including the additional process units in the PUG as required by § 63.2535(l)(1)(v).
 - (5) The calculation of each primary product redetermination required by § 63.2535(l)(2)(iv).
- (j) In the SSMP required by § 63.6(e)(3) of subpart A, you are not required to include Group 2 emission points, unless those emission points are used in an emissions average. For equipment leaks, the SSMP requirement is limited to control devices and is optional for other equipment. On and after August 12, 2023, this paragraph (j) no longer applies.
- (k) For each bag leak detector used to monitor PM HAP emissions from a fabric filter, maintain records of any bag leak detection alarm, including the date and time, with a brief explanation of the cause of the alarm and the corrective action taken.
- (l) Beginning no later than the compliance dates specified in § 63.2445(g), paragraph (h) of this section no longer applies. Instead, for each deviation from an emission limit, operating limit, or work practice standard, you must keep a record of the information specified in paragraph (l)(1) through (3) of this section. The records shall be maintained as specified in § 63.10(b)(1) of subpart A.
- (1) In the event that an affected unit does not meet an applicable standard, record the number of deviations. For each deviation record the date, time, and duration of each deviation.
 - (2) For each deviation from an applicable standard, record and retain a list of the affected sources or equipment, an estimate of the quantity of each regulated pollutant emitted over any emission limit and a description of the method used to estimate the emissions.
 - (3) Record actions taken to minimize emissions in accordance with § 63.2450(u) and any corrective actions taken to return the affected unit to its normal or usual manner of operation.
- (m) For each flare subject to the requirements in § 63.2450(e)(5), you must keep records specified in paragraphs (m)(1) through (14) of this section in lieu of the information required in § 63.998(a)(1) of subpart SS.
- (1) Retain records of the output of the monitoring device used to detect the presence of a pilot flame or flare flame as required in § 63.670(b) of subpart CC and the presence of a pilot flame as required in § 63.2450(e)(5)(viii)(D) for a minimum of 2 years. Retain records of each 15-minute block during which there was at least one minute that no pilot flame or flare flame is present when regulated material is routed to a flare for a minimum of 5 years. For a pressure-assisted multi-point flare that uses cross-lighting, retain records of each 15-minute block during which there was at least one minute that no pilot flame is present on each stage when regulated material is routed to a flare for a minimum of 5 years. You may reduce the collected minute-by-minute data to a 15-minute block basis with an indication of whether there was at least one minute where no pilot flame or flare flame was present.
 - (2) Retain records of daily visible emissions observations as specified in paragraphs (m)(2)(i) through (iv) of this section, as applicable, for a minimum of 3 years.
 - (i) To determine when visible emissions observations are required, the record must identify all periods when regulated material is vented to the flare.

- (ii) If visible emissions observations are performed using Method 22 of 40 CFR part 60, appendix A-7, then the record must identify whether the visible emissions observation was performed, the results of each observation, total duration of observed visible emissions, and whether it was a 5-minute or 2-hour observation. Record the date and start time of each visible emissions observation.
 - (iii) If a video surveillance camera is used pursuant to § 63.670(h)(2) of subpart CC, then the record must include all video surveillance images recorded, with time and date stamps.
 - (iv) For each 2 hour period for which visible emissions are observed for more than 5 minutes in 2 consecutive hours, then the record must include the date and start and end time of the 2 hour period and an estimate of the cumulative number of minutes in the 2 hour period for which emissions were visible.
- (3) The 15-minute block average cumulative flows for flare vent gas and, if applicable, total steam, perimeter assist air, and premix assist air specified to be monitored under § 63.670(i) of subpart CC, along with the date and time interval for the 15-minute block. If multiple monitoring locations are used to determine cumulative vent gas flow, total steam, perimeter assist air, and premix assist air, then retain records of the 15-minute block average flows for each monitoring location for a minimum of 2 years, and retain the 15-minute block average cumulative flows that are used in subsequent calculations for a minimum of 5 years. If pressure and temperature monitoring is used, then retain records of the 15-minute block average temperature, pressure, and molecular weight of the flare vent gas or assist gas stream for each measurement location used to determine the 15-minute block average cumulative flows for a minimum of 2 years, and retain the 15-minute block average cumulative flows that are used in subsequent calculations for a minimum of 5 years.
 - (4) The flare vent gas compositions specified to be monitored under § 63.670(j) of subpart CC. Retain records of individual component concentrations from each compositional analysis for a minimum of 2 years. If an NHVvg analyzer is used, retain records of the 15-minute block average values for a minimum of 5 years.
 - (5) Each 15-minute block average operating parameter calculated following the methods specified in § 63.670(k) through (n) of subpart CC, as applicable.
 - (6) All periods during which operating values are outside of the applicable operating limits specified in §§ 63.670(d) through (f) of subpart CC and 63.2450(e)(5)(viii) when regulated material is being routed to the flare.
 - (7) All periods during which you do not perform flare monitoring according to the procedures in § 63.670(g) through (j) of subpart CC.
 - (8) For pressure-assisted multi-point flares, if a stage of burners on the flare uses cross-lighting, then a record of any changes made to the distance between burners.
 - (9) For pressure-assisted multi-point flares, all periods when the pressure monitor(s) on the main flare header show burners are operating outside the range of the manufacturer's specifications. Indicate the date and time for each period, the pressure measurement, the stage(s) and number of burners affected, and the range of manufacturer's specifications.

- (10) For pressure-assisted multi-point flares, all periods when the staging valve position indicator monitoring system indicates a stage of the pressure-assisted multi-point flare should not be in operation and when a stage of the pressure-assisted multi-point flare should be in operation and is not. Indicate the date and time for each period, whether the stage was supposed to be open, but was closed or vice versa, and the stage(s) and number of burners affected.
- (11) Records of periods when there is flow of vent gas to the flare, but when there is no flow of regulated material to the flare, including the start and stop time and dates of periods of no regulated material flow.
- (12) Records when the flow of vent gas exceeds the smokeless capacity of the flare, including start and stop time and dates of the flaring event.
- (13) Records of the root cause analysis and corrective action analysis conducted as required in §§ 63.670(o)(3) of subpart CC and 63.2450(e)(5)(v), including an identification of the affected flare, the date and duration of the event, a statement noting whether the event resulted from the same root cause(s) identified in a previous analysis and either a description of the recommended corrective action(s) or an explanation of why corrective action is not necessary under § 63.670(o)(5)(i) of subpart CC.
- (14) For any corrective action analysis for which implementation of corrective actions are required in § 63.670(o)(5) of subpart CC, a description of the corrective action(s) completed within the first 45 days following the discharge and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates.
- (n) For each flow event from a bypass line subject to the requirements in § 63.2450(e)(6), you must maintain records sufficient to determine whether or not the detected flow included flow requiring control. For each flow event from a bypass line requiring control that is released either directly to the atmosphere or to a control device not meeting the requirements specified in Tables 1 through 7 to this subpart, you must include an estimate of the volume of gas, the concentration of organic HAP in the gas and the resulting emissions of organic HAP that bypassed the control device using process knowledge and engineering estimates.
- (o) For each nonregenerative adsorber and regenerative adsorber that is regenerated offsite subject to the requirements in § 63.2450(e)(7), you must keep the applicable records specified in paragraphs (o)(1) through (3) of this section.
 - (1) Breakthrough limit and bed life established according to § 63.2450(e)(7)(i).
 - (2) Each outlet HAP or TOC concentration measured according to §§ 63.2450(e)(7)(ii) and (e)(7)(iii).
 - (3) Date and time you last replaced the adsorbent.
- (p) For each maintenance vent opening subject to the requirements in § 63.2450(v), you must keep the applicable records specified in paragraphs (p)(1) through (5) of this section.
 - (1) You must maintain standard site procedures used to deinventory equipment for safety purposes (e.g., hot work or vessel entry procedures) to document the procedures used to meet the requirements in § 63.2450(v). The current copy of the procedures must be retained and available on-site at all times. Previous versions of the standard site procedures, as applicable, must be retained for five years.

- (2) If complying with the requirements of § 63.2450(v)(1)(i) and the concentration of the vapor at the time of the vessel opening exceeds 10 percent of its LEL, identification of the maintenance vent, the process units or equipment associated with the maintenance vent, the date of maintenance vent opening, and the concentration of the vapor at the time of the vessel opening.
 - (3) If complying with the requirements of § 63.2450(v)(1)(ii) and either the vessel pressure at the time of the vessel opening exceeds 5 psig or the concentration of the vapor at the time of the active purging was initiated exceeds 10 percent of its LEL, identification of the maintenance vent, the process units or equipment associated with the maintenance vent, the date of maintenance vent opening, the pressure of the vessel or equipment at the time of discharge to the atmosphere and, if applicable, the concentration of the vapors in the equipment when active purging was initiated.
 - (4) If complying with the requirements of § 63.2450(v)(1)(iii), records of the estimating procedures used to determine the total quantity of VOC in the equipment and the type and size limits of equipment that contain less than 50 pounds of VOC at the time of maintenance vent opening. For each maintenance vent opening that contains greater than 50 pounds of VOC for which the deinventory procedures specified in paragraph (p)(1) of this section are not followed or for which the equipment opened exceeds the type and size limits established in the records specified in this paragraph (p)(4), records that identify the maintenance vent, the process units or equipment associated with the maintenance vent, the date of maintenance vent opening, and records used to estimate the total quantity of VOC in the equipment at the time the maintenance vent was opened to the atmosphere.
 - (5) If complying with the requirements of § 63.2450(v)(1)(iv), identification of the maintenance vent, the process units or equipment associated with the maintenance vent, records documenting actions taken to comply with other applicable alternatives and why utilization of this alternative was required, the date of maintenance vent opening, the equipment pressure and concentration of the vapors in the equipment at the time of discharge, an indication of whether active purging was performed and the pressure of the equipment during the installation or removal of the blind if active purging was used, the duration the maintenance vent was open during the blind installation or removal process, and records used to estimate the total quantity of VOC in the equipment at the time the maintenance vent was opened to the atmosphere for each applicable maintenance vent opening.
- (q) For each pressure relief device subject to the pressure release management work practice standards in § 63.2480(e), you must keep the records specified in paragraphs (q)(1) through (3) of this section.
- (1) Records of the prevention measures implemented as required in § 63.2480(e)(3)(ii).
 - (2) Records of the number of releases during each calendar year and, prior to June 3, 2024, the number of those releases for which the root cause was determined to be a *force majeure* event. Keep these records for the current calendar year and the past 5 calendar years.
 - (3) For each release to the atmosphere, you must keep the records specified in paragraphs (q)(3)(i) through (iv) of this section.
 - (i) The start and end time and date of each pressure release to the atmosphere.
 - (ii) Records of any data, assumptions, and calculations used to estimate of the mass quantity of each organic HAP released during the event.

- (iii) Records of the root cause analysis and corrective action analysis conducted as required in § 63.2480(e)(3)(iii), including an identification of the affected facility, a statement noting whether the event resulted from the same root cause(s) identified in a previous analysis and either a description of the recommended corrective action(s) or an explanation of why corrective action is not necessary under § 63.2480(e)(7)(i).
 - (iv) For any corrective action analysis for which implementation of corrective actions are required in § 63.2480(e)(7), a description of the corrective action(s) completed within the first 45 days following the discharge and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates.
- (r) For each heat exchange system, beginning no later than the compliance dates specified in § 63.2445(g), the recordkeeping requirements of § 63.104(f)(1) no longer apply; instead, you must keep records in paragraphs (r)(1) through (4) of this section.
- (1) Monitoring data required by § 63.2490(d) and (e) that indicate a leak, the date the leak was detected, or, if applicable, the basis for determining there is no leak.
 - (2) The dates of efforts to repair leaks.
 - (3) The method or procedures used to confirm repair of a leak and the date the repair was confirmed.
 - (4) Documentation of delay of repair as specified in paragraphs (r)(4)(i) through (iv) of this section.
 - (i) The reason(s) for delaying repair.
 - (ii) A schedule for completing the repair as soon as practical.
 - (iii) The date and concentration or mass emissions rate of the leak as first identified and the results of all subsequent monitoring events during the delay of repair.
 - (iv) An estimate of the potential total hydrocarbon emissions (if you monitor the cooling water for leaks according to § 63.2490(d)(1)) or monitored substance(s) emissions (if you monitor the cooling water for leaks according to § 63.2490(e)) from the leaking heat exchange system or heat exchanger for each required delay of repair monitoring interval following the procedures in paragraphs (r)(4)(iv)(A) through (D) of this section.
 - (A) If you comply with the total strippable hydrocarbon concentration leak action level, as specified in § 63.2490(d)(1)(iv), you must calculate the mass emissions rate by complying with the requirements of § 63.2490(d)(1)(iii)(B) or by determining the mass flow rate of the cooling water at the monitoring location where the leak was detected. If the monitoring location is an individual cooling tower riser, determine the total cooling water mass flow rate to the cooling tower. Cooling water mass flow rates may be determined using direct measurement, pump curves, heat balance calculations, or other engineering methods. If you determine the mass flow rate of the cooling water, calculate the mass emissions rate by converting the stripping gas leak concentration (in ppmv as methane) to an equivalent liquid concentration, in parts per million by weight (ppmw), using equation 7-1 from "Air Stripping Method (Modified El Paso Method) for Determination of Volatile Organic Compound Emissions from Water Sources" (incorporated by reference—see § 63.14) and multiply the equivalent liquid concentration by the mass flow rate of the cooling water.

- (B) For delay of repair monitoring intervals prior to repair of the leak, calculate the potential total hydrocarbon emissions or monitored substance(s) emissions for the leaking heat exchange system or heat exchanger for the monitoring interval by multiplying the mass emissions rate, determined in § 63.2490(d)(1)(iii)(B) or paragraph (r)(4)(iv)(A) or (D) of this section, by the duration of the delay of repair monitoring interval. The duration of the delay of repair monitoring interval is the time period starting at midnight on the day of the previous monitoring event or at midnight on the day the repair would have had to be completed if the repair had not been delayed, whichever is later, and ending at midnight of the day the of the current monitoring event.
 - (C) For delay of repair monitoring intervals ending with a repaired leak, calculate the potential total hydrocarbon emissions or monitored substance(s) emissions for the leaking heat exchange system or heat exchanger for the final delay of repair monitoring interval by multiplying the duration of the final delay of repair monitoring interval by the mass emissions rate determined for the last monitoring event prior to the re-monitoring event used to verify the leak was repaired. The duration of the final delay of repair monitoring interval is the time period starting at midnight of the day of the last monitoring event prior to re-monitoring to verify the leak was repaired and ending at the time of the re-monitoring event that verified that the leak was repaired.
 - (D) If you monitor the cooling water for leaks according to § 63.2490(e), you must calculate the mass emissions rate by determining the mass flow rate of the cooling water at the monitoring location where the leak was detected. Cooling water mass flow rates may be determined using direct measurement, pump curves, heat balance calculations, or other engineering methods. Once determined, multiply the mass flow rate of the cooling water by the concentration of the measured substance(s).
- (s) For process vents and storage tanks in ethylene oxide service subject to the requirements of § 63.2493, you must keep the records specified in paragraphs (s)(1) through (5) of this section in addition to those records specified in paragraph (a) of this section. Records for equipment in ethylene oxide service subject to the requirements of § 63.2493 are specified in paragraph (a) of this section.
- (1) For process vents, include all uncontrolled, undiluted ethylene oxide concentration measurements, and the calculations you used to determine the total uncontrolled ethylene oxide mass emission rate for the sum of all vent gas streams.
 - (2) For storage tanks, records of the concentration of ethylene oxide of the fluid stored in each storage tank.
 - (3) For equipment, records of the percent ethylene oxide content of the process fluid and the method used to determine it.
 - (4) If you vent emissions through a closed-vent system to a non-flare control device, then you must keep records of all periods during which operating values are outside of the applicable operating limits specified in § 63.2493(b)(4) through (6) when regulated material is being routed to the non-flare control device. The record must specify the operating parameter, the applicable limit, and the highest (for maximum operating limits) or lowest (for minimum operating limits) value recorded during the period.
 - (5) For pressure vessels subject to § 63.2493(c), records as specified in paragraphs (s)(5)(i) through (iv) of this section.

- (i) The date of each performance test conducted according to § 63.2493(c)(2).
- (ii) The instrument reading of each performance test conducted according to § 63.2493(c)(2), including the following:
 - (A) Date each defect was detected.
 - (B) Date of the next performance test that shows the instrument reading is less than 500 ppmv.
 - (C) Start and end dates of each period after the date in paragraph (s)(5)(ii)(A) of this section when the pressure vessel was completely empty.
 - (D) Estimated emissions from each defect.
- (t) Any records required to be maintained by this part that are submitted electronically via the EPA's CEDRI may be maintained in electronic format. This ability to maintain electronic copies does not affect the requirement for facilities to make records, data, and reports available upon request to a delegated air agency or the EPA as part of an on-site compliance evaluation.
- (u) Beginning no later than the compliance dates specified in § 63.2445(g), the referenced provisions specified in paragraphs (u)(1) through (8) of this section do not apply when demonstrating compliance with paragraph (a) of this section.
 - (1) Section 63.103(c)(2)(i) of subpart F.
 - (2) Section 63.103(c)(2)(ii) of subpart F.
 - (3) The phrase "start-up, shutdown and malfunction and" from § 63.103(c)(3) of subpart F.
 - (4) The phrase "other than startups, shutdowns, or malfunctions (e.g., a temperature reading of -200 °C on a boiler)," from § 63.152(g)(1)(i) of subpart G.
 - (5) The phrase "other than a startup, shutdown, or malfunction" from § 63.152(g)(1)(ii)(C) of subpart G.
 - (6) The phrase "other than startups, shutdowns, or malfunctions" from § 63.152(g)(1)(iii) of subpart G.
 - (7) The phrase "other than a startup, shutdown, or malfunction" from § 63.152(g)(2)(iii) of subpart G.
 - (8) Section 63.152(g)(2)(iv)(A) of subpart G.

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OTHER REQUIREMENTS AND INFORMATION

§ 63.2535 What compliance options do I have if part of my plant is subject to both this subpart and another subpart?

For any equipment, emission stream, or wastewater stream not subject to § 63.2493 but subject to other provisions of both this subpart and another subpart, you may elect to comply only with the provisions as specified in paragraphs (a) through (l) of this section. You also must identify the subject equipment, emission stream, or wastewater stream, and the provisions with which you will comply, in your notification of compliance status report required by § 63.2520(d).

(a) ***Compliance with other subparts of this part 63.***

- (1) If you have an MCPU that includes a batch process vent that also is part of a CMPU as defined in subparts F and G of this part 63, you must comply with the emission limits; operating limits; work practice standards; and the compliance, monitoring, reporting, and recordkeeping requirements for batch process vents in this subpart, and you must continue to comply with the requirements in subparts F, G, and H of this part 63 that are applicable to the CMPU and associated equipment.
- (2) After the compliance dates specified in § 63.2445, at an offsite reloading or cleaning facility subject to § 63.1253(f), as referenced from § 63.2470(e), compliance with the monitoring, recordkeeping, and reporting provisions of any other subpart of this part 63 constitutes compliance with the monitoring, recordkeeping, and reporting provisions of § 63.1253(f)(7)(ii) or § 63.1253(f)(7)(iii). You must identify in your notification of compliance status report required by § 63.2520(d) the subpart of this part 63 with which the owner or operator of the offsite reloading or cleaning facility complies.

(b) ***Compliance with 40 CFR parts 264 and 265, subparts AA, BB, and/or CC.***

- (1) After the compliance dates specified in § 63.2445, if a control device that you use to comply with this subpart is also subject to monitoring, recordkeeping, and reporting requirements in 40 CFR part 264, subpart AA, BB, or CC; or the monitoring and recordkeeping requirements in 40 CFR part 265, subpart AA, BB, or CC; and you comply with the periodic reporting requirements under 40 CFR part 264, subpart AA, BB, or CC that would apply to the device if your facility had final-permitted status, you may elect to comply either with the monitoring, recordkeeping, and reporting requirements of this subpart; or with the monitoring and recordkeeping requirements in 40 CFR part 264 or 265 and the reporting requirements in 40 CFR part 264, as described in this paragraph (b)(1), which constitute compliance with the monitoring, recordkeeping, and reporting requirements of this subpart. If you elect to comply with the monitoring, recordkeeping, and reporting requirements in 40 CFR parts 264 and/or 265, you must report the information described in § 63.2520(e).
- (2) After the compliance dates specified in § 63.2445, if you have an affected source with equipment that is also subject to 40 CFR part 264, subpart BB, or to 40 CFR part 265, subpart BB, then compliance with the recordkeeping and reporting requirements of 40 CFR parts 264 and/or 265 may be used to comply with the recordkeeping and reporting requirements of this subpart, to the extent that the requirements of 40 CFR parts 264 and/or 265 duplicate the requirements of this subpart.

(c) ***Compliance with 40 CFR part 60, subpart Kb and 40 CFR part 61, subpart Y.*** After the compliance dates specified in § 63.2445, you are in compliance with the provisions of this subpart FFFF for any storage tank that is assigned to an MCPU and that is both controlled with a floating roof and in compliance with the provisions of either 40 CFR part 60, subpart Kb, or 40 CFR part 61, subpart Y. You are in compliance with this subpart FFFF if you have a storage tank with a fixed roof, closed-vent system, and control device in compliance with the provisions of either 40 CFR part 60, subpart Kb, or 40 CFR part 61, subpart Y, except that you must comply with the monitoring, recordkeeping, and reporting requirements in this subpart FFFF. Alternatively, if a storage tank assigned to an MCPU is subject to control under 40 CFR part 60, subpart Kb, or 40 CFR part 61, subpart Y, you may elect to comply only with the requirements for Group 1 storage tanks in this subpart FFFF.

(d) ***Compliance with subpart I, GGG, or MMM of this part.*** After the compliance dates specified in § 63.2445, if you have an affected source with equipment subject to subpart I, GGG, or MMM of this part, you may elect to comply with the provisions of subpart H, GGG, or MMM of this part, respectively, for all such equipment, except the affirmative defense requirements in subparts GGG and MMM no longer apply.

- (e) **Compliance with subpart GGG of this part 63 for wastewater.** After the compliance dates specified in § 63.2445, if you have an affected source subject to this subpart and you have an affected source that generates wastewater streams that meet the applicability thresholds specified in § 63.1256, you may elect to comply with the provisions of this subpart FFFF for all such wastewater streams.
- (f) **Compliance with subpart MMM of this part 63 for wastewater.** After the compliance dates specified in § 63.2445, if you have an affected source subject to this subpart, and you have an affected source that generates wastewater streams that meet the applicability thresholds specified in § 63.1362(d), you may elect to comply with the provisions of this subpart FFFF for all such wastewater streams (except that the 99 percent reduction requirement for streams subject to § 63.1362(d)(10) still applies).
- (g) **Compliance with other regulations for wastewater.** After the compliance dates specified in § 63.2445, if you have a Group 1 wastewater stream that is also subject to provisions in 40 CFR parts 260 through 272, you may elect to determine whether this subpart or 40 CFR parts 260 through 272 contain the more stringent control requirements (e.g., design, operation, and inspection requirements for waste management units; numerical treatment standards; etc.) and the more stringent testing, monitoring, recordkeeping, and reporting requirements. Compliance with provisions of 40 CFR parts 260 through 272 that are determined to be more stringent than the requirements of this subpart constitute compliance with this subpart. For example, provisions of 40 CFR parts 260 through 272 for treatment units that meet the conditions specified in § 63.138(h) constitute compliance with this subpart. You must identify in the notification of compliance status report required by § 63.2520(d) the information and procedures that you used to make any stringency determinations.
- (h) **Compliance with 40 CFR part 60, subpart DDD, III, NNN, or RRR.** After the compliance dates specified in § 63.2445, if you have an MCPU that contains equipment subject to the provisions of this subpart that are also subject to the provisions of 40 CFR part 60, subpart DDD, III, NNN, or RRR, you may elect to apply this subpart to all such equipment in the MCPU. If an MCPU subject to the provisions of this subpart has equipment to which this subpart does not apply but which is subject to a standard in 40 CFR part 60, subpart DDD, III, NNN, or RRR, you may elect to comply with the requirements for Group 1 process vents in this subpart for such equipment. If you elect any of these methods of compliance, you must consider all total organic compounds, minus methane and ethane, in such equipment for purposes of compliance with this subpart, as if they were organic HAP. Compliance with the provisions of this subpart, in the manner described in this paragraph (h), will constitute compliance with 40 CFR part 60, subpart DDD, III, NNN, or RRR, as applicable.
- (i) **Compliance with 40 CFR part 61, subpart BB.**
- (1) After the compliance dates specified in § 63.2445, a Group 1 transfer rack, as defined in § 63.2550, that is also subject to the provisions of 40 CFR part 61, subpart BB, you are required to comply only with the provisions of this subpart.
 - (2) After the compliance dates specified in § 63.2445, a Group 2 transfer rack, as defined in § 63.2550, that is also subject to the provisions of 40 CFR part 61, subpart BB, is required to comply with the provisions of either paragraph (l)(2)(i) or (ii) of this section.
 - (i) If the transfer rack is subject to the control requirements specified in § 61.302 of 40 CFR part 61, subpart BB, then you may elect to comply with either the requirements of 40 CFR part 61, subpart BB, or the requirements for Group 1 transfer racks under this subpart FFFF.

- (ii) If the transfer rack is subject only to reporting and recordkeeping requirements under 40 CFR part 61, subpart BB, then you are required to comply only with the reporting and recordkeeping requirements specified in this subpart for Group 2 transfer racks, and you are exempt from the reporting and recordkeeping requirements in 40 CFR part 61, subpart BB.
- (j) **Compliance with 40 CFR part 61, subpart FF.** After the compliance date specified in § 63.2445, for a Group 1 or Group 2 wastewater stream that is also subject to the provisions of 40 CFR 61.342(c) through (h), and is not exempt under 40 CFR 61.342(c)(2) or (3), you may elect to comply only with the requirements for Group 1 wastewater streams in this subpart FFFF. If a Group 2 wastewater stream is exempted from 40 CFR 61.342(c)(1) under 40 CFR 61.342(c)(2) or (3), then you are required to comply only with the reporting and recordkeeping requirements specified in this subpart for Group 2 wastewater streams, and you are exempt from the requirements in 40 CFR part 61, subpart FF.
- (k) **Compliance with 40 CFR part 60, subpart VV or VVa, and 40 CFR part 61, subpart V.** Except as specified in paragraphs (k)(1) and (2) of this section, after the compliance date specified in § 63.2445, if you have an affected source with equipment that is also subject to the requirements of 40 CFR part 60, subpart VV or VVa, or 40 CFR part 61, subpart V, you may elect to apply this subpart to all such equipment. After the compliance date specified in § 63.2445, if you have an affected source with equipment to which this subpart does not apply, but which is subject to the requirements of 40 CFR part 60, subpart VV or VVa, or 40 CFR part 61, subpart V, you may elect to apply this subpart to all such equipment. If you elect either of the methods of compliance in this paragraph (k), you must consider all total organic compounds, minus methane and ethane, in such equipment for purposes of compliance with this subpart, as if they were organic HAP. Compliance with the provisions of this subpart, in the manner described in this paragraph (k), will constitute compliance with 40 CFR part 60, subpart VV or VVa, and 40 CFR part 61, subpart V, as applicable.
 - (1) The provision in § 63.2480(b)(4) does not apply to connectors in gas/vapor and light liquid service that are subject to monitoring under 40 CFR 60.482-11a if complying with the compliance option in this paragraph (k).
 - (2) Beginning no later than the compliance dates specified in § 63.2445(g), equipment that must be controlled according to this subpart and subpart VVa of 40 CFR part 60 is required only to comply with the equipment leak requirements of this subpart, except you must also comply with the calibration drift assessment requirements specified at 40 CFR 60.485a(b)(2) if they are required to do so in subpart VVa of 40 CFR part 60. When complying with the calibration drift assessment requirements at 40 CFR 60.485a(b)(2), the requirement at 40 CFR 60.486a(e)(8)(v) to record the instrument reading for each scale used applies.
- (l) **Applicability of process units included in a process unit group.** You may elect to develop and comply with the requirements for PUG in accordance with paragraphs (l)(1) through (3) of this section.
 - (1) **Procedures to create process unit groups.** Develop and document changes in a PUG in accordance with the procedures specified in paragraphs (l)(1)(i) through (v) of this section.
 - (i) Initially, identify an MCPU that is created from nondedicated equipment that will operate on or after November 10, 2003 and identify all processing equipment that is part of this MCPU, based on descriptions in operating scenarios.

- (ii) Add to the group any other nondedicated MCPU and other nondedicated process units expected to be operated in the 5 years after the date specified in paragraph (l)(1)(i) of this section, provided they satisfy the criteria specified in paragraphs (l)(1)(ii)(A) through (C) of this section. Also identify all of the processing equipment used for each process unit based on information from operating scenarios and other applicable documentation.
 - (A) Each process unit that is added to a group must have some processing equipment that is also part of one or more process units in the group.
 - (B) No process unit may be part of more than one PUG.
 - (C) The processing equipment used to satisfy the requirement of paragraph (l)(1)(ii)(A) of this section may not be a storage tank or control device.
 - (iii) The initial PUG consists of all of the processing equipment for the process units identified in paragraphs (l)(1)(i) and (ii) of this section. As an alternative to the procedures specified in paragraphs (l)(1)(i) and (ii) of this section, you may use a PUG that was developed in accordance with § 63.1360(h) as your initial PUG.
 - (iv) Add process units developed in the future in accordance with the conditions specified in paragraphs (l)(1)(ii)(A) and (B) of this section.
 - (v) Maintain records that describe the process units in the initial PUG, the procedure used to create the PUG, and subsequent changes to each PUG as specified in § 63.2525(i). Submit the records in reports as specified in § 63.2520(d)(2)(ix) and (e)(8).
- (2) **Determine primary product.** You must determine the primary product of each PUG created in paragraph (l)(1) of this section according to the procedures specified in paragraphs (l)(2)(i) through (iv) of this section.
- (i) The primary product is the type of product (e.g., organic chemicals subject to § 63.2435(b)(1), pharmaceutical products subject to § 63.1250, or pesticide active ingredients subject to § 63.1360) expected to be produced for the greatest operating time in the 5-year period specified in paragraph (l)(1)(ii) of this section.
 - (ii) If the PUG produces multiple types of products equally based on operating time, then the primary product is the type of product with the greatest production on a mass basis over the 5-year period specified in paragraph (l)(1)(ii) of this section.
 - (iii) At a minimum, you must redetermine the primary product of the PUG following the procedure specified in paragraphs (l)(2)(i) and (ii) of this section every 5 years.
 - (iv) You must record the calculation of the initial primary product determination as specified in § 63.2525(i)(3) and report the results in the notification of compliance status report as specified in § 63.2520(d)(8)(ix). You must record the calculation of each redetermination of the primary product as specified in § 63.2525(i)(5) and report the calculation in a compliance report submitted no later than the report covering the period for the end of the 5th year after cessation of production of the previous primary product, as specified in § 63.2520(e)(8).
- (3) **Compliance requirements.**

- (i) If the primary product of the PUG is determined according to paragraph (l)(2) of this section to be material described in § 63.2435(b)(1), then you must comply with this subpart for each MCPU in the PUG. You may also elect to comply with this subpart for all other process units in the PUG, which constitutes compliance with other part 63 rules.
- (ii) If the primary product of the PUG is determined according to paragraph (l)(2) of this section to be material not described in § 63.2435(b)(1), then you must comply with paragraph (l)(3)(ii)(A), (B), or (C) of this section, as applicable.
 - (A) If the primary product is subject to subpart GGG of this part 63, then comply with the requirements of subpart GGG for each MCPU in the PUG.
 - (B) If the primary product is subject to subpart MMM of this part 63, then comply with the requirements of subpart MMM for each MCPU in the PUG.
 - (C) If the primary product is subject to any subpart in this part 63 other than subpart GGG or subpart MMM, then comply with the requirements of this subpart for each MCPU in the PUG.
- (iii) The requirements for new and reconstructed sources in the alternative subpart apply to all MCPU in the PUG if and only if the affected source under the alternative subpart meets the requirements for construction or reconstruction.

(m) *Overlap of this subpart with other regulations for flares.*

- (1) Beginning no later than the compliance dates specified in § 63.2445(g), flares that control ethylene oxide emissions from affected sources in ethylene oxide service as defined in § 63.2550 or are used to control emissions from MCPUs that produce olefins and polyolefins, subject to the provisions of 40 CFR 60.18 or 63.11, and used as a control device for an emission point subject to the emission limits and work practice standards in Tables 1, 2, 4 or 5 to this subpart are required to comply only with the provisions specified in § 63.2450(e)(5). At any time before the compliance dates specified in § 63.2445(g), flares that are subject to the provisions of 40 CFR 60.18 or 63.11 and elect to comply with the requirements in § 63.2450(e)(5) are required to comply only with the provisions specified in this subpart. For purposes of compliance with this paragraph (m), “MCPUs that produces olefins or polyolefins” includes only those MCPUs that manufacture ethylene, propylene, polyethylene, and/or polypropylene as a product. By-products and impurities as defined in § 63.101, as well as wastes and trace contaminants, are not considered products.
- (2) Beginning no later than the compliance dates specified in § 63.2445(g), flares subject to § 63.987 and used as a control device for an emission point subject to the emission limits and work practice standards in Tables 1, 2, 4 or 5 to this subpart are only required to comply with § 63.2450(e)(5).
- (3) Beginning no later than the compliance dates specified in § 63.2445(g), flares subject to the requirements in subpart CC of this part and used as a control device for an emission point subject to the emission limits and work practice standards in Tables 1, 2, 4 or 5 to this subpart are only required to comply with the flare requirements in subpart CC of this part. This paragraph (m)(3) does not apply to multi-point pressure assisted flares.

[68 FR 63888, Nov. 10, 2003, as amended at 71 FR 40337, July 14, 2006; 85 FR 49158, Aug. 12, 2020]

§ 63.2540 What parts of the General Provisions apply to me?

Table 12 to this subpart shows which parts of the General Provisions in §§ 63.1 through 63.15 apply to you.

§ 63.2545 Who implements and enforces this subpart?

- (a) This subpart can be implemented and enforced by us, the U.S. Environmental Protection Agency (U.S. EPA), or a delegated authority such as your State, local, or tribal agency. If the U.S. EPA Administrator has delegated authority to your State, local, or tribal agency, then that agency also has the authority to implement and enforce this subpart. You should contact your U.S. EPA Regional Office to find out if this subpart is delegated to your State, local, or tribal agency.
- (b) In delegating implementation and enforcement authority of this subpart to a state, local, or tribal agency under subpart E of this part, the authorities contained in paragraphs (b)(1) through (5) of this section are retained by the Administrator of U.S. EPA and are not delegated to the state, local, or tribal agency.
 - (1) Approval of alternatives to the non-opacity emission limits and work practice standards in § 63.2450(a) under § 63.6(g).
 - (2) Approval of major alternatives to test methods under § 63.7(e)(2)(ii) and (f) and as defined in § 63.90.
 - (3) Approval of major alternatives to monitoring under § 63.8(f) and as defined in § 63.90.
 - (4) Approval of major alternatives to recordkeeping and reporting under § 63.10(f) and as defined in § 63.90.
 - (5) Approval of an alternative to any electronic reporting to the EPA required by this subpart.

[68 FR 63888, Nov. 10, 2003, as amended at 85 FR 49159, Aug. 12, 2020]

§ 63.2550 What definitions apply to this subpart?

- (a) For an affected source complying with the requirements in subpart SS of this part 63, the terms used in this subpart and in subpart SS of this part 63 have the meaning given them in § 63.981, except as specified in §§ 63.2450(k)(2) and (m), 63.2470(c)(2), 63.2475(b), and paragraph (i) of this section.
- (b) For an affected source complying with the requirements in 40 CFR part 65, subpart F, the terms used in this subpart and in 40 CFR part 65, subpart F have the meaning given to them in § 65.2.
- (c) For an affected source complying with the requirements in subpart UU of this part 63, the terms used in this subpart and in subpart UU of this part 63 have the meaning given them in § 63.1020.
- (d) For an affected source complying with the requirements in subpart WW of this part 63, the terms used in this subpart and subpart WW of this part 63 have the meaning given them in § 63.1061, except as specified in §§ 63.2450(m), 63.2470(c)(2), and paragraph (i) of this section.
- (e) For an affected source complying with the requirements in §§ 63.132 through 63.149, the terms used in this subpart and §§ 63.132 through 63.149 have the meaning given them in §§ 63.101 and 63.111, except as specified in § 63.2450(m) and paragraph (i) of this section.
- (f) For an affected source complying with the requirements in §§ 63.104 and 63.105, the terms used in this subpart and in §§ 63.104 and 63.105 of this subpart have the meaning given them in § 63.101, except as specified in §§ 63.2450(m), 63.2490(b), and paragraph (i) of this section.

- (g) For an affected source complying with requirements in §§ 63.1253, 63.1257, and 63.1258, the terms used in this subpart and in §§ 63.1253, 63.1257, and 63.1258 have the meaning given them in § 63.1251, except as specified in § 63.2450(m) and paragraph (i) of this section.
- (h) For an affected source complying with the requirements in 40 CFR part 65, subpart F, the terms used in this subpart and in 40 CFR part 65, subpart F, have the meaning given them in 40 CFR 65.2.
- (i) All other terms used in this subpart are defined in the Clean Air Act (CAA), in 40 CFR 63.2, and in this paragraph (i). If a term is defined in § 63.2, § 63.101, § 63.111, § 63.981, § 63.1020, § 63.1061, § 63.1251, or § 65.2 and in this paragraph (i), the definition in this paragraph (i) applies for the purposes of this subpart.

Ancillary activities means boilers and incinerators (not used to comply with the emission limits in Tables 1 through 7 to this subpart), chillers and refrigeration systems, and other equipment and activities that are not directly involved (*i.e.*, they operate within a closed system and materials are not combined with process fluids) in the processing of raw materials or the manufacturing of a product or isolated intermediate.

Batch operation means a noncontinuous operation involving intermittent or discontinuous feed into equipment, and, in general, involves the emptying of the equipment after the operation ceases and prior to beginning a new operation. Addition of raw material and withdrawal of product do not occur simultaneously in a batch operation.

Batch process vent means a vent from a unit operation or vents from multiple unit operations within a process that are manifolded together into a common header, through which a HAP-containing gas stream is, or has the potential to be, released to the atmosphere. Examples of batch process vents include, but are not limited to, vents on condensers used for product recovery, reactors, filters, centrifuges, and process tanks. The following are not batch process vents for the purposes of this subpart:

- (1) Continuous process vents;
- (2) Bottoms receivers;
- (3) Surge control vessels;
- (4) Gaseous streams routed to a fuel gas system(s) unless on and after August 12, 2023, the fuel gas system(s) supplies a flare of which 50 percent or more of the fuel gas burned in the flare is derived from an MCPU that has processes and/or equipment in ethylene oxide service, or produces olefins or polyolefins;
- (5) Vents on storage tanks, wastewater emission sources, or pieces of equipment subject to the emission limits and work practice standards in Tables 4, 6, and 7 to this subpart;
- (6) Drums, pails, and totes;
- (7) Flexible elephant trunk systems that draw ambient air (*i.e.*, the system is not ducted, piped, or otherwise connected to the unit operations) away from operators when vessels are opened; and
- (8) Except for batch process vents in ethylene oxide service, emission streams from emission episodes that are undiluted and uncontrolled containing less than 50 ppmv HAP are not part of any batch process vent. A vent from a unit operation, or a vent from multiple unit operations that are manifolded together, from which total uncontrolled HAP emissions are less than 200 lb/yr is not a batch process vent; emissions for all emission episodes associated with the unit operation(s) must be included in the determination of the total mass emitted. The HAP concentration or mass

emission rate may be determined using any of the following: Process knowledge that no HAP are present in the emission stream; an engineering assessment as discussed in § 63.1257(d)(2)(ii), except that you do not need to demonstrate that the equations in § 63.1257(d)(2)(i) do not apply, and the precompliance reporting requirements specified in § 63.1257(d)(2)(ii)(E) do not apply for the purposes of this demonstration; equations specified in § 63.1257(d)(2)(i), as applicable; test data using Method 18 of 40 CFR part 60, appendix A; or any other test method that has been validated according to the procedures in EPA Method 301 of appendix A to this part.

Bench-scale process means a process (other than a research and development facility) that is operated on a small scale, such as one capable of being located on a laboratory bench top. This bench-scale equipment will typically include reagent feed vessels, a small reactor and associated product separator, recovery and holding equipment. These processes are only capable of producing small quantities of product.

Biofilter means an enclosed control system such as a tank or series of tanks with a fixed roof that contact emissions with a solid media (such as bark) and use microbiological activity to transform organic pollutants in a process vent stream to innocuous compounds such as carbon dioxide, water, and inorganic salts. Wastewater treatment processes such as aeration lagoons or activated sludge systems are not considered to be biofilters.

Bottoms receiver means a tank that collects bottoms from continuous distillation before the stream is sent for storage or for further downstream processing.

Breakthrough means the time when the level of HAP or TOC, measured at the outlet of the first bed, has been detected is at the highest concentration allowed to be discharged from the adsorber system and indicates that the adsorber bed should be replaced.

Construction means the onsite fabrication, erection, or installation of an affected source or MCPU. Addition of new equipment to an MCPU subject to existing source standards does not constitute construction, but it may constitute reconstruction of the affected source or MCPU if it satisfies the definition of reconstruction in § 63.2.

Consumption means the quantity of all HAP raw materials entering a process in excess of the theoretical amount used as reactant, assuming 100 percent stoichiometric conversion. The raw materials include reactants, solvents, and any other additives. If a HAP is generated in the process as well as added as a raw material, consumption includes the quantity generated in the process.

Continuous operation means any operation that is not a batch operation.

Continuous process vent means the point of discharge to the atmosphere (or the point of entry into a control device, if any) of a gas stream if the gas stream has the characteristics specified in § 63.107(b) through (h), or meets the criteria specified in § 63.107(i), except:

- (1) The reference in § 63.107(e) to a chemical manufacturing process unit that meets the criteria of § 63.100(b) means an MCPU that meets the criteria of § 63.2435(b);
- (2) The reference in § 63.107(h)(4) to § 63.113 means Table 1 to this subpart;
- (3) The references in § 63.107(h)(7) to §§ 63.119 and 63.126 mean tables 4 and 5 to this subpart; and
- (4) For the purposes of § 63.2455, all references to the characteristics of a process vent (e.g., flowrate, total HAP concentration, or TRE index value) mean the characteristics of the gas stream.
- (5) The reference to "total organic HAP" in § 63.107(d) means "total HAP" for the purposes of this subpart FFFF.

- (6) The references to an "air oxidation reactor, distillation unit, or reactor" in § 63.107 mean any continuous operation for the purposes of this subpart.
- (7) A separate determination is required for the emissions from each MCPU, even if emission streams from two or more MCPU are combined prior to discharge to the atmosphere or to a control device.
- (8) On and after August 12, 2023, § 63.107(h)(3) applies unless the fuel gas system supplies a flare of which 50 percent or more of the fuel gas burned in the flare is derived from an MCPU that has processes and/or equipment in ethylene oxide service, or produces olefins or polyolefins.
- (9) On and after August 12, 2023, § 63.107(h)(9) no longer applies.
- (10) On and after August 12, 2023, § 63.107(i) no longer applies. Instead, a process vent is the point of discharge to the atmosphere (or the point of entry into a control device, if any) of a gas stream if the gas stream meets the criteria specified in this paragraph. The gas stream would meet the characteristics specified in § 63.107(b) through (g) of subpart F, but, for purposes of avoiding applicability, has been deliberately interrupted, temporarily liquefied, routed through any item of equipment for no process purpose, or disposed of in a flare that does not meet the criteria in § 63.11(b) of subpart A or § 63.2450(e)(5) as applicable, or an incinerator that does not reduce emissions of organic HAP by 98 percent or to a concentration of 20 parts per million by volume, whichever is less stringent.
- (11) Section 63.107(d) does not apply to continuous process vents in ethylene oxide service.

Dedicated MCPU means an MCPU that consists of equipment that is used exclusively for one process, except that storage tanks assigned to the process according to the procedures in § 63.2435(d) also may be shared by other processes.

Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

- (1) Fails to meet any requirement or obligation established by this subpart including, but not limited to, any emission limit, operating limit, or work practice standard; or
- (2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or
- (3) Before August 12, 2023, fails to meet any emission limit, operating limit, or work practice standard in this subpart during startup, shutdown, or malfunction, regardless of whether or not such failure is permitted by this subpart. On and after August 12, 2023, this paragraph (3) no longer applies.

Emission point means each continuous process vent, batch process vent, storage tank, transfer rack, and wastewater stream.

Energetics means propellants, explosives, and pyrotechnics and include materials listed at 49 CFR 172.101 as Hazard Class I Hazardous Materials, Divisions 1.1 through 1.6.

Equipment means each pump, compressor, agitator, pressure relief device, sampling connection system, open-ended valve or line, valve, connector, and instrumentation system in organic HAP service; and any control devices or systems used to comply with Table 6 to this subpart.

Excess emissions means emissions greater than those allowed by the emission limit.

Family of materials means a grouping of materials with the same basic composition or the same basic end use or functionality produced using the same basic feedstocks with essentially identical HAP emission profiles (primary constituent and relative magnitude on a pound per product basis) and manufacturing equipment configuration. Examples of families of materials include multiple grades of the same product or different variations of a product (e.g., blue, black, and red resins).

Force majeure event means a release of HAP, either directly to the atmosphere from a pressure relief device or discharged via a flare, that is demonstrated to the satisfaction of the Administrator to result from an event beyond the owner or operator's control, such as natural disasters; acts of war or terrorism; loss of a utility external to the MCPU (e.g., external power curtailment), excluding power curtailment due to an interruptible service agreement; and fire or explosion originating at a near or adjoining facility outside of the miscellaneous organic chemical manufacturing process unit that impacts the miscellaneous organic chemical manufacturing process unit's ability to operate.

Group 1 batch process vent means each of the batch process vents in a process for which the collective uncontrolled organic HAP emissions from all of the batch process vents are greater than or equal to 10,000 lb/yr at an existing source or greater than or equal to 3,000 lb/yr at a new source.

Group 2 batch process vent means each batch process vent that does not meet the definition of Group 1 batch process vent.

Group 1 continuous process vent means a continuous process vent for which the flow rate is greater than or equal to 0.005 standard cubic meter per minute, and the total resource effectiveness index value, calculated according to § 63.2455(b), is less than or equal to 1.9 at an existing source and less than or equal to 5.0 at a new source.

Group 2 continuous process vent means a continuous process vent that does not meet the definition of a Group 1 continuous process vent.

Group 1 storage tank means a storage tank with a capacity greater than or equal to 10,000 gal storing material that has a maximum true vapor pressure of total HAP greater than or equal to 6.9 kilopascals at an existing source or greater than or equal to 0.69 kilopascals at a new source.

Group 2 storage tank means a storage tank that does not meet the definition of a Group 1 storage tank.

Group 1 transfer rack means a transfer rack that loads more than 0.65 million liters/year of liquids that contain organic HAP with a rack-weighted average partial pressure, as defined in § 63.111, greater than or equal to 1.5 pound per square inch absolute.

Group 2 transfer rack means a transfer rack that does not meet the definition of a Group 1 transfer rack.

Group 1 wastewater stream means a wastewater stream consisting of process wastewater at an existing or new source that meets the criteria for Group 1 status in § 63.2485(c) for compounds in Tables 8 and 9 to this subpart and/or a wastewater stream consisting of process wastewater at a new source that meets the criteria for Group 1 status in § 63.132(d) for compounds in Table 8 to subpart G of this part 63.

Group 2 wastewater stream means any process wastewater stream that does not meet the definition of a Group 1 wastewater stream.

Halogen atoms mean chlorine and fluorine.

Halogenated vent stream means a vent stream determined to have a mass emission rate of halogen atoms contained in organic compounds of 0.45 kilograms per hour or greater determined by the procedures presented in § 63.115(d)(2)(v).

HAP metals means the metal portion of antimony compounds, arsenic compounds, beryllium compounds, cadmium compounds, chromium compounds, cobalt compounds, lead compounds, manganese compounds, mercury compounds, nickel compounds, and selenium compounds.

Heat exchange system means a device or collection of devices used to transfer heat from process fluids to water without intentional direct contact of the process fluid with the water (i.e., non-contact heat exchanger) and to transport and/or cool the water in a closed-loop recirculation system (cooling tower system) or a once-through system (e.g., river or pond water). For closed-loop recirculation systems, the heat exchange system consists of a cooling tower, all miscellaneous organic chemical manufacturing process unit heat exchangers that are in organic HAP service, as defined in this subpart, serviced by that cooling tower, and all water lines to and from these miscellaneous organic chemical manufacturing process unit heat exchangers. For once-through systems, the heat exchange system consists of all heat exchangers that are in organic HAP service, as defined in this subpart, servicing an individual miscellaneous organic chemical manufacturing process unit and all water lines to and from these heat exchangers. Sample coolers or pump seal coolers are not considered heat exchangers for the purpose of this definition and are not part of the heat exchange system. Intentional direct contact with process fluids results in the formation of a wastewater.

Hydrogen halide and halogen HAP means hydrogen chloride, hydrogen fluoride, and chlorine.

In ethylene oxide service means the following:

- (1) For equipment leaks, any equipment that contains or contacts a fluid (liquid or gas) that is at least 0.1 percent by weight of ethylene oxide. If information exists that suggests ethylene oxide could be present in equipment, the equipment is considered to be "in ethylene oxide service" unless sampling and analysis is performed as specified in § 63.2492 to demonstrate that the equipment does not meet the definition of being "in ethylene oxide service". Examples of information that could suggest ethylene oxide could be present in equipment, include calculations based on safety data sheets, material balances, process stoichiometry, or previous test results provided the results are still relevant to the current operating conditions.
- (2) For process vents, each batch and continuous process vent in a process that, when uncontrolled, contains a concentration of greater than or equal to 1 ppmv undiluted ethylene oxide, and when combined, the sum of all these process vents would emit uncontrolled ethylene oxide emissions greater than or equal to 5 lb/yr (2.27 kg/yr). If information exists that suggests ethylene oxide could be present in a batch or continuous process vent, then the batch or continuous process vent is considered to be "in ethylene oxide service" unless an analysis is performed as specified in § 63.2492 to demonstrate that the batch or continuous process vent does not meet the definition of being "in ethylene oxide service". Examples of information that could suggest ethylene oxide could be present in a batch or continuous process vent, include calculations based on safety data sheets, material balances, process stoichiometry, or previous test results provided the results are still relevant to the current operating conditions.
- (3) For storage tanks, storage tanks of any capacity and vapor pressure storing a liquid that is at least 0.1 percent by weight of ethylene oxide. If knowledge exists that suggests ethylene oxide could be present in a storage tank, then the storage tank is considered to be "in ethylene oxide service" unless the procedures specified in § 63.2492 are performed to demonstrate that the storage tank does not meet the definition of being "in ethylene oxide service". The exemptions for "vessels storing organic liquids that contain HAP only as impurities" and "pressure vessels designed to operate in excess of 204.9 kilopascals and without emissions to the atmosphere" listed in the definition of "storage tank" in this section do not apply for storage tanks that may be in ethylene oxide service. Examples of

information that could suggest ethylene oxide could be present in a storage tank, include calculations based on safety data sheets, material balances, process stoichiometry, or previous test results provided the results are still relevant to the current operating conditions.

In ethylene oxide service means the following:

- (1) For equipment leaks, any equipment that contains or contacts a fluid (liquid or gas) that is at least 0.1 percent by weight of ethylene oxide. If information exists that suggests ethylene oxide could be present in equipment, the equipment is considered to be "in ethylene oxide service" unless sampling and analysis is performed as specified in § 63.2492 to demonstrate that the equipment does not meet the definition of being "in ethylene oxide service". Examples of information that could suggest ethylene oxide could be present in equipment, include calculations based on safety data sheets, material balances, process stoichiometry, or previous test results provided the results are still relevant to the current operating conditions.
- (2) For process vents, each batch and continuous process vent in a process that, when uncontrolled, contains a concentration of greater than or equal to 1 ppmv undiluted ethylene oxide, and when combined, the sum of all these process vents would emit uncontrolled ethylene oxide emissions greater than or equal to 5 lb/yr (2.27 kg/yr). If information exists that suggests ethylene oxide could be present in a batch or continuous process vent, then the batch or continuous process vent is considered to be "in ethylene oxide service" unless an analysis is performed as specified in § 63.2492 to demonstrate that the batch or continuous process vent does not meet the definition of being "in ethylene oxide service". Examples of information that could suggest ethylene oxide could be present in a batch or continuous process vent, include calculations based on safety data sheets, material balances, process stoichiometry, or previous test results provided the results are still relevant to the current operating conditions.
- (3) For storage tanks, storage tanks of any capacity and vapor pressure storing a liquid that is at least 0.1 percent by weight of ethylene oxide. If knowledge exists that suggests ethylene oxide could be present in a storage tank, then the storage tank is considered to be "in ethylene oxide service" unless the procedures specified in § 63.2492 are performed to demonstrate that the storage tank does not meet the definition of being "in ethylene oxide service". The exemptions for "vessels storing organic liquids that contain HAP only as impurities" and "pressure vessels designed to operate in excess of 204.9 kilopascals and without emissions to the atmosphere" listed in the definition of "storage tank" in this section do not apply for storage tanks that may be in ethylene oxide service. Examples of information that could suggest ethylene oxide could be present in a storage tank, include calculations based on safety data sheets, material balances, process stoichiometry, or previous test results provided the results are still relevant to the current operating conditions.

In organic HAP service means that a piece of equipment either contains or contacts a fluid (liquid or gas) that is at least 5 percent by weight of total organic HAP as determined according to the provisions of § 63.180(d). The provisions of § 63.180(d) also specify how to determine that a piece of equipment is not in organic HAP service.

Isolated intermediate means a product of a process that is stored before subsequent processing. An isolated intermediate is usually a product of a chemical synthesis, fermentation, or biological extraction process. Storage of an isolated intermediate marks the end of a process. Storage occurs at any time the intermediate is placed in equipment used solely for storage. The storage equipment is part of the MCPU that produces the isolated intermediate and is not assigned as specified in § 63.2435(d).

Large control device means a control device that controls total HAP emissions of greater than or equal to 10 tpy, before control.

Loading rack means a single system used to fill tank trucks and railcars at a single geographic site. Loading equipment and operations that are physically separate (*i.e.*, do not share common piping, valves, and other equipment) are considered to be separate loading racks.

Maintenance wastewater means wastewater generated by the draining of process fluid from components in the MCPU into an individual drain system in preparation for or during maintenance activities. Maintenance wastewater can be generated during planned and unplanned shutdowns and during periods not associated with a shutdown. Examples of activities that can generate maintenance wastewater include descaling of heat exchanger tubing bundles, cleaning of distillation column traps, draining of pumps into an individual drain system, and draining of portions of the MCPU for repair. Wastewater from routine cleaning operations occurring as part of batch operations is not considered maintenance wastewater.

Maximum true vapor pressure has the meaning given in § 63.111, except that it applies to all HAP rather than only organic HAP.

Miscellaneous organic chemical manufacturing process means all equipment which collectively function to produce a product or isolated intermediate that are materials described in § 63.2435(b). For the purposes of this subpart, process includes any, all or a combination of reaction, recovery, separation, purification, or other activity, operation, manufacture, or treatment which are used to produce a product or isolated intermediate. A process is also defined by the following:

- (1) Routine cleaning operations conducted as part of batch operations are considered part of the process;
- (2) Each nondedicated solvent recovery operation is considered a single process;
- (3) Each nondedicated formulation operation is considered a single process that is used to formulate numerous materials and/or products;
- (4) Quality assurance/quality control laboratories are not considered part of any process; and
- (5) Ancillary activities are not considered a process or part of any process.
- (6) The end of a process that produces a solid material is either up to and including the dryer or extruder, or for a polymer production process without a dryer or extruder, it is up to and including the die plate or solid-state reactor, except in two cases. If the dryer, extruder, die plate, or solid-state reactor is followed by an operation that is designed and operated to remove HAP solvent or residual HAP monomer from the solid, then the solvent removal operation is the last step in the process. If the dried solid is diluted or mixed with a HAP-based solvent, then the solvent removal operation is the last step in the process.

Nondedicated solvent recovery operation means a distillation unit or other purification equipment that receives used solvent from more than one MCPU.

Nonstandard batch means a batch process that is operated outside of the range of operating conditions that are documented in an existing operating scenario but is still a reasonably anticipated event. For example, a nonstandard batch occurs when additional processing or processing at different operating conditions must be conducted to produce a product that is normally produced under the conditions described by the standard batch. A nonstandard batch may be necessary as a result of a malfunction, but it is not itself a malfunction.

On-site or on site means, with respect to records required to be maintained by this subpart or required by another subpart referenced by this subpart, that records are stored at a location within a major source which encompasses the affected source. On-site includes, but is not limited to, storage at the affected source or MCPU to which the records pertain, or storage in central files elsewhere at the major source.

Operating scenario means, for the purposes of reporting and recordkeeping, any specific operation of an MCPU as described by records specified in § 63.2525(b).

Organic group means structures that contain primarily carbon, hydrogen, and oxygen atoms.

Organic peroxides means organic compounds containing the bivalent -o-o-structure which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.

Point of determination means each point where process wastewater exits the MCPU or control device.

Note to definition for point of determination: The regulation allows determination of the characteristics of a wastewater stream: At the point of determination; or downstream of the point of determination if corrections are made for changes in flow rate and annual average concentration of soluble HAP and partially soluble HAP compounds as determined according to procedures in § 63.144 of subpart G in this part 63. Such changes include losses by air emissions; reduction of annual average concentration or changes in flow rate by mixing with other water or wastewater streams; and reduction in flow rate or annual average concentration by treating or otherwise handling the wastewater stream to remove or destroy HAP.

Predominant HAP means as used in calibrating an analyzer, the single organic HAP that constitutes the largest percentage of the total organic HAP in the analyzed gas stream, by volume.

Pressure release means the emission of materials resulting from the system pressure being greater than the set pressure of the pressure relief device. This release can be one release or a series of releases over a short time period.

Pressure relief device means a valve, rupture disk, or similar device used only to release an unplanned, nonroutine discharge of gas from process equipment in order to avoid safety hazards or equipment damage. A pressure relief device discharge can result from an operator error, a malfunction such as a power failure or equipment failure, or other unexpected cause. Such devices include conventional, spring-actuated relief valves, balanced bellows relief valves, pilot-operated relief valves, rupture disks, and breaking, buckling, or shearing pin devices. Devices that are actuated either by a pressure of less than or equal to 2.5 pounds per square inch gauge or by a vacuum are not pressure relief devices.

Pressure vessel means a storage vessel that is used to store liquids or gases and is designed not to vent to the atmosphere as a result of compression of the vapor headspace in the pressure vessel during filling of the pressure vessel to its design capacity.

Process condenser means a condenser whose primary purpose is to recover material as an integral part of an MCPU. All condensers recovering condensate from an MCPU at or above the boiling point or all condensers in line prior to a vacuum source are considered process condensers. Typically, a primary condenser or condensers in series are considered to be integral to the MCPU if they are capable of and

normally used for the purpose of recovering chemicals for fuel value (i.e., net positive heating value), use, reuse or for sale for fuel value, use, or reuse. This definition does not apply to a condenser that is used to remove materials that would hinder performance of a downstream recovery device as follows:

- (1) To remove water vapor that would cause icing in a downstream condenser, or
- (2) To remove water vapor that would negatively affect the adsorption capacity of carbon in a downstream carbon adsorber, or
- (3) To remove high molecular weight organic compounds or other organic compounds that would be difficult to remove during regeneration of a downstream carbon adsorber.

Process tank means a tank or vessel that is used within a process to collect material discharged from a feedstock storage tank or equipment within the process before the material is transferred to other equipment within the process or a product storage tank. A process tank has emissions that are related to the characteristics of the batch cycle, and it does not accumulate product over multiple batches. Surge control vessels and bottoms receivers are not process tanks.

Production-indexed HAP consumption factor (HAP factor) means the result of dividing the annual consumption of total HAP by the annual production rate, per process.

Production-indexed VOC consumption factor (VOC factor) means the result of dividing the annual consumption of total VOC by the annual production rate, per process.

Quaternary ammonium compounds means a type of organic nitrogen compound in which the molecular structure includes a central nitrogen atom joined to four organic groups as well as an acid radical of some sort.

Recovery device means an individual unit of equipment used for the purpose of recovering chemicals from process vent streams and from wastewater streams for fuel value (i.e., net positive heating value), use, reuse, or for sale for fuel value, use, or reuse. For the purposes of meeting requirements in table 2 to this subpart, the recovery device must not be a process condenser and must recover chemicals to be reused in a process on site. Examples of equipment that may be recovery devices include absorbers, carbon adsorbers, condensers, oil-water separators or organic-water separators, or organic removal devices such as decanters, strippers, or thin-film evaporation units. To be a recovery device for a wastewater stream, a decanter and any other equipment based on the operating principle of gravity separation must receive only multi-phase liquid streams.

Relief valve means a type of pressure relief device that is designed to re-close after the pressure relief.

Responsible official means responsible official as defined in 40 CFR 70.2.

Safety device means a closure device such as a pressure relief valve, frangible disc, fusible plug, or any other type of device which functions exclusively to prevent physical damage or permanent deformation to a unit or its air emission control equipment by venting gases or vapors directly to the atmosphere during unsafe conditions resulting from an unplanned, accidental, or emergency event. For the purposes of this subpart, a safety device is not used for routine venting of gases or vapors from the vapor headspace underneath a cover such as during filling of the unit or to adjust the pressure in response to normal daily diurnal ambient temperature fluctuations. A safety device is designed to remain in a closed position during normal operations and open only when the internal pressure, or another relevant parameter, exceeds the device threshold setting applicable to the air emission control equipment as determined by the owner or

operator based on manufacturer recommendations, applicable regulations, fire protection and prevention codes and practices, or other requirements for the safe handling of flammable, combustible, explosive, reactive, or hazardous materials.

Shutdown means the cessation of operation of a continuous operation for any purpose. Shutdown also means the cessation of a batch operation, or any related individual piece of equipment required or used to comply with this subpart, if the steps taken to cease operation differ from those described in a standard batch or nonstandard batch. Shutdown also applies to emptying and degassing storage vessels. Shutdown does not apply to cessation of batch operations at the end of a campaign or between batches within a campaign when the steps taken are routine operations.

Small control device means a control device that controls total HAP emissions of less than 10 tpy, before control.

Standard batch means a batch process operated within a range of operating conditions that are documented in an operating scenario. Emissions from a standard batch are based on the operating conditions that result in highest emissions. The standard batch defines the uncontrolled and controlled emissions for each emission episode defined under the operating scenario.

Startup means the setting in operation of a continuous operation for any purpose; the first time a new or reconstructed batch operation begins production; for new equipment added, including equipment required or used to comply with this subpart, the first time the equipment is put into operation; or for the introduction of a new product/process, the first time the product or process is run in equipment. For batch operations, startup applies to the first time the equipment is put into operation at the start of a campaign to produce a product that has been produced in the past if the steps taken to begin production differ from those specified in a standard batch or nonstandard batch. Startup does not apply when the equipment is put into operation as part of a batch within a campaign when the steps taken are routine operations.

Storage tank means a tank or other vessel that is used to store liquids that contain organic HAP and/or hydrogen halide and halogen HAP and that has been assigned to an MCPU according to the procedures in § 63.2435(d). The following are not considered storage tanks for the purposes of this subpart:

- (1) Vessels permanently attached to motor vehicles such as trucks, railcars, barges, or ships;
- (2) Pressure vessels designed to operate in excess of 204.9 kilopascals and without emissions to the atmosphere;
- (3) Vessels storing organic liquids that contain HAP only as impurities;
- (4) Wastewater storage tanks;
- (5) Bottoms receivers;
- (6) Surge control vessels; and
- (7) Process tanks.

Supplemental gases means the air that is added to a vent stream after the vent stream leaves the unit operation. Air that is part of the vent stream as a result of the nature of the unit operation is not considered supplemental gases. Air required to operate combustion device burner(s) is not considered supplemental gases.

Surge control vessel means feed drums, recycle drums, and intermediate vessels as part of any continuous operation. Surge control vessels are used within an MCPU when in-process storage, mixing, or management of flowrates or volumes is needed to introduce material into continuous operations.

Thermal expansion relief valve means a pressure relief valve designed to protect equipment from excess pressure due to thermal expansion of blocked liquid-filled equipment or piping due to ambient heating or heat from a heat tracing system. Pressure relief valves designed to protect equipment from excess pressure due to blockage against a pump or compressor or due to fire contingency are not thermal expansion relief valves.

Total organic compounds or (TOC) means the total gaseous organic compounds (minus methane and ethane) in a vent stream.

Transfer rack means the collection of loading arms and loading hoses, at a single loading rack, that are assigned to an MCPU according to the procedures specified in § 63.2435(d) and are used to fill tank trucks and/or rail cars with organic liquids that contain one or more of the organic HAP listed in section 112(b) of the CAA of this subpart. Transfer rack includes the associated pumps, meters, shutoff valves, relief valves, and other piping and valves.

Unit operation means those processing steps that occur within distinct equipment that are used, among other things, to prepare reactants, facilitate reactions, separate and purify products, and recycle materials. Equipment used for these purposes includes, but is not limited to, reactors, distillation columns, extraction columns, absorbers, decanters, dryers, condensers, and filtration equipment.

Waste management unit means the equipment, structure(s), and/or device(s) used to convey, store, treat, or dispose of wastewater streams or residuals. Examples of waste management units include wastewater tanks, air flotation units, surface impoundments, containers, oil-water or organic-water separators, individual drain systems, biological wastewater treatment units, waste incinerators, and organic removal devices such as steam and air stripper units, and thin film evaporation units. If such equipment is being operated as a recovery device, then it is part of a miscellaneous organic chemical manufacturing process and is not a waste management unit.

Wastewater means water that is discarded from an MCPU or control device through a POD and that contains either: an annual average concentration of compounds in tables 8 and 9 to this subpart of at least 5 ppmw and has an annual average flowrate of 0.02 liters per minute or greater; or an annual average concentration of compounds in tables 8 and 9 to this subpart of at least 10,000 ppmw at any flowrate. Wastewater means process wastewater or maintenance wastewater. The following are not considered wastewater for the purposes of this subpart:

- (1) Stormwater from segregated sewers;
- (2) Water from fire-fighting and deluge systems, including testing of such systems;
- (3) Spills;
- (4) Water from safety showers;
- (5) Samples of a size not greater than reasonably necessary for the method of analysis that is used;
- (6) Equipment leaks;
- (7) Wastewater drips from procedures such as disconnecting hoses after cleaning lines; and
- (8) Noncontact cooling water.

Wastewater stream means a stream that contains only wastewater as defined in this paragraph (i).

Work practice standard means any design, equipment, work practice, or operational standard, or combination thereof, that is promulgated pursuant to section 112(h) of the CAA.

[68 FR 63888, Nov. 10, 2003, as amended at 70 FR 38560, July 1, 2005; 71 FR 40338, July 14, 2006; 85 FR 49159, Aug. 12, 2020; 89 FR 23872, Apr. 4, 2024]

Table 1 to Subpart FFFF of Part 63—Emission Limits and Work Practice Standards for Continuous Process Vents

As required in § 63.2455, you must meet each emission limit and work practice standard in the following table that applies to your continuous process vents:

For each . . .	For which . . .	Then you must . . .
1. Group 1 continuous process vent	a. Not applicable	i. Reduce emissions of total organic HAP by ≥ 98 percent by weight or to an outlet process concentration ≤ 20 ppmv as organic HAP or TOC by venting emissions through a closed-vent system to any combination of control devices (except a flare); or ii. Reduce emissions of total organic HAP by venting emissions through a closed vent system to a flare; or iii. Use a recovery device to maintain the TRE above 1.9 for an existing source or above 5.0 for a new source.
2. Halogenated Group 1 continuous process vent stream	a. You use a combustion control device to control organic HAP emissions	i. Use a halogen reduction device after the combustion device to reduce emissions of hydrogen halide and halogen HAP by ≥ 99 percent by weight, or to ≤ 0.45 kg/hr, or to ≤ 20 ppmv; or ii. Use a halogen reduction device before the combustion device to reduce the halogen atom mass emission rate to ≤ 0.45 kg/hr or to a concentration ≤ 20 ppmv.
3. Group 2 continuous process vent at an existing source	You use a recovery device to maintain the TRE level > 1.9 but ≤ 5.0	Comply with the requirements in § 63.2450(e)(4) and the requirements in § 63.993 and the requirements referenced therein.
4. Group 2 continuous	You use a recovery device to maintain the TRE level > 5.0 but	Comply with the requirements in § 63.2450(e)(4) and the requirements in § 63.993

For each . . .	For which . . .	Then you must . . .
process vent at a new source	≤8.0	and the requirements referenced therein.
5. Continuous process vent	Beginning no later than the compliance dates specified in § 63.2445(i), the continuous process vent contains ethylene oxide such that it is considered to be in ethylene oxide service as defined in § 63.2550	Comply with the applicable emission limits specified in items 1 through 4 of this Table, and also: i. Reduce emissions of ethylene oxide by venting emissions through a closed-vent system to a flare; or ii. Reduce emissions of ethylene oxide by venting emissions through a closed-vent system to a control device that reduces ethylene oxide by ≥99.9 percent by weight, or to a concentration <1 ppmv for each process vent or to <5 pounds per year for all combined process vents.

[85 FR 49161, Aug. 12, 2020]

Table 2 to Subpart FFFF of Part 63—Emission Limits and Work Practice Standards for Batch Process Vents

As required in § 63.2460, you must meet each emission limit and work practice standard in the following table that applies to your batch process vents:

For each . . .	Then you must . . .	And you must . . .
1. Process with Group 1 batch process vents	a. Reduce collective uncontrolled organic HAP emissions from the sum of all batch process vents within the process by ≥98 percent by weight by venting emissions from a sufficient number of the vents through one or more closed-vent systems to any combination of control devices (except a flare); or b. Reduce collective uncontrolled organic HAP emissions from the sum of all batch process vents within the process by ≥95 percent by weight by venting emissions from a sufficient number of the vents through one or more closed-vent systems to any combination of recovery devices or a biofilter, except you may elect to comply with the requirements of subpart WW of this part for any process tank; or	Not applicable. Not applicable.

For each . . .	Then you must . . .	And you must . . .
2. Halogenated Group 1 batch process vent for which you use a combustion device to control organic HAP emissions	c. Reduce uncontrolled organic HAP emissions from one or more batch process vents within the process by venting through a closed-vent system to a flare or by venting through one or more closed-vent systems to any combination of control devices (excluding a flare) that reduce organic HAP to an outlet concentration ≤ 20 ppmv as TOC or total organic HAP a. Use a halogen reduction device after the combustion control device; or b. Use a halogen reduction device before the combustion control device	For all other batch process vents within the process, reduce collective organic HAP emissions as specified in item 1.a and/or item 1.b of this Table. i. Reduce overall emissions of hydrogen halide and halogen HAP by ≥ 99 percent; or ii. Reduce overall emissions of hydrogen halide and halogen HAP to ≤ 0.45 kg/hr; or iii. Reduce overall emissions of hydrogen halide and halogen HAP to a concentration ≤ 20 ppmv. Reduce the halogen atom mass emission rate to ≤ 0.45 kg/hr or to a concentration ≤ 20 ppmv.
3. Batch process vent that contains ethylene oxide such that it is considered to be in ethylene oxide service as defined in § 63.2550	Beginning no later than the compliance dates specified in § 63.2445(i), comply with the applicable emission limits specified in items 1 and 2 of this Table, and also: i. Reduce emissions of ethylene oxide by venting emissions through a closed-vent system to a flare; or ii. Reduce emissions of ethylene oxide by venting emissions through a closed-vent system to a control device that reduces ethylene oxide by ≥ 99.9 percent by weight, or to a concentration < 1 ppmv for each process vent or to < 5 pounds per year for all combined process vents.	Not applicable.

[85 FR 49161, Aug. 12, 2020]

Table 3 to Subpart FFFF of Part 63—Emission Limits for Hydrogen Halide and Halogen HAP Emissions or HAP Metals Emissions From Process Vents

As required in § 63.2465, you must meet each emission limit in the following table that applies to your process vents that contain hydrogen halide and halogen HAP emissions or PM HAP emissions:

For each . . .	You must . . .
1. Process with uncontrolled hydrogen halide and halogen HAP emissions from process vents $\geq 1,000$ lb/yr	a. Reduce collective hydrogen halide and halogen HAP emissions by ≥ 99 percent by weight or to an outlet concentration ≤ 20 ppmv by venting through one or more closed-vent systems to any combination of control devices, or b. Reduce the halogen atom mass emission rate from the sum of all batch process vents and each individual continuous process vent to ≤ 0.45 kg/hr by venting through one or more closed-vent systems to a halogen reduction device.
2. Process at a new source with uncontrolled emissions from process vents ≥ 150 lb/yr of HAP metals	Reduce overall emissions of HAP metals by ≥ 97 percent by weight.

[68 FR 63888, Nov. 10, 2003, as amended at 71 FR 40340, July 14, 2006]

Table 4 to Subpart FFFF of Part 63—Emission Limits for Storage Tanks

As required in § 63.2470, you must meet each emission limit in the following table that applies to your storage tanks:

For each . . .	For which . . .	Then you must . . .
1. Group 1 storage tank	a. The maximum true vapor pressure of total HAP at the storage temperature is ≥ 76.6 kilopascals	i. Reduce total HAP emissions by ≥ 95 percent by weight or to ≤ 20 ppmv of TOC or organic HAP and ≤ 20 ppmv of hydrogen halide and halogen HAP by venting emissions through a closed vent system to any combination of

¹ Beginning no later than the compliance dates specified in § 63.2445(g), any flare using fuel gas from a fuel gas system, of which 50 percent or more of the fuel gas is derived from an MCPU that has processes and/or equipment in ethylene oxide service or that produces olefins or polyolefins, as determined on an annual average basis, must be in compliance with § 63.2450(e)(5). For purposes of compliance, an MCPU that "produces olefins or polyolefins" includes only those MCPUs that manufacture ethylene, propylene, polyethylene, and/or polypropylene as a product. By-products and impurities as defined in § 63.101, as well as wastes and trace contaminants, are not considered products.

For each . . .	For which . . .	Then you must . . .
		control devices (excluding a flare); or ii. Reduce total organic HAP emissions by venting emissions through a closed vent system to a flare; or iii. Comply with the requirements in § 63.2450(e)(4), as applicable; and reduce total HAP emissions by venting emissions to a fuel gas system or process in accordance with § 63.982(d) and the requirements referenced therein. ¹
	b. The maximum true vapor pressure of total HAP at the storage temperature is <76.6 kilopascals	i. Comply with the requirements of subpart WW of this part, except as specified in § 63.2470; or ii. Reduce total HAP emissions by ≥95 percent by weight or to ≤20 ppmv of TOC or organic HAP and ≤20 ppmv of hydrogen halide and halogen HAP by venting emissions through a closed vent system to any combination of control devices (excluding a flare); or iii. Reduce total organic HAP emissions by venting emissions through a closed vent system to a flare; or iv. Comply with the requirements in § 63.2450(e)(4), as applicable; and reduce total HAP emissions by venting emissions to a fuel gas system or process in accordance with § 63.982(d) and the requirements referenced therein. ¹
2. Halogenated vent stream from a Group 1 storage tank	You use a combustion control device to control organic HAP emissions	Meet one of the emission limit options specified in Item 2.a.i or ii. in Table 1 to this subpart.
3. Storage	Beginning no later than the	Comply with the applicable emission limits

¹ Beginning no later than the compliance dates specified in § 63.2445(g), any flare using fuel gas from a fuel gas system, of which 50 percent or more of the fuel gas is derived from an MCPU that has processes and/or equipment in ethylene oxide service or that produces olefins or polyolefins, as determined on an annual average basis, must be in compliance with § 63.2450(e)(5). For purposes of compliance, an MCPU that "produces olefins or polyolefins" includes only those MCPUs that manufacture ethylene, propylene, polyethylene, and/or polypropylene as a product. By-products and impurities as defined in § 63.101, as well as wastes and trace contaminants, are not considered products.

For each . . .	For which . . .	Then you must . . .
tank of any capacity and vapor pressure	compliance dates specified in § 63.2445(i), the stored liquid contains ethylene oxide such that the storage tank is considered to be in ethylene oxide service as defined in § 63.2550	specified in items 1 and 2 of this Table, and also: i. Reduce emissions of ethylene oxide by venting emissions through a closed-vent system to a flare; or ii. Reduce emissions of ethylene oxide by venting emissions through a closed-vent system to a control device that reduces ethylene oxide by ≥ 99.9 percent by weight, or to a concentration < 1 ppmv for each storage tank vent.

¹ Beginning no later than the compliance dates specified in § 63.2445(g), any flare using fuel gas from a fuel gas system, of which 50 percent or more of the fuel gas is derived from an MCPU that has processes and/or equipment in ethylene oxide service or that produces olefins or polyolefins, as determined on an annual average basis, must be in compliance with § 63.2450(e)(5). For purposes of compliance, an MCPU that "produces olefins or polyolefins" includes only those MCPUs that manufacture ethylene, propylene, polyethylene, and/or polypropylene as a product. By-products and impurities as defined in § 63.101, as well as wastes and trace contaminants, are not considered products.

[85 FR 49162, Aug. 12, 2020]

Table 5 to Subpart FFFF of Part 63—Emission Limits and Work Practice Standards for Transfer Racks

As required in § 63.2475, you must meet each emission limit and work practice standard in the following table that applies to your transfer racks:

For each . . .	You must . . .
1. Group 1 transfer rack	a. Reduce emissions of total organic HAP by ≥ 98 percent by weight or to an outlet concentration ≤ 20 ppmv as organic HAP or TOC by venting emissions through a closed-vent system to any combination

¹ Beginning no later than the compliance dates specified in § 63.2445(g), any flare using fuel gas from a fuel gas system, of which 50 percent or more of the fuel gas is derived from an MCPU that has processes and/or equipment in ethylene oxide service or that produces olefins or polyolefins, as determined on an annual average basis, must be in compliance with § 63.2450(e)(5). For purposes of compliance, an MCPU that "produces olefins or polyolefins" includes only those MCPUs that manufacture ethylene, propylene, polyethylene, and/or polypropylene as a product. By-products and impurities as defined in § 63.101, as well as wastes and trace contaminants, are not considered products.

For each . . .	You must . . .
	of control devices (except a flare); or b. Reduce emissions of total organic HAP by venting emissions through a closed-vent system to a flare; or c. Comply with the requirements in § 63.2450(e)(4), as applicable; and reduce emissions of total organic HAP by venting emissions to a fuel gas system or process in accordance with § 63.982(d) and the requirements referenced therein;¹ or d. Use a vapor balancing system designed and operated to collect organic HAP vapors displaced from tank trucks and railcars during loading and route the collected HAP vapors to the storage tank from which the liquid being loaded originated or to another storage tank connected by a common header.
2. Halogenated Group 1 transfer rack vent stream for which you use a combustion device to control organic HAP emissions	a. Use a halogen reduction device after the combustion device to reduce emissions of hydrogen halide and halogen HAP by ≥99 percent by weight, to ≤0.45 kg/hr, or to ≤20 ppmv; or b. Use a halogen reduction device before the combustion device to reduce the halogen atom mass emission rate to ≤0.45 kg/hr or to a concentration ≤20 ppmv.

¹ Beginning no later than the compliance dates specified in § 63.2445(g), any flare using fuel gas from a fuel gas system, of which 50 percent or more of the fuel gas is derived from an MCPU that has processes and/or equipment in ethylene oxide service or that produces olefins or polyolefins, as determined on an annual average basis, must be in compliance with § 63.2450(e)(5). For purposes of compliance, an MCPU that "produces olefins or polyolefins" includes only those MCPUs that manufacture ethylene, propylene, polyethylene, and/or polypropylene as a product. By-products and impurities as defined in § 63.101, as well as wastes and trace contaminants, are not considered products.

[85 FR 49163, Aug. 12, 2020]

Table 6 to Subpart FFFF of Part 63—Requirements for Equipment Leaks

As required in § 63.2480, you must meet each requirement in the following table that applies to your equipment leaks:

For all . . .	And that is part of . . .	You must . . .
1. Equipment that is in organic HAP	a. Any MCPU	i. Comply with the requirements of subpart UU of this part and the requirements referenced therein, except as specified in § 63.2480(b)

For all . . .	And that is part of . . .	You must . . .
service		and (d) through (f); or ii. Comply with the requirements of subpart H of this part and the requirements referenced therein, except as specified in § 63.2480(b) and (d) through (f); or iii. Comply with the requirements of 40 CFR part 65, subpart F, and the requirements referenced therein, except as specified in § 63.2480(c), and (d) through (f).
2. Equipment that is in organic HAP service at a new source	a. Any MCPU	i. Comply with the requirements of subpart UU of this part and the requirements referenced therein, except as specified in § 63.2480(b)(6) and (7), (e), and (f); or ii. Comply with the requirements of 40 CFR part 65, subpart F, except as specified in § 63.2480(c)(10) and (11), (e), and (f).
3. Equipment that is in ethylene oxide service as defined in § 63.2550	a. Any MCPU	i. Beginning no later than the compliance dates specified in § 63.2445(i), comply with the requirements of subpart UU of this part and the requirements referenced therein, except as specified in § 63.2493(d) and (e); or ii. Beginning no later than the compliance dates specified in § 63.2445(i), comply with the requirements of subpart H of this part and the requirements referenced therein, except as specified in § 63.2493(d) and (e); iii. Beginning no later than the compliance dates specified in § 63.2445(i), comply with the requirements of 40 CFR part 65, subpart F, and the requirements referenced therein, except as specified in § 63.2493(d) and (e).

[85 FR 49163, Aug. 12, 2020]

Table 7 to Subpart FFFF of Part 63—Requirements for Wastewater Streams and Liquid Streams in Open Systems Within an MCPU

As required in § 63.2485, you must meet each requirement in the following table that applies to your wastewater streams and liquid streams in open systems within an MCPU:

For each . . .	You must . . .
1. Process wastewater stream	Comply with the requirements in §§ 63.132 through 63.148 and the requirements referenced therein, except as specified in § 63.2485.

For each . . .	You must . . .
2. Maintenance wastewater stream	Comply with the requirements in § 63.105 and the requirements referenced therein, except as specified in § 63.2485.
3. Liquid streams in an open system within an MCPU	Comply with the requirements in § 63.149 and the requirements referenced therein, except as specified in § 63.2485.

Table 8 to Subpart FFFF of Part 63—Partially Soluble Hazardous Air Pollutants

As specified in § 63.2485, the partially soluble HAP in wastewater that are subject to management and treatment requirements in this subpart FFFF are listed in the following table:

Chemical name . . .	CAS No.
1. 1,1,1-Trichloroethane (methyl chloroform)	71556
2. 1,1,2,2-Tetrachloroethane	79345
3. 1,1,2-Trichloroethane	79005
4. 1,1-Dichloroethylene (vinylidene chloride)	75354
5. 1,2-Dibromoethane	106934
6. 1,2-Dichloroethane (ethylene dichloride)	107062
7. 1,2-Dichloropropane	78875
8. 1,3-Dichloropropene	542756
9. 2,4,5-Trichlorophenol	95954
10. 1,4-Dichlorobenzene	106467
11. 2-Nitropropane	79469
12. 4-Methyl-2-pentanone (MIBK)	108101
13. Acetaldehyde	75070
14. Acrolein	107028
15. Acrylonitrile	107131
16. Allyl chloride	107051
17. Benzene	71432
18. Benzyl chloride	100447
19. Biphenyl	92524
20. Bromoform (tribromomethane)	75252
21. Bromomethane	74839
22. Butadiene	106990
23. Carbon disulfide	75150
24. Chlorobenzene	108907
25. Chloroethane (ethyl chloride)	75003

Chemical name . . .	CAS No.
26. Chloroform	67663
27. Chloromethane	74873
28. Chloroprene	126998
29. Cumene	98828
30. Dichloroethyl ether	111444
31. Dinitrophenol	51285
32. Epichlorohydrin	106898
33. Ethyl acrylate	140885
34. Ethylbenzene	100414
35. Ethylene oxide	75218
36. Ethylidene dichloride	75343
37. Hexachlorobenzene	118741
38. Hexachlorobutadiene	87683
39. Hexachloroethane	67721
40. Methyl methacrylate	80626
41. Methyl-t-butyl ether	1634044
42. Methylene chloride	75092
43. N-hexane	110543
44. N,N-dimethylaniline	121697
45. Naphthalene	91203
46. Phosgene	75445
47. Propionaldehyde	123386
48. Propylene oxide	75569
49. Styrene	100425
50. Tetrachloroethylene (perchloroethylene)	127184
51. Tetrachloromethane (carbon tetrachloride)	56235
52. Toluene	108883
53. Trichlorobenzene (1,2,4-)	120821
54. Trichloroethylene	79016
55. Trimethylpentane	540841
56. Vinyl acetate	108054
57. Vinyl chloride	75014
58. Xylene (m)	108383
59. Xylene (o)	95476
60. Xylene (p)	106423

[68 FR 63888, Nov. 10, 2003, as amended at 70 FR 38560, July 1, 2005; 71 FR 40341, July 14, 2006]

Table 9 to Subpart FFFF of Part 63—Soluble Hazardous Air Pollutants

As specified in § 63.2485, the soluble HAP in wastewater that are subject to management and treatment requirements of this subpart FFFF are listed in the following table:

Chemical name . . .	CAS No.
1. Acetonitrile	75058
2. Acetophenone	98862
3. Diethyl sulfate	64675
4. Dimethyl hydrazine (1,1)	57147
5. Dimethyl sulfate	77781
6. Dinitrotoluene (2,4)	121142
7. Dioxane (1,4)	123911
8. Ethylene glycol dimethyl ether	110714
9. Ethylene glycol monobutyl ether acetate	112072
10. Ethylene glycol monomethyl ether acetate	110496
11. Isophorone	78591
12. Methanol	67561
13. Nitrobenzene	98953
14. Toluidine (o-)	95534
15. Triethylamine	121448

[68 FR 63888, Nov. 10, 2003, as amended at 70 FR 38561, July 1, 2005]

Table 10 to Subpart FFFF of Part 63—Work Practice Standards for Heat Exchange Systems

As required in § 63.2490, you must meet each requirement in the following table that applies to your heat exchange systems:

For each . . .	You must . . .
Heat exchange system, as defined in § 63.101	a. Comply with the requirements of § 63.104 and the requirements referenced therein, except as specified in § 63.2490(b) and (c); or b. Comply with the requirements in § 63.2490(d); or c. Comply with the requirements in § 63.2490(e).

[89 FR 23873,, Apr. 4, 2024]

Table 11 to Subpart FFFF of Part 63—Requirements for Reports

As required in § 63.2520(a) and (b), you must submit each report that applies to you on the schedule shown in the following table:

You must submit a(n)	The report must contain . . .	You must submit the report . . .
1. Precompliance report	The information specified in § 63.2520(c)	At least 6 months prior to the compliance date; or for new sources, with the application for approval of construction or reconstruction.
2. Notification of compliance status report	The information specified in § 63.2520(d)	No later than 150 days after the compliance date specified in § 63.2445.
3. Compliance report	The information specified in § 63.2520(e)	Semiannually according to the requirements in § 63.2520(b).

Table 12 to Subpart FFFF of Part 63—Applicability of General Provisions to Subpart FFFF

As specified in § 63.2540, the parts of the General Provisions that apply to you are shown in the following table:

Citation	Subject	Explanation
§ 63.1	Applicability	Yes.
§ 63.2	Definitions	Yes.
§ 63.3	Units and Abbreviations	Yes.
§ 63.4	Prohibited Activities	Yes.
§ 63.5	Construction/Reconstruction	Yes.
§ 63.6(a)	Applicability	Yes.
§ 63.6(b)(1)-(4)	Compliance Dates for New and Reconstructed sources	Yes.
§ 63.6(b)(5)	Notification	Yes.
§ 63.6(b)(6)	[Reserved]	
§ 63.6(b)(7)	Compliance Dates for New and Reconstructed Area Sources	Yes.

Citation	Subject	Explanation
§ 63.6(c)(1)-(2)	That Become Major Compliance Dates for Existing Sources	Yes.
§ 63.6(c)(3)-(4)	[Reserved]	
§ 63.6(c)(5)	Compliance Dates for Existing Area Sources That Become Major	Yes.
§ 63.6(d)	[Reserved]	
§ 63.6(e)(1)(i)	Operation & Maintenance	Yes, before August 12, 2023. No, beginning on and after August 12, 2023. See § 63.2450(u) for general duty requirement.
§ 63.6(e)(1)(ii)	Operation & Maintenance	Yes, before August 12, 2023. No, beginning on and after August 12, 2023.
§ 63.6(e)(1)(iii)	Operation & Maintenance	Yes.
§ 63.6(e)(2)	[Reserved]	
§ 63.6(e)(3)(i), (iii), and (v) through (viii)	Startup, Shutdown, Malfunction Plan (SSMP)	Yes, before August 12, 2023, except information regarding Group 2 emission points and equipment leaks is not required in the SSMP, as specified in § 63.2525(j). No, beginning on and after August 12, 2023.
§ 63.6(e)(3)(iii) and (iv)	Recordkeeping and Reporting During SSM	No, see § 63.2525 for recordkeeping requirements and § 63.2520(e)(4) for reporting requirements.
§ 63.6(e)(3)(ix)	SSMP incorporation into title V permit	Yes, before August 12, 2023. No beginning on and after August 12, 2023.
§ 63.6(f)(1)	Compliance With Non-Opacity Standards Except During SSM	No. See § 63.2445(g) through (i).
§ 63.6(f)(2)-(3)	Methods for Determining Compliance	Yes.
§ 63.6(g)(1)-(3)	Alternative Standard	Yes.
§ 63.6(h)(1)	Compliance with Opacity Standards Except During SSM	No. See § 63.2445(g) through (i).

Citation	Subject	Explanation
§ 63.6(h)(2)-(9)	Opacity/Visible Emission (VE) Standards	Only for flares for which Method 22 of 40 CFR part 60, appendix A-7, observations are required as part of a flare compliance assessment.
§ 63.6(i)(1)-(14), and (16)	Compliance Extension	Yes.
§ 63.6(j)	Presidential Compliance Exemption	Yes.
§ 63.7(a)(1)-(2)	Performance Test Dates	Yes, except substitute 150 days for 180 days.
§ 63.7(a)(3)	Section 114 Authority	Yes, and this paragraph also applies to flare compliance assessments as specified under § 63.997(b)(2).
§ 63.7(a)(4)	Force Majeure	Yes.
§ 63.7(b)(1)	Notification of Performance Test	Yes.
§ 63.7(b)(2)	Notification of Rescheduling	Yes.
§ 63.7(c)	Quality Assurance/Test Plan	Yes, except the test plan must be submitted with the notification of the performance test if the control device controls batch process vents.
§ 63.7(d)	Testing Facilities	Yes.
§ 63.7(e)(1)	Conditions for Conducting Performance Tests	Yes, before August 12, 2023 except that performance tests for batch process vents must be conducted under worst-case conditions as specified in § 63.2460. No, beginning on and after August 12, 2023. See § 63.2450(g)(6).
§ 63.7(e)(2)	Conditions for Conducting Performance Tests	Yes.
§ 63.7(e)(3)	Test Run Duration	Yes.
§ 63.7(e)(4)	Administrator's Authority to Require Testing	Yes.
§ 63.7(f)	Alternative Test Method	Yes.
§ 63.7(g)	Performance Test Data Analysis	Yes, except this subpart specifies how and when the performance test and performance evaluation results are reported.
§ 63.7(h)	Waiver of Tests	Yes.
§ 63.8(a)(1)	Applicability of Monitoring Requirements	Yes.

Citation	Subject	Explanation
§ 63.8(a)(2)	Performance Specifications	Yes.
§ 63.8(a)(3)	[Reserved]	
§ 63.8(a)(4)	Monitoring with Flares	Yes, except for flares subject to § 63.2450(e)(5).
§ 63.8(b)(1)	Monitoring	Yes.
§ 63.8(b)(2)-(3)	Multiple Effluents and Multiple Monitoring Systems	Yes.
§ 63.8(c)(1)	Monitoring System Operation and Maintenance	Yes.
§ 63.8(c)(1)(i)	Routine and Predictable SSM	Yes, before August 12, 2023. No, beginning on and after August 12, 2023.
§ 63.8(c)(1)(ii)	CMS malfunction not in SSM plan	Yes.
§ 63.8(c)(1)(iii)	Compliance with Operation and Maintenance Requirements	Yes, before August 12, 2023. No, beginning on and after August 12, 2023.
§ 63.8(c)(2)-(3)	Monitoring System Installation	Yes.
§ 63.8(c)(4)	CMS Requirements	Only for CEMS. Requirements for CPMS are specified in referenced subparts G and SS of this part. Requirements for COMS do not apply because this subpart does not require continuous opacity monitoring systems (COMS).
§ 63.8(c)(4)(i)	COMS Measurement and Recording Frequency	No; this subpart does not require COMS.
§ 63.8(c)(4)(ii)	CEMS Measurement and Recording Frequency	Yes.
§ 63.8(c)(5)	COMS Minimum Procedures	No. This subpart does not contain opacity or VE limits.
§ 63.8(c)(6)	CMS Requirements	Only for CEMS; requirements for CPMS are specified in referenced subparts G and SS of this part. Requirements for COMS do not apply because this subpart does not require COMS.
§ 63.8(c)(7)-(8)	CMS	Only for CEMS. Requirements for CPMS are specified in

Citation	Subject	Explanation
	Requirements	referenced subparts G and SS of this part. Requirements for COMS do not apply because this subpart does not require COMS.
§ 63.8(d)(1)	CMS Quality Control	Only for CEMS.
§ 63.8(d)(2)	CMS Quality Control	Only for CEMS.
§ 63.8(d)(3)	CMS Quality Control	Yes, only for CEMS before August 12, 2023. No, beginning on and after August 12, 2023. See § 63.2450(j)(6).
§ 63.8(e)	CMS Performance Evaluation	Only for CEMS, except this subpart specifies how and when the performance evaluation results are reported. Section 63.8(e)(5)(ii) does not apply because this subpart does not require COMS.
§ 63.8(f)(1)-(5)	Alternative Monitoring Method	Yes, except you may also request approval using the precompliance report.
§ 63.8(f)(6)	Alternative to Relative Accuracy Test	Only applicable when using CEMS to demonstrate compliance, including the alternative standard in § 63.2505.
§ 63.8(g)(1)-(4)	Data Reduction	Only when using CEMS, including for the alternative standard in § 63.2505, except that the requirements for COMS do not apply because this subpart has no opacity or VE limits, and § 63.8(g)(2) does not apply because data reduction requirements for CEMS are specified in § 63.2450(j).
§ 63.8(g)(5)	Data Reduction	No. Requirements for CEMS are specified in § 63.2450(j). Requirements for CPMS are specified in referenced subparts G and SS of this part.
§ 63.9(a)	Notification Requirements	Yes.
§ 63.9(b)(1)-(5)	Initial Notifications	Yes.
§ 63.9(c)	Request for Compliance Extension	Yes.
§ 63.9(d)	Notification of Special Compliance Requirements for New Source	Yes.
§ 63.9(e)	Notification of Performance Test	Yes.
§ 63.9(f)	Notification of VE/Opacity Test	No.

Citation	Subject	Explanation
§ 63.9(g)	Additional Notifications When Using CMS	Only for CEMS. Section 63.9(g)(2) does not apply because this subpart does not require COMS.
63.9(h)(1)-(6)	Notification of Compliance Status	Yes, except § 63.9(h)(2)(i)(A) through (G) and (h)(2)(ii) do not apply because § 63.2520(d) specifies the required contents and due date of the notification of compliance status report.
§ 63.9(i)	Adjustment of Submittal Deadlines	Yes.
§ 63.9(j)	Change in previous information	Yes, for change in major source status, otherwise § 63.2520(e) specifies reporting requirements for process changes.
§ 63.9(k)	Electronic reporting procedures	Yes.
§ 63.10(a)	Recordkeeping/ Reporting	Yes.
§ 63.10(b)(1)	Recordkeeping/ Reporting	Yes.
§ 63.10(b)(2)(i)	Records related to startup and shutdown	No, see §§ 63.2450(e) and 63.2525 for recordkeeping requirements.
§ 63.10(b)(2)(ii)	Recordkeeping relevant to SSM periods and CMS	Yes, before August 12, 2023. No, beginning on and after August 12, 2023. See § 63.2525(h) and (l).
§ 63.10(b)(2)(iii)	Records related to maintenance of air pollution control equipment	Yes.
§ 63.10(b)(2)(iv) and (v)	Recordkeeping relevant to SSM period	Yes, before August 12, 2023. No, beginning on and after August 12, 2023.
§ 63.10(b)(2)(vi)	CMS Records	Before August 12, 2023, yes but only for CEMS; requirements for CPMS are specified in referenced subparts G and SS of this part. Beginning on and after August 12, 2023, yes for CEMS and CPMS for flares subject to § 63.2450(e)(5).
§ 63.10(b)(2)(x) and (xi)	CMS Records	Only for CEMS; requirements for CPMS are specified in referenced subparts G and SS of this part.
§ 63.10(b)(2)(vii)-(ix)	Records	Yes.
§	Records	Yes.

Citation	Subject	Explanation
63.10(b)(2)(xii) § 63.10(b)(2)(xiii) § 63.10(b)(2)(xiv)	Records	Only for CEMS.
§ 63.10(b)(3)	Records	Yes.
§ 63.10(c)(1)-(6),(9)-(14)	Records	Only for CEMS. Recordkeeping requirements for CPMS are specified in referenced subparts G and SS of this part.
§ 63.10(c)(7)-(8)	Records	No. Recordkeeping requirements are specified in § 63.2525.
§ 63.10(c)(15)	Records	Yes, before August 12, 2023, but only for CEMS. No, beginning on and after August 12, 2023.
§ 63.10(d)(1)	General Reporting Requirements	Yes.
§ 63.10(d)(2)	Report of Performance Test Results	Yes, before October 13, 2020. No, beginning on and after October 13, 2020.
§ 63.10(d)(3)	Reporting Opacity or VE Observations	No.
§ 63.10(d)(4)	Progress Reports	Yes.
§ 63.10(d)(5)(i)	Periodic Startup, Shutdown, and Malfunction Reports	No, § 63.2520(e)(4) and (5) specify the SSM reporting requirements.
§ 63.10(d)(5)(ii)	Immediate SSM Reports	No.
§ 63.10(e)(1)	Additional CEMS Reports	Yes.
§ 63.10(e)(2)(i)	Additional CMS Reports	Only for CEMS, except this subpart specifies how and when the performance evaluation results are reported.
§ 63.10(e)(2)(ii)	Additional COMS Reports	No. This subpart does not require COMS.
§ 63.10(e)(3)	Reports	No. Reporting requirements are specified in § 63.2520.
§ 63.10(e)(3)(i)-(iii)	Reports	No. Reporting requirements are specified in § 63.2520.
§ 63.10(e)(3)(iv)-(v)	Excess Emissions Reports	No. Reporting requirements are specified in § 63.2520.
§ 63.10(e)(3)(iv)-(v)	Excess Emissions Reports	No. Reporting requirements are specified in § 63.2520.

Citation	Subject	Explanation
(v)		
§ 63.10(e)(3)(vi)-(viii)	Excess Emissions Report and Summary Report	No. Reporting requirements are specified in § 63.2520.
§ 63.10(e)(4)	Reporting COMS data	No.
§ 63.10(f)	Waiver for Recordkeeping/Reporting	Yes.
§ 63.11	Control device requirements for flares and work practice requirements for equipment leaks	Yes, except for flares subject to § 63.2450(e)(5).
§ 63.12	Delegation	Yes.
§ 63.13	Addresses	Yes.
§ 63.14	Incorporation by Reference	Yes.
§ 63.15	Availability of Information	Yes.

[85 FR 49164, Aug. 12, 2020, as amended at 85 FR 73903, Nov. 19, 2020; 89 FR 23873, Apr. 4, 2024]

This content is from the eCFR and is authoritative but unofficial.

Title 40 —Protection of Environment

Chapter I —Environmental Protection Agency

Subchapter C —Air Programs

Part 63 —National Emission Standards for Hazardous Air Pollutants for Source Categories

Authority: 42 U.S.C. 7401 *et seq.*

Source: 57 FR 61992, Dec. 29, 1992, unless otherwise noted.

Subpart ZZZZ National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

What This Subpart Covers

§ 63.6580 What is the purpose of subpart ZZZZ?

§ 63.6585 Am I subject to this subpart?

§ 63.6590 What parts of my plant does this subpart cover?

§ 63.6595 When do I have to comply with this subpart?

Emission and Operating Limitations

§ 63.6600 What emission limitations and operating limitations must I meet if I own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions?

§ 63.6601 What emission limitations must I meet if I own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 brake HP and less than or equal to 500 brake HP located at a major source of HAP emissions?

§ 63.6602 What emission limitations and other requirements must I meet if I own or operate an existing stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions?

§ 63.6603 What emission limitations, operating limitations, and other requirements must I meet if I own or operate an existing stationary RICE located at an area source of HAP emissions?

§ 63.6604 What fuel requirements must I meet if I own or operate a stationary CI RICE?

General Compliance Requirements

§ 63.6605 What are my general requirements for complying with this subpart?

Testing and Initial Compliance Requirements

§ 63.6610 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions?

§ 63.6611 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate a new or reconstructed 4SLB SI stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions?

§ 63.6612 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate an existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing stationary RICE located at an area source of HAP emissions?

§ 63.6615 When must I conduct subsequent performance tests?

§ 63.6620 What performance tests and other procedures must I use?

§ 63.6625 What are my monitoring, installation, collection, operation, and maintenance requirements?

§ 63.6630 How do I demonstrate initial compliance with the emission limitations, operating limitations, and other requirements?

Continuous Compliance Requirements

§ 63.6635 How do I monitor and collect data to demonstrate continuous compliance?

§ 63.6640 How do I demonstrate continuous compliance with the emission limitations, operating limitations, and other requirements?

Notifications, Reports, and Records

§ 63.6645 What notifications must I submit and when?

§ 63.6650 What reports must I submit and when?

§ 63.6655 What records must I keep?

§ 63.6660 In what form and how long must I keep my records?

Other Requirements and Information

§ 63.6665 What parts of the General Provisions apply to me?

§ 63.6670 Who implements and enforces this subpart?

§ 63.6675 What definitions apply to this subpart?

Table 1a to Subpart ZZZZ of Part 63

Emission Limitations for Existing, New, and Reconstructed Spark Ignition, 4SRB Stationary RICE >500 HP Located at a Major Source of HAP Emissions

Table 1b to Subpart ZZZZ of Part 63

Operating Limitations for Existing, New, and Reconstructed SI 4SRB Stationary RICE >500 HP Located at a Major Source of HAP Emissions

Table 2a to Subpart ZZZZ of Part 63

Emission Limitations for New and Reconstructed 2SLB and Compression Ignition Stationary RICE >500 HP and New and Reconstructed 4SLB Stationary RICE $\geq$ 250 HP Located at a Major Source of HAP Emissions

Table 2b to Subpart ZZZZ of Part 63

Operating Limitations for New and Reconstructed 2SLB and CI

Stationary RICE >500 HP Located at a Major Source of HAP
Emissions, New and Reconstructed 4SLB Stationary RICE $\geq$ 250
HP Located at a Major Source of HAP Emissions, Existing CI
Stationary RICE >500 HP

Table 2c to Subpart ZZZZ of Part 63

Requirements for Existing Compression Ignition Stationary
RICE Located at a Major Source of HAP Emissions and Existing
Spark Ignition Stationary RICE $\leq$ 500 HP Located at a Major
Source of HAP Emissions

Table 2d to Subpart ZZZZ of Part 63

Requirements for Existing Stationary RICE Located at Area
Sources of HAP Emissions

Table 3 to Subpart ZZZZ of Part 63

Subsequent Performance Tests

Table 4 to Subpart ZZZZ of Part 63

Requirements for Performance Tests

Table 5 to Subpart ZZZZ of Part 63

Initial Compliance With Emission Limitations, Operating
Limitations, and Other Requirements

Table 6 to Subpart ZZZZ of Part 63

Continuous Compliance With Emission Limitations, and Other
Requirements

Table 7 to Subpart ZZZZ of Part 63

Requirements for Reports

Table 8 to Subpart ZZZZ of Part 63

Applicability of General Provisions to Subpart ZZZZ

Appendix A to Subpart ZZZZ of Part 63

Protocol for Using an Electrochemical Analyzer to Determine
Oxygen and Carbon Monoxide Concentrations From Certain
Engines

**Subpart ZZZZ—National Emissions Standards for Hazardous Air Pollutants for Stationary
Reciprocating Internal Combustion Engines**

Source: 69 FR 33506, June 15, 2004, unless otherwise noted.

WHAT THIS SUBPART COVERS

§ 63.6580 What is the purpose of subpart ZZZZ?

Subpart ZZZZ establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and operating limitations.

[73 FR 3603, Jan. 18, 2008]

§ 63.6585 Am I subject to this subpart?

You are subject to this subpart if you own or operate a stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand.

- (a) A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition.
- (b) A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year, except that for oil and gas production facilities, a major source of HAP emissions is determined for each surface site.
- (c) An area source of HAP emissions is a source that is not a major source.
- (d) If you are an owner or operator of an area source subject to this subpart, your status as an entity subject to a standard or other requirements under this subpart does not subject you to the obligation to obtain a permit under 40 CFR part 70 or 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart as applicable.
- (e) If you are an owner or operator of a stationary RICE used for national security purposes, you may be eligible to request an exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C.
- (f) The emergency stationary RICE listed in paragraphs (f)(1) through (3) of this section are not subject to this subpart. The stationary RICE must meet the definition of an emergency stationary RICE in § 63.6675, which includes operating according to the provisions specified in § 63.6640(f).
 - (1) Existing residential emergency stationary RICE located at an area source of HAP emissions that do not operate for the purpose specified in § 63.6640(f)(4)(ii).
 - (2) Existing commercial emergency stationary RICE located at an area source of HAP emissions that do not operate for the purpose specified in § 63.6640(f)(4)(ii).
 - (3) Existing institutional emergency stationary RICE located at an area source of HAP emissions that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

[69 FR 33506, June 15, 2004, as amended at 73 FR 3603, Jan. 18, 2008; 78 FR 6700, Jan. 30, 2013; 87 FR 48607, Aug. 10, 2022]

§ 63.6590 What parts of my plant does this subpart cover?

This subpart applies to each affected source.

- (a) **Affected source.** An affected source is any existing, new, or reconstructed stationary RICE located at a major or area source of HAP emissions, excluding stationary RICE being tested at a stationary RICE test cell/stand.
 - (1) **Existing stationary RICE.**
 - (i) For stationary RICE with a site rating of more than 500 brake horsepower (HP) located at a major source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before December 19, 2002.
 - (ii) For stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006.
 - (iii) For stationary RICE located at an area source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006.
 - (iv) A change in ownership of an existing stationary RICE does not make that stationary RICE a new or reconstructed stationary RICE.
 - (2) **New stationary RICE.**
 - (i) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions is new if you commenced construction of the stationary RICE on or after December 19, 2002.
 - (ii) A stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions is new if you commenced construction of the stationary RICE on or after June 12, 2006.
 - (iii) A stationary RICE located at an area source of HAP emissions is new if you commenced construction of the stationary RICE on or after June 12, 2006.
 - (3) **Reconstructed stationary RICE.**
 - (i) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions is reconstructed if you meet the definition of reconstruction in § 63.2 and reconstruction is commenced on or after December 19, 2002.
 - (ii) A stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions is reconstructed if you meet the definition of reconstruction in § 63.2 and reconstruction is commenced on or after June 12, 2006.
 - (iii) A stationary RICE located at an area source of HAP emissions is reconstructed if you meet the definition of reconstruction in § 63.2 and reconstruction is commenced on or after June 12, 2006.
- (b) **Stationary RICE subject to limited requirements.**

- (1) An affected source which meets either of the criteria in paragraphs (b)(1)(i) through (ii) of this section does not have to meet the requirements of this subpart and of subpart A of this part except for the initial notification requirements of § 63.6645(f).
 - (i) The stationary RICE is a new or reconstructed emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.
 - (ii) The stationary RICE is a new or reconstructed limited use stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.
- (2) A new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis must meet the initial notification requirements of § 63.6645(f) and the requirements of §§ 63.6625(c), 63.6650(g), and 63.6655(c). These stationary RICE do not have to meet the emission limitations and operating limitations of this subpart.
- (3) The following stationary RICE do not have to meet the requirements of this subpart and of subpart A of this part, including initial notification requirements:
 - (i) Existing spark ignition 2 stroke lean burn (2SLB) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;
 - (ii) Existing spark ignition 4 stroke lean burn (4SLB) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;
 - (iii) Existing emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.
 - (iv) Existing limited use stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;
 - (v) Existing stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis;
- (c) **Stationary RICE subject to Regulations under 40 CFR Part 60.** An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under this part.
 - (1) A new or reconstructed stationary RICE located at an area source;
 - (2) A new or reconstructed 2SLB stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;
 - (3) A new or reconstructed 4SLB stationary RICE with a site rating of less than 250 brake HP located at a major source of HAP emissions;
 - (4) A new or reconstructed spark ignition 4 stroke rich burn (4SRB) stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;
 - (5) A new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis;

- (6) A new or reconstructed emergency or limited use stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;
- (7) A new or reconstructed compression ignition (CI) stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3604, Jan. 18, 2008; 75 FR 9674, Mar. 3, 2010; 75 FR 37733, June 30, 2010; 75 FR 51588, Aug. 20, 2010; 78 FR 6700, Jan. 30, 2013; 87 FR 48607, Aug. 10, 2022]

§ 63.6595 When do I have to comply with this subpart?

(a) Affected sources.

- (1) If you have an existing stationary RICE, excluding existing non-emergency CI stationary RICE, with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the applicable emission limitations, operating limitations and other requirements no later than June 15, 2007. If you have an existing non-emergency CI stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, an existing stationary CI RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, or an existing stationary CI RICE located at an area source of HAP emissions, you must comply with the applicable emission limitations, operating limitations, and other requirements no later than May 3, 2013. If you have an existing stationary SI RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, or an existing stationary SI RICE located at an area source of HAP emissions, you must comply with the applicable emission limitations, operating limitations, and other requirements no later than October 19, 2013.
- (2) If you start up your new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions before August 16, 2004, you must comply with the applicable emission limitations and operating limitations in this subpart no later than August 16, 2004.
- (3) If you start up your new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions after August 16, 2004, you must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source.
- (4) If you start up your new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions before January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart no later than January 18, 2008.
- (5) If you start up your new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions after January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source.
- (6) If you start up your new or reconstructed stationary RICE located at an area source of HAP emissions before January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart no later than January 18, 2008.

- (7) If you start up your new or reconstructed stationary RICE located at an area source of HAP emissions after January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source.
- (b) **Area sources that become major sources.** If you have an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP, the compliance dates in paragraphs (b)(1) and (2) of this section apply to you.
 - (1) Any stationary RICE for which construction or reconstruction is commenced after the date when your area source becomes a major source of HAP must be in compliance with this subpart upon startup of your affected source.
 - (2) Any stationary RICE for which construction or reconstruction is commenced before your area source becomes a major source of HAP must be in compliance with the provisions of this subpart that are applicable to RICE located at major sources within 3 years after your area source becomes a major source of HAP.
- (c) If you own or operate an affected source, you must meet the applicable notification requirements in § 63.6645 and in 40 CFR part 63, subpart A.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3604, Jan. 18, 2008; 75 FR 9675, Mar. 3, 2010; 75 FR 51589, Aug. 20, 2010; 78 FR 6701, Jan. 30, 2013]

EMISSION AND OPERATING LIMITATIONS

§ 63.6600 What emission limitations and operating limitations must I meet if I own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions?

Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in § 63.6620 and Table 4 to this subpart.

- (a) If you own or operate an existing, new, or reconstructed spark ignition 4SRB stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations in Table 1a to this subpart and the operating limitations in Table 1b to this subpart which apply to you.
- (b) If you own or operate a new or reconstructed 2SLB stationary RICE with a site rating of more than 500 brake HP located at major source of HAP emissions, a new or reconstructed 4SLB stationary RICE with a site rating of more than 500 brake HP located at major source of HAP emissions, or a new or reconstructed CI stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations in Table 2a to this subpart and the operating limitations in Table 2b to this subpart which apply to you.
- (c) If you own or operate any of the following stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the emission limitations in Tables 1a, 2a, 2c, and 2d to this subpart or operating limitations in Tables 1b and 2b to this subpart: an

existing 2SLB stationary RICE; an existing 4SLB stationary RICE; a stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis; an emergency stationary RICE; or a limited use stationary RICE.

- (d) If you own or operate an existing non-emergency stationary CI RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations in Table 2c to this subpart and the operating limitations in Table 2b to this subpart which apply to you.

[73 FR 3605, Jan. 18, 2008, as amended at 75 FR 9675, Mar. 3, 2010]

§ 63.6601 What emission limitations must I meet if I own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 brake HP and less than or equal to 500 brake HP located at a major source of HAP emissions?

Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in § 63.6620 and Table 4 to this subpart. If you own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at major source of HAP emissions manufactured on or after January 1, 2008, you must comply with the emission limitations in Table 2a to this subpart and the operating limitations in Table 2b to this subpart which apply to you.

[73 FR 3605, Jan. 18, 2008, as amended at 75 FR 9675, Mar. 3, 2010; 75 FR 51589, Aug. 20, 2010]

§ 63.6602 What emission limitations and other requirements must I meet if I own or operate an existing stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions?

If you own or operate an existing stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations and other requirements in Table 2c to this subpart which apply to you. Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in § 63.6620 and Table 4 to this subpart.

[78 FR 6701, Jan. 30, 2013]

§ 63.6603 What emission limitations, operating limitations, and other requirements must I meet if I own or operate an existing stationary RICE located at an area source of HAP emissions?

Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in § 63.6620 and Table 4 to this subpart.

- (a) If you own or operate an existing stationary RICE located at an area source of HAP emissions, you must comply with the requirements in Table 2d to this subpart and the operating limitations in Table 2b to this subpart that apply to you.
- (b) If you own or operate an existing stationary non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP that meets either paragraph (b)(1) or (2) of this section, you do not have to meet the numerical CO emission limitations specified in Table 2d of this subpart. Existing stationary

non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP that meet either paragraph (b)(1) or (2) of this section must meet the management practices that are shown for stationary non-emergency CI RICE with a site rating of less than or equal to 300 HP in Table 2d of this subpart.

- (1) The area source is located in an area of Alaska that is not accessible by the Federal Aid Highway System (FAHS).
- (2) The stationary RICE is located at an area source that meets paragraphs (b)(2)(i), (ii), and (iii) of this section.
 - (i) The only connection to the FAHS is through the Alaska Marine Highway System (AMHS), or the stationary RICE operation is within an isolated grid in Alaska that is not connected to the statewide electrical grid referred to as the Alaska Railbelt Grid.
 - (ii) At least 10 percent of the power generated by the stationary RICE on an annual basis is used for residential purposes.
 - (iii) The generating capacity of the area source is less than 12 megawatts, or the stationary RICE is used exclusively for backup power for renewable energy.
- (c) If you own or operate an existing stationary non-emergency CI RICE with a site rating of more than 300 HP located on an offshore vessel that is an area source of HAP and is a nonroad vehicle that is an Outer Continental Shelf (OCS) source as defined in 40 CFR 55.2, you do not have to meet the numerical CO emission limitations specified in Table 2d of this subpart. You must meet all of the following management practices:
 - (1) Change oil every 1,000 hours of operation or within 1 year + 30 days of the previous change, whichever comes first. Sources have the option to utilize an oil analysis program as described in § 63.6625(i) in order to extend the specified oil change requirement.
 - (2) Inspect and clean air filters every 750 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary.
 - (3) Inspect fuel filters and belts, if installed, every 750 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary.
 - (4) Inspect all flexible hoses every 1,000 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary.
- (d) If you own or operate an existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions that is certified to the Tier 1 or Tier 2 emission standards in Table 1 of 40 CFR 89.112 and that is subject to an enforceable state or local standard that requires the engine to be replaced no later than June 1, 2018, you may until January 1, 2015, or 12 years after the installation date of the engine (whichever is later), but not later than June 1, 2018, choose to comply with the management practices that are shown for stationary non-emergency CI RICE with a site rating of less than or equal to 300 HP in Table 2d of this subpart instead of the applicable emission limitations in Table 2d, operating limitations in Table 2b, and crankcase ventilation system requirements in § 63.6625(g). You must comply with the emission limitations in Table 2d and operating limitations in Table 2b that apply for non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions by January 1, 2015, or 12 years after the installation date of the engine (whichever is later), but not later than

June 1, 2018. You must also comply with the crankcase ventilation system requirements in § 63.6625(g) by January 1, 2015, or 12 years after the installation date of the engine (whichever is later), but not later than June 1, 2018.

- (e) If you own or operate an existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions that is certified to the Tier 3 (Tier 2 for engines above 560 kilowatt (kW)) emission standards in Table 1 of 40 CFR 89.112, you may comply with the requirements under this part by meeting the requirements for Tier 3 engines (Tier 2 for engines above 560 kW) in 40 CFR part 60 subpart IIII instead of the emission limitations and other requirements that would otherwise apply under this part for existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions.
- (f) An existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP must meet the definition of remote stationary RICE in § 63.6675 on the initial compliance date for the engine, October 19, 2013, in order to be considered a remote stationary RICE under this subpart. Owners and operators of existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP that meet the definition of remote stationary RICE in § 63.6675 of this subpart as of October 19, 2013 must evaluate the status of their stationary RICE every 12 months. Owners and operators must keep records of the initial and annual evaluation of the status of the engine. If the evaluation indicates that the stationary RICE no longer meets the definition of remote stationary RICE in § 63.6675 of this subpart, the owner or operator must comply with all of the requirements for existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP that are not remote stationary RICE within 1 year of the evaluation.

[75 FR 9675, Mar. 3, 2010, as amended at 75 FR 51589, Aug. 20, 2010; 76 FR 12866, Mar. 9, 2011; 78 FR 6701, Jan. 30, 2013; 89 FR 70515, Aug. 30, 2024]

§ 63.6604 What fuel requirements must I meet if I own or operate a stationary CI RICE?

- (a) If you own or operate an existing non-emergency, non-black start CI stationary RICE with a site rating of more than 300 brake HP with a displacement of less than 30 liters per cylinder that uses diesel fuel, you must use diesel fuel that meets the requirements in 40 CFR 1090.305 for nonroad diesel fuel.
- (b) Beginning January 1, 2015, if you own or operate an existing emergency CI stationary RICE with a site rating of more than 100 brake HP and a displacement of less than 30 liters per cylinder that uses diesel fuel and operates for the purpose specified in § 63.6640(f)(4)(ii), you must use diesel fuel that meets the requirements in 40 CFR 1090.305 for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to January 1, 2015, may be used until depleted.
- (c) [Reserved]
- (d) Existing CI stationary RICE located in Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, at area sources in areas of Alaska that meet either § 63.6603(b)(1) or § 63.6603(b)(2), or are on offshore vessels that meet § 63.6603(c) are exempt from the requirements of this section.

[78 FR 6702, Jan. 30, 2013, as amended at 85 FR 78463, Dec. 4, 2020; 87 FR 48607, Aug. 10, 2022]

GENERAL COMPLIANCE REQUIREMENTS

§ 63.6605 What are my general requirements for complying with this subpart?

- (a) You must be in compliance with the emission limitations, operating limitations, and other requirements in this subpart that apply to you at all times.
- (b) At all times you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

[75 FR 9675, Mar. 3, 2010, as amended at 78 FR 6702, Jan. 30, 2013]

TESTING AND INITIAL COMPLIANCE REQUIREMENTS

§ 63.6610 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions?

If you own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions you are subject to the requirements of this section.

- (a) You must conduct the initial performance test or other initial compliance demonstrations in Table 4 to this subpart that apply to you within 180 days after the compliance date that is specified for your stationary RICE in § 63.6595 and according to the provisions in § 63.7(a)(2).
- (b) If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004 and own or operate stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must demonstrate initial compliance with either the proposed emission limitations or the promulgated emission limitations no later than February 10, 2005 or no later than 180 days after startup of the source, whichever is later, according to § 63.7(a)(2)(ix).
- (c) If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004 and own or operate stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, and you chose to comply with the proposed emission limitations when demonstrating initial compliance, you must conduct a second performance test to demonstrate compliance with the promulgated emission limitations by December 13, 2007 or after startup of the source, whichever is later, according to § 63.7(a)(2)(ix).
- (d) An owner or operator is not required to conduct an initial performance test on units for which a performance test has been previously conducted, but the test must meet all of the conditions described in paragraphs (d)(1) through (5) of this section.
 - (1) The test must have been conducted using the same methods specified in this subpart, and these methods must have been followed correctly.
 - (2) The test must not be older than 2 years.

- (3) The test must be reviewed and accepted by the Administrator.
- (4) Either no process or equipment changes must have been made since the test was performed, or the owner or operator must be able to demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process or equipment changes.
- (5) The test must be conducted at any load condition within plus or minus 10 percent of 100 percent load.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3605, Jan. 18, 2008]

§ 63.6611 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate a new or reconstructed 4SLB SI stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions?

If you own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions, you must conduct an initial performance test within 240 days after the compliance date that is specified for your stationary RICE in § 63.6595 and according to the provisions specified in Table 4 to this subpart, as appropriate.

[73 FR 3605, Jan. 18, 2008, as amended at 75 FR 51589, Aug. 20, 2010]

§ 63.6612 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate an existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing stationary RICE located at an area source of HAP emissions?

If you own or operate an existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing stationary RICE located at an area source of HAP emissions you are subject to the requirements of this section.

- (a) You must conduct any initial performance test or other initial compliance demonstration according to Tables 4 and 5 to this subpart that apply to you within 180 days after the compliance date that is specified for your stationary RICE in § 63.6595 and according to the provisions in § 63.7(a)(2).
- (b) An owner or operator is not required to conduct an initial performance test on a unit for which a performance test has been previously conducted, but the test must meet all of the conditions described in paragraphs (b)(1) through (4) of this section.
 - (1) The test must have been conducted using the same methods specified in this subpart, and these methods must have been followed correctly.
 - (2) The test must not be older than 2 years.
 - (3) The test must be reviewed and accepted by the Administrator.
 - (4) Either no process or equipment changes must have been made since the test was performed, or the owner or operator must be able to demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process or equipment changes.

[75 FR 9676, Mar. 3, 2010, as amended at 75 FR 51589, Aug. 20, 2010]

§ 63.6615 When must I conduct subsequent performance tests?

If you must comply with the emission limitations and operating limitations, you must conduct subsequent performance tests as specified in Table 3 of this subpart.

§ 63.6620 What performance tests and other procedures must I use?

- (a) You must conduct each performance test in Tables 3 and 4 of this subpart that applies to you.
- (b) Each performance test must be conducted according to the requirements that this subpart specifies in Table 4 to this subpart. If you own or operate a non-operational stationary RICE that is subject to performance testing, you do not need to start up the engine solely to conduct the performance test. Owners and operators of a non-operational engine can conduct the performance test when the engine is started up again. The test must be conducted at any load condition within plus or minus 10 percent of 100 percent load for the stationary RICE listed in paragraphs (b)(1) through (4) of this section.
 - (1) Non-emergency 4SRB stationary RICE with a site rating of greater than 500 brake HP located at a major source of HAP emissions.
 - (2) New non-emergency 4SLB stationary RICE with a site rating of greater than or equal to 250 brake HP located at a major source of HAP emissions.
 - (3) New non-emergency 2SLB stationary RICE with a site rating of greater than 500 brake HP located at a major source of HAP emissions.
 - (4) New non-emergency CI stationary RICE with a site rating of greater than 500 brake HP located at a major source of HAP emissions.
- (c) [Reserved]
- (d) You must conduct three separate test runs for each performance test required in this section, as specified in § 63.7(e)(3). Each test run must last at least 1 hour, unless otherwise specified in this subpart.
- (e)
 - (1) You must use Equation 1 of this section to determine compliance with the percent reduction requirement:

$$\frac{C_i - C_o}{C_i} \times 100 = R \quad (\text{Eq. 1})$$

Where:

C_i = concentration of carbon monoxide (CO), total hydrocarbons (THC), or formaldehyde at the control device inlet,

C_o = concentration of CO, THC, or formaldehyde at the control device outlet, and

R = percent reduction of CO, THC, or formaldehyde emissions.

- (2) You must normalize the CO, THC, or formaldehyde concentrations at the inlet and outlet of the control device to a dry basis and to 15 percent oxygen, or an equivalent percent carbon dioxide (CO₂). If pollutant concentrations are to be corrected to 15 percent oxygen and CO₂ concentration is measured in lieu of oxygen concentration measurement, a CO₂ correction factor is needed. Calculate the CO₂ correction factor as described in paragraphs (e)(2)(i) through (iii) of this section.

- (i) Calculate the fuel-specific F_o value for the fuel burned during the test using values obtained from Method 19, Section 5.2, and the following equation:

$$F_o = \frac{0.209 F_d}{F_c} \quad (Eq. 2)$$

Where:

F_o = Fuel factor based on the ratio of oxygen volume to the ultimate CO₂ volume produced by the fuel at zero percent excess air.

0.209 = Fraction of air that is oxygen, percent/100.

F_d = Ratio of the volume of dry effluent gas to the gross calorific value of the fuel from Method 19, dsm³/J (dscf/10⁶ Btu).

F_c = Ratio of the volume of CO₂ produced to the gross calorific value of the fuel from Method 19, dsm³/J (dscf/10⁶ Btu)

- (ii) Calculate the CO₂ correction factor for correcting measurement data to 15 percent O₂, as follows:

$$X_{CO2} = \frac{5.9}{F_o} \quad (Eq. 3)$$

Where:

X_{CO2} = CO₂ correction factor, percent.

5.9 = 20.9 percent O₂—15 percent O₂, the defined O₂ correction value, percent.

- (iii) Calculate the CO, THC, and formaldehyde gas concentrations adjusted to 15 percent O₂ using CO₂ as follows:

$$C_{adj} = C_d \frac{X_{CO2}}{\%CO_2} \quad (Eq. 4)$$

Where:

C_{adj} = Calculated concentration of CO, THC, or formaldehyde adjusted to 15 percent O₂.

C_d = Measured concentration of CO, THC, or formaldehyde, uncorrected.

X_{CO_2} = CO₂ correction factor, percent.

%CO₂ = Measured CO₂ concentration measured, dry basis, percent.

- (f) If you comply with the emission limitation to reduce CO and you are not using an oxidation catalyst, if you comply with the emission limitation to reduce formaldehyde and you are not using NSCR, or if you comply with the emission limitation to limit the concentration of formaldehyde in the stationary RICE exhaust and you are not using an oxidation catalyst or NSCR, you must petition the Administrator for operating limitations to be established during the initial performance test and continuously monitored thereafter; or for approval of no operating limitations. You must not conduct the initial performance test until after the petition has been approved by the Administrator.
- (g) If you petition the Administrator for approval of operating limitations, your petition must include the information described in paragraphs (g)(1) through (5) of this section.
 - (1) Identification of the specific parameters you propose to use as operating limitations;
 - (2) A discussion of the relationship between these parameters and HAP emissions, identifying how HAP emissions change with changes in these parameters, and how limitations on these parameters will serve to limit HAP emissions;
 - (3) A discussion of how you will establish the upper and/or lower values for these parameters which will establish the limits on these parameters in the operating limitations;
 - (4) A discussion identifying the methods you will use to measure and the instruments you will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments; and
 - (5) A discussion identifying the frequency and methods for recalibrating the instruments you will use for monitoring these parameters.
- (h) If you petition the Administrator for approval of no operating limitations, your petition must include the information described in paragraphs (h)(1) through (7) of this section.
 - (1) Identification of the parameters associated with operation of the stationary RICE and any emission control device which could change intentionally (e.g., operator adjustment, automatic controller adjustment, etc.) or unintentionally (e.g., wear and tear, error, etc.) on a routine basis or over time;
 - (2) A discussion of the relationship, if any, between changes in the parameters and changes in HAP emissions;
 - (3) For the parameters which could change in such a way as to increase HAP emissions, a discussion of whether establishing limitations on the parameters would serve to limit HAP emissions;
 - (4) For the parameters which could change in such a way as to increase HAP emissions, a discussion of how you could establish upper and/or lower values for the parameters which would establish limits on the parameters in operating limitations;
 - (5) For the parameters, a discussion identifying the methods you could use to measure them and the instruments you could use to monitor them, as well as the relative accuracy and precision of the methods and instruments;
 - (6) For the parameters, a discussion identifying the frequency and methods for recalibrating the instruments you could use to monitor them; and

- (7) A discussion of why, from your point of view, it is infeasible or unreasonable to adopt the parameters as operating limitations.
- (i) The engine percent load during a performance test must be determined by documenting the calculations, assumptions, and measurement devices used to measure or estimate the percent load in a specific application. A written report of the average percent load determination must be included in the notification of compliance status. The following information must be included in the written report: the engine model number, the engine manufacturer, the year of purchase, the manufacturer's site-rated brake horsepower, the ambient temperature, pressure, and humidity during the performance test, and all assumptions that were made to estimate or calculate percent load during the performance test must be clearly explained. If measurement devices such as flow meters, kilowatt meters, beta analyzers, stain gauges, etc. are used, the model number of the measurement device, and an estimate of its accurate in percentage of true value must be provided.
- (j) Beginning on February 26, 2025, within 60 days after the date of completing each performance test required by this subpart, you must submit the results of the performance test following the procedure specified in § 63.9(k). Data collected using test methods supported by the EPA's Electronic Reporting Tool (ERT) as listed on the EPA's ERT website (<https://www.epa.gov/electronic-reporting-air-emissions/electronic-reporting-tool-ert>) at the time of the test must be submitted in a file format generated using the EPA's ERT. Alternatively, you may submit an electronic file consistent with the extensible markup language (XML) schema listed on the EPA's ERT website. Data collected using test methods that are not supported by the EPA's ERT as listed on the EPA's ERT website at the time of the test must be included as an attachment in the ERT or alternate electronic file.

[69 FR 33506, June 15, 2004, as amended at 75 FR 9676, Mar. 3, 2010; 78 FR 6702, Jan. 30, 2013; 89 FR 70516, Aug. 30, 2024]

§ 63.6625 What are my monitoring, installation, collection, operation, and maintenance requirements?

- (a) If you elect to install a CEMS as specified in Table 5 of this subpart, you must install, operate, and maintain a CEMS to monitor CO and either O₂ or CO₂ according to the requirements in paragraphs (a)(1) through (4) of this section. If you are meeting a requirement to reduce CO emissions, the CEMS must be installed at both the inlet and outlet of the control device. If you are meeting a requirement to limit the concentration of CO, the CEMS must be installed at the outlet of the control device.
 - (1) Each CEMS must be installed, operated, and maintained according to the applicable performance specifications of 40 CFR part 60, appendix B.
 - (2) You must conduct an initial performance evaluation and an annual relative accuracy test audit (RATA) of each CEMS according to the requirements in § 63.8 and according to the applicable performance specifications of 40 CFR part 60, appendix B as well as daily and periodic data quality checks in accordance with 40 CFR part 60, appendix F, procedure 1.
 - (3) As specified in § 63.8(c)(4)(ii), each CEMS must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period. You must have at least two data points, with each representing a different 15-minute period, to have a valid hour of data.
 - (4) The CEMS data must be reduced as specified in § 63.8(g)(2) and recorded in parts per million or parts per billion (as appropriate for the applicable limitation) at 15 percent oxygen or the equivalent CO₂ concentration.

(5) Beginning on February 26, 2025, within 60 days after the date of completing each continuous emissions monitoring system (CEMS) performance evaluation (as defined in § 63.2) that includes a relative accuracy test audit (RATA), you must submit the results of the performance evaluation following the procedures specified in § 63.9(k). The results of performance evaluations of CEMS measuring RATA pollutants that are supported by the EPA's ERT as listed on the EPA's ERT website at the time of the evaluation must be submitted in a file format generated using the EPA's ERT. Alternatively, you may submit an electronic file consistent with the XML schema listed on the EPA's ERT website. The results of performance evaluations of CEMS measuring RATA pollutants that are not supported by the EPA's ERT as listed on the EPA's ERT website at the time of the evaluation must be included as an attachment in the ERT or alternate electronic file.

(b) If you are required to install a continuous parameter monitoring system (CPMS) as specified in Table 5 of this subpart, you must install, operate, and maintain each CPMS according to the requirements in paragraphs (b)(1) through (6) of this section. For an affected source that is complying with the emission limitations and operating limitations on March 9, 2011, the requirements in paragraph (b) of this section are applicable September 6, 2011.

(1) You must prepare a site-specific monitoring plan that addresses the monitoring system design, data collection, and the quality assurance and quality control elements outlined in paragraphs (b)(1)(i) through (v) of this section and in § 63.8(d). As specified in § 63.8(f)(4), you may request approval of monitoring system quality assurance and quality control procedures alternative to those specified in paragraphs (b)(1) through (5) of this section in your site-specific monitoring plan.

(i) The performance criteria and design specifications for the monitoring system equipment, including the sample interface, detector signal analyzer, and data acquisition and calculations;

(ii) Sampling interface (e.g., thermocouple) location such that the monitoring system will provide representative measurements;

(iii) Equipment performance evaluations, system accuracy audits, or other audit procedures;

(iv) Ongoing operation and maintenance procedures in accordance with provisions in § 63.8(c)(1)(ii) and (c)(3); and

(v) Ongoing reporting and recordkeeping procedures in accordance with provisions in § 63.10(c), (e)(1), and (e)(2)(i).

(2) You must install, operate, and maintain each CPMS in continuous operation according to the procedures in your site-specific monitoring plan.

(3) The CPMS must collect data at least once every 15 minutes (see also § 63.6635).

(4) For a CPMS for measuring temperature range, the temperature sensor must have a minimum tolerance of 2.8 degrees Celsius (5 degrees Fahrenheit) or 1 percent of the measurement range, whichever is larger.

(5) You must conduct the CPMS equipment performance evaluation, system accuracy audits, or other audit procedures specified in your site-specific monitoring plan at least annually.

(6) You must conduct a performance evaluation of each CPMS in accordance with your site-specific monitoring plan.

- (c) If you are operating a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must monitor and record your fuel usage daily with separate fuel meters to measure the volumetric flow rate of each fuel. In addition, you must operate your stationary RICE in a manner which reasonably minimizes HAP emissions.
- (d) If you are operating a new or reconstructed emergency 4SLB stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions, you must install a non-resettable hour meter prior to the startup of the engine.
- (e) If you own or operate any of the following stationary RICE, you must operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions:
 - (1) An existing stationary RICE with a site rating of less than 100 HP located at a major source of HAP emissions;
 - (2) An existing emergency or black start stationary RICE with a site rating of less than or equal to 500 HP located at a major source of HAP emissions;
 - (3) An existing emergency or black start stationary RICE located at an area source of HAP emissions;
 - (4) An existing non-emergency, non-black start stationary CI RICE with a site rating less than or equal to 300 HP located at an area source of HAP emissions;
 - (5) An existing non-emergency, non-black start 2SLB stationary RICE located at an area source of HAP emissions;
 - (6) An existing non-emergency, non-black start stationary RICE located at an area source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis.
 - (7) An existing non-emergency, non-black start 4SLB stationary RICE with a site rating less than or equal to 500 HP located at an area source of HAP emissions;
 - (8) An existing non-emergency, non-black start 4SRB stationary RICE with a site rating less than or equal to 500 HP located at an area source of HAP emissions;
 - (9) An existing, non-emergency, non-black start 4SLB stationary RICE with a site rating greater than 500 HP located at an area source of HAP emissions that is operated 24 hours or less per calendar year; and
 - (10) An existing, non-emergency, non-black start 4SRB stationary RICE with a site rating greater than 500 HP located at an area source of HAP emissions that is operated 24 hours or less per calendar year.
- (f) If you own or operate an existing emergency stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing emergency stationary RICE located at an area source of HAP emissions, you must install a non-resettable hour meter if one is not already installed.
- (g) If you own or operate an existing non-emergency, non-black start CI engine greater than or equal to 300 HP that is not equipped with a closed crankcase ventilation system, you must comply with either paragraph (g)(1) or paragraph (2) of this section. Owners and operators must follow the manufacturer's

specified maintenance requirements for operating and maintaining the open or closed crankcase ventilation systems and replacing the crankcase filters, or can request the Administrator to approve different maintenance requirements that are as protective as manufacturer requirements. Existing CI engines located at area sources in areas of Alaska that meet either § 63.6603(b)(1) or § 63.6603(b)(2) do not have to meet the requirements of this paragraph (g). Existing CI engines located on offshore vessels that meet § 63.6603(c) do not have to meet the requirements of this paragraph (g).

- (1) Install a closed crankcase ventilation system that prevents crankcase emissions from being emitted to the atmosphere, or
 - (2) Install an open crankcase filtration emission control system that reduces emissions from the crankcase by filtering the exhaust stream to remove oil mist, particulates and metals.
- (h) If you operate a new, reconstructed, or existing stationary engine, you must minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards applicable to all times other than startup in Tables 1a, 2a, 2c, and 2d to this subpart apply.
- (i) If you own or operate a stationary CI engine that is subject to the work, operation or management practices in items 1 or 2 of table 2c to this subpart or in items 1 or 4 of table 2d to this subpart, you have the option of utilizing an oil analysis program in order to extend the specified oil and filter change requirement in tables 2c and 2d to this subpart. The oil analysis must be performed at the same frequency specified for changing the oil and filter in table 2c or 2d to this subpart. The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Base Number is less than 30 percent of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil and filter. If any of the limits are exceeded, the engine owner or operator must change the oil and filter within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil and filter within 2 business days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil and filter changes for the engine. The analysis program must be part of the maintenance plan for the engine.
- (j) If you own or operate a stationary SI engine that is subject to the work, operation or management practices in items 6, 7, or 8 of table 2c to this subpart or in items 5, 6, 7, 8, 10, 11, or 13 of table 2d to this subpart, you have the option of utilizing an oil analysis program in order to extend the specified oil and filter change requirement in tables 2c and 2d to this subpart. The oil analysis must be performed at the same frequency specified for changing the oil and filter in table 2c or 2d to this subpart. The analysis program must at a minimum analyze the following three parameters: Total Acid Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Acid Number increases by more than 3.0 milligrams of potassium hydroxide (KOH) per gram from Total Acid Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil and filter. If any of the limits are exceeded, the engine owner or operator must change the oil and filter within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil and filter within 2 business days or before

commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil and filter changes for the engine. The analysis program must be part of the maintenance plan for the engine.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3606, Jan. 18, 2008; 75 FR 9676, Mar. 3, 2010; 75 FR 51589, Aug. 20, 2010; 76 FR 12866, Mar. 9, 2011; 78 FR 6703, Jan. 30, 2013; 89 FR 70516, Aug. 30, 2024]

§ 63.6630 How do I demonstrate initial compliance with the emission limitations, operating limitations, and other requirements?

- (a) You must demonstrate initial compliance with each emission limitation, operating limitation, and other requirement that applies to you according to Table 5 of this subpart.
- (b) During the initial performance test, you must establish each operating limitation in Tables 1b and 2b of this subpart that applies to you.
- (c) You must submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in § 63.6645.
- (d) Non-emergency 4SRB stationary RICE complying with the requirement to reduce formaldehyde emissions by 76 percent or more can demonstrate initial compliance with the formaldehyde emission limit by testing for THC instead of formaldehyde. The testing must be conducted according to the requirements in Table 4 of this subpart. The average reduction of emissions of THC determined from the performance test must be equal to or greater than 30 percent.
- (e) The initial compliance demonstration required for existing non-emergency 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year must be conducted according to the following requirements:
 - (1) The compliance demonstration must consist of at least three test runs.
 - (2) Each test run must be of at least 15 minute duration, except that each test conducted using the method in appendix A to this subpart must consist of at least one measurement cycle and include at least 2 minutes of test data phase measurement.
 - (3) If you are demonstrating compliance with the CO concentration or CO percent reduction requirement, you must measure CO emissions using one of the CO measurement methods specified in Table 4 of this subpart, or using appendix A to this subpart.
 - (4) If you are demonstrating compliance with the THC percent reduction requirement, you must measure THC emissions using Method 25A, reported as propane, of 40 CFR part 60, appendix A.
 - (5) You must measure O₂ using one of the O₂ measurement methods specified in Table 4 of this subpart. Measurements to determine O₂ concentration must be made at the same time as the measurements for CO or THC concentration.
 - (6) If you are demonstrating compliance with the CO or THC percent reduction requirement, you must measure CO or THC emissions and O₂ emissions simultaneously at the inlet and outlet of the control device.

[69 FR 33506, June 15, 2004, as amended at 78 FR 6704, Jan. 30, 2013]

CONTINUOUS COMPLIANCE REQUIREMENTS

§ 63.6635 How do I monitor and collect data to demonstrate continuous compliance?

- (a) If you must comply with emission and operating limitations, you must monitor and collect data according to this section.
- (b) Except for monitor malfunctions, associated repairs, required performance evaluations, and required quality assurance or control activities, you must monitor continuously at all times that the stationary RICE is operating. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.
- (c) You may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels. You must, however, use all the valid data collected during all other periods.

[69 FR 33506, June 15, 2004, as amended at 76 FR 12867, Mar. 9, 2011]

§ 63.6640 How do I demonstrate continuous compliance with the emission limitations, operating limitations, and other requirements?

- (a) You must demonstrate continuous compliance with each emission limitation, operating limitation, and other requirements in Tables 1a and 1b, Tables 2a and 2b, Table 2c, and Table 2d to this subpart that apply to you according to methods specified in Table 6 to this subpart.
- (b) You must report each instance in which you did not meet each emission limitation or operating limitation in Tables 1a and 1b, Tables 2a and 2b, Table 2c, and Table 2d to this subpart that apply to you. These instances are deviations from the emission and operating limitations in this subpart. These deviations must be reported according to the requirements in § 63.6650. If you change your catalyst, you must reestablish the values of the operating parameters measured during the initial performance test. When you reestablish the values of your operating parameters, you must also conduct a performance test to demonstrate that you are meeting the required emission limitation applicable to your stationary RICE.
- (c) The annual compliance demonstration required for existing non-emergency 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year must be conducted according to the following requirements:
 - (1) The compliance demonstration must consist of at least one test run.
 - (2) Each test run must be of at least 15 minute duration, except that each test conducted using the method in appendix A to this subpart must consist of at least one measurement cycle and include at least 2 minutes of test data phase measurement.
 - (3) If you are demonstrating compliance with the CO concentration or CO percent reduction requirement, you must measure CO emissions using one of the CO measurement methods specified in Table 4 of this subpart, or using appendix A to this subpart.
 - (4) If you are demonstrating compliance with the THC percent reduction requirement, you must measure THC emissions using Method 25A, reported as propane, of 40 CFR part 60, appendix A.

- (5) You must measure O₂ using one of the O₂ measurement methods specified in Table 4 of this subpart. Measurements to determine O₂ concentration must be made at the same time as the measurements for CO or THC concentration.
- (6) If you are demonstrating compliance with the CO or THC percent reduction requirement, you must measure CO or THC emissions and O₂ emissions simultaneously at the inlet and outlet of the control device.
- (7) If the results of the annual compliance demonstration show that the emissions exceed the levels specified in Table 6 of this subpart, the stationary RICE must be shut down as soon as safely possible, and appropriate corrective action must be taken (e.g., repairs, catalyst cleaning, catalyst replacement). The stationary RICE must be retested within 7 days of being restarted and the emissions must meet the levels specified in Table 6 of this subpart. If the retest shows that the emissions continue to exceed the specified levels, the stationary RICE must again be shut down as soon as safely possible, and the stationary RICE may not operate, except for purposes of startup and testing, until the owner/operator demonstrates through testing that the emissions do not exceed the levels specified in Table 6 of this subpart.
- (d) For new, reconstructed, and rebuilt stationary RICE, deviations from the emission or operating limitations that occur during the first 200 hours of operation from engine startup (engine burn-in period) are not violations. Rebuilt stationary RICE means a stationary RICE that has been rebuilt as that term is defined in 40 CFR 94.11(a).
- (e) You must also report each instance in which you did not meet the requirements in Table 8 to this subpart that apply to you. If you own or operate a new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions (except new or reconstructed 4SLB engines greater than or equal to 250 and less than or equal to 500 brake HP), a new or reconstructed stationary RICE located at an area source of HAP emissions, or any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the requirements in Table 8 to this subpart: An existing 2SLB stationary RICE, an existing 4SLB stationary RICE, an existing emergency stationary RICE, an existing limited use stationary RICE, or an existing stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis. If you own or operate any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the requirements in Table 8 to this subpart, except for the initial notification requirements: a new or reconstructed stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, a new or reconstructed emergency stationary RICE, or a new or reconstructed limited use stationary RICE.
- (f) If you own or operate an emergency stationary RICE, you must operate the emergency stationary RICE according to the requirements in paragraphs (f)(1) through (4) of this section. In order for the engine to be considered an emergency stationary RICE under this subpart, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (f)(1) through (4), is prohibited. If you do not operate the engine according to the requirements in paragraphs (f)(1) through (4), the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines.
- (1) There is no time limit on the use of emergency stationary RICE in emergency situations.

- (2) You may operate your emergency stationary RICE for the purpose specified in paragraph (f)(2)(i) of this section for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraphs (f)(3) and (4) of this section counts as part of the 100 hours per calendar year allowed by this paragraph (f)(2).
 - (i) Emergency stationary RICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency RICE beyond 100 hours per calendar year.
 - (ii)-(iii) [Reserved]
- (3) Emergency stationary RICE located at major sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in paragraph (f)(2) of this section. The 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.
- (4) Emergency stationary RICE located at area sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in paragraph (f)(2) of this section. Except as provided in paragraphs (f)(4)(i) and (ii) of this section, the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.
 - (i) Prior to May 3, 2014, the 50 hours per year for non-emergency situations can be used for peak shaving or non-emergency demand response to generate income for a facility, or to otherwise supply power as part of a financial arrangement with another entity if the engine is operated as part of a peak shaving (load management program) with the local distribution system operator and the power is provided only to the facility itself or to support the local distribution system.
 - (ii) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:
 - (A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator.
 - (B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.
 - (C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.

- (D) The power is provided only to the facility itself or to support the local transmission and distribution system.
- (E) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

[69 FR 33506, June 15, 2004, as amended at 71 FR 20467, Apr. 20, 2006; 73 FR 3606, Jan. 18, 2008; 75 FR 9676, Mar. 3, 2010; 75 FR 51591, Aug. 20, 2010; 78 FR 6704, Jan. 30, 2013; 87 FR 48607, Aug. 10, 2022]

NOTIFICATIONS, REPORTS, AND RECORDS

§ 63.6645 What notifications must I submit and when?

- (a) You must submit all of the notifications in §§ 63.7(b) and (c), 63.8(e), (f)(4) and (f)(6), 63.9(b) through (e), and (g) and (h) that apply to you by the dates specified if you own or operate any of the following:
 - (1) An existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions.
 - (2) An existing stationary RICE located at an area source of HAP emissions.
 - (3) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.
 - (4) A new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 HP located at a major source of HAP emissions.
 - (5) This requirement does not apply if you own or operate an existing stationary RICE less than 100 HP, an existing stationary emergency RICE, or an existing stationary RICE that is not subject to any numerical emission standards.
- (b) As specified in § 63.9(b)(2), if you start up your stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions before the effective date of this subpart, you must submit an initial notification not later than December 13, 2004, or no later than 120 days after the source becomes subject to this subpart, whichever is later. Beginning on February 26, 2025, submit the notification electronically in portable document format (PDF) consistent with § 63.9(k).
- (c) If you start up your new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions on or after August 16, 2004, you must submit an initial notification not later than 120 days after you become subject to this subpart. Beginning on February 26, 2025, submit the notification electronically in PDF consistent with § 63.9(k).
- (d) As specified in § 63.9(b)(2), if you start up your stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions before the effective date of this subpart and you are required to submit an initial notification, you must submit an initial notification not later than July 16, 2008, or no later than 120 days after the source becomes subject to this subpart, whichever is later. Beginning on February 26, 2025, submit the notification electronically in PDF consistent with § 63.9(k).

- (e) If you start up your new or reconstructed stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions on or after March 18, 2008, and you are required to submit an initial notification, you must submit an initial notification not later than 120 days after you become subject to this subpart. Beginning on February 26, 2025, submit the notification electronically in PDF consistent with § 63.9(k).
- (f) If you are required to submit an Initial Notification but are otherwise not affected by the requirements of this subpart, in accordance with § 63.6590(b), your notification should include the information in § 63.9(b)(2)(i) through (v), and a statement that your stationary RICE has no additional requirements and explain the basis of the exclusion (for example, that it operates exclusively as an emergency stationary RICE if it has a site rating of more than 500 brake HP located at a major source of HAP emissions).
- (g) If you are required to conduct a performance test, you must submit a Notification of Intent to conduct a performance test at least 60 days before the performance test is scheduled to begin as required in § 63.7(b)(1).
- (h) If you are required to conduct a performance test or other initial compliance demonstration as specified in Tables 4 and 5 to this subpart, you must submit a Notification of Compliance Status according to § 63.9(h)(2)(ii).
 - (1) For each initial compliance demonstration required in Table 5 to this subpart that does not include a performance test, you must submit the Notification of Compliance Status before the close of business on the 30th day following the completion of the initial compliance demonstration.
 - (2) Before February 26, 2025, for each initial compliance demonstration required in table 5 to this subpart that includes a performance test conducted according to the requirements in table 3 to this subpart, you must submit the Notification of Compliance Status, including the performance test results, before the close of business on the 60th day following the completion of the performance test according to § 63.10(d)(2). Beginning on February 26, 2025, for each initial compliance demonstration required in table 5 to this subpart that includes a performance test conducted according to the requirements in table 3 to this subpart, you must submit the Notification of Compliance Status, including a summary of the performance test results, in PDF to the EPA via the Compliance and Emissions Data Reporting Interface (CEDRI), before the close of business on the 60th day following the completion of the performance test following the procedure specified in § 63.9(k), except any Confidential Business Information (CBI) is to be submitted according to paragraphs (h)(2)(i) and (ii) of this section. Do not use CEDRI to submit information you claim as CBI. Although we do not expect persons to assert a claim of CBI, if you wish to assert a CBI claim for some of the information in the report, you must submit a complete file, including information claimed to be CBI, to the EPA following the procedures in paragraphs (h)(2)(i) and (ii) of this section. Clearly mark the part or all of the information that you claim to be CBI. Information not marked as CBI may be authorized for public release without prior notice. Information marked as CBI will not be disclosed except in accordance with procedures set forth in 40 CFR part 2. All CBI claims must be asserted at the time of submission. Anything submitted using CEDRI cannot later be claimed CBI. Furthermore, under CAA section 114(c), emissions data is not entitled to confidential treatment, and the EPA is required to make emissions data available to the public. Thus, emissions data will not be protected as CBI and will be made publicly available. You must submit the same file submitted to the CBI office with the CBI omitted to the EPA via the EPA's CDX as described earlier in this paragraph (h)(2).

- (i) The preferred method to receive CBI is for it to be transmitted electronically using email attachments, File Transfer Protocol, or other online file sharing services. Electronic submissions must be transmitted directly to the OAQPS CBI Office at the email address oaqpscbi@epa.gov, and as described in paragraph (h)(2) of this section, should include clear CBI markings and be flagged to the attention of the Reciprocating Internal Combustion Engine Sector Lead. If assistance is needed with submitting large electronic files that exceed the file size limit for email attachments, and if you do not have your own file sharing service, please email oaqpscbi@epa.gov to request a file transfer link.
 - (ii) If you cannot transmit the file electronically, you may send CBI information through the postal service to the following address: OAQPS Document Control Officer (C404-02), OAQPS, U.S. Environmental Protection Agency, 109 T.W. Alexander Drive, P.O. Box 12055, Research Triangle Park, North Carolina 27711, Attention Reciprocating Internal Combustion Engine Sector Lead. The mailed CBI material should be double wrapped and clearly marked. Any CBI markings should not show through the outer envelope.
- (i) If you own or operate an existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions that is certified to the Tier 1 or Tier 2 emission standards in Table 1 of 40 CFR 89.112 and subject to an enforceable state or local standard requiring engine replacement and you intend to meet management practices rather than emission limits, as specified in § 63.6603(d), you must submit a notification by March 3, 2013, stating that you intend to use the provision in § 63.6603(d) and identifying the state or local regulation that the engine is subject to.

[73 FR 3606, Jan. 18, 2008, as amended at 75 FR 9677, Mar. 3, 2010; 75 FR 51591, Aug. 20, 2010; 78 FR 6705, Jan. 30, 2013; 85 FR 73912, Nov. 19, 2020; 89 FR 70516, Aug. 30, 2024]

§ 63.6650 What reports must I submit and when?

- (a) You must submit each report in Table 7 of this subpart that applies to you.
- (b) Unless the Administrator has approved a different schedule for submission of reports under § 63.10(a), you must submit each report by the date in Table 7 of this subpart and according to the requirements in paragraphs (b)(1) through (b)(9) of this section.
 - (1) For semiannual Compliance reports, the first Compliance report must cover the period beginning on the compliance date that is specified for your affected source in § 63.6595 and ending on June 30 or December 31, whichever date is the first date following the end of the first calendar half after the compliance date that is specified for your source in § 63.6595.
 - (2) For semiannual Compliance reports, the first Compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date follows the end of the first calendar half after the compliance date that is specified for your affected source in § 63.6595.
 - (3) For semiannual Compliance reports, each subsequent Compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.
 - (4) For semiannual Compliance reports, each subsequent Compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period.

- (5) For each stationary RICE that is subject to permitting regulations pursuant to 40 CFR part 70 or 71, and if the permitting authority has established dates for submitting semiannual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6 (a)(3)(iii)(A), you may submit the first and subsequent Compliance reports according to the dates the permitting authority has established instead of according to the dates in paragraphs (b)(1) through (b)(4) of this section.
 - (6) For annual Compliance reports, the first Compliance report must cover the period beginning on the compliance date that is specified for your affected source in § 63.6595 and ending on December 31.
 - (7) For annual Compliance reports, the first Compliance report must be postmarked or delivered no later than January 31 following the end of the first calendar year after the compliance date that is specified for your affected source in § 63.6595.
 - (8) For annual Compliance reports, each subsequent Compliance report must cover the annual reporting period from January 1 through December 31.
 - (9) For annual Compliance reports, each subsequent Compliance report must be postmarked or delivered no later than January 31.
- (c) The Compliance report must contain the information in paragraphs (c)(1) through (8) of this section.
- (1) Company name and address.
 - (2) Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report.
 - (3) Date of report and beginning and ending dates of the reporting period.
 - (4) If you had a malfunction during the reporting period, the compliance report must include the starting and ending date and time, the duration (in hours), and a brief description for each malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions in accordance with § 63.6605(b), including actions taken to correct a malfunction.
 - (5) If there are no deviations from any emission or operating limitations that apply to you, a statement that there were no deviations from the emission or operating limitations during the reporting period.
 - (6) If there were no periods during which the continuous monitoring system (CMS), including CEMS and CPMS, was out-of-control, as specified in § 63.8(c)(7), a statement that there were no periods during which the CMS was out-of-control during the reporting period.
 - (7) Engine site rating in brake HP, year construction of the engine commenced (as defined in § 63.2, where the exact year is not known, provide the best estimate), and type of engine (CI, SI 2SLB, SI 4SLB, or SI 4SRB).
 - (8) Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place.
 - (9) An engine can be claimed as exempt from reporting coordinates (latitude/longitude) via CEDRI if:
 - (i) During the reporting period, the engine will be owned by, or operated by or for, an agency of the Federal Government responsible for national defense; and
 - (ii) The agency determines that disclosing the coordinates to the general public would be a threat to national security.

- (d) For each deviation from an emission or operating limitation that occurs for a stationary RICE where you are not using a CMS to comply with the emission or operating limitations in this subpart, the Compliance report must contain the information in paragraphs (c)(1) through (8) of this section and the information in paragraphs (d)(1) and (2) of this section.
 - (1) The total operating time (in hours) of the stationary RICE at which the deviation occurred during the reporting period.
 - (2) Information on the number, duration (in hours), and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.
 - (3) A description of any changes in processes, or controls since the last reporting period.
- (e) For each deviation from an emission or operating limitation occurring for a stationary RICE where you are using a CMS to comply with the emission and operating limitations in this subpart, you must include information in paragraphs (c)(1) through (8) and (e)(1) through (13) of this section.
 - (1) The date and time that each malfunction started and stopped.
 - (2) The start and end date and time and the duration (in hours) that each CMS was inoperative, except for zero (low-level) and high-level checks.
 - (3) The start and end date and time and the duration (in hours) that each CMS was out-of-control, including the information in § 63.8(c)(8).
 - (4) The date and time that each deviation started and stopped, and whether each deviation occurred during a period of malfunction or during another period.
 - (5) A summary of the total duration (in hours) of the deviation during the reporting period, and the total duration as a percent of the total source operating time during that reporting period.
 - (6) A breakdown of the total duration (in hours) of the deviations during the reporting period into those that are due to control equipment problems, process problems, other known causes, and other unknown causes.
 - (7) A summary of the total duration (in hours) of CMS downtime during the reporting period, and the total duration of CMS downtime as a percent of the total operating time of the stationary RICE at which the CMS downtime occurred during that reporting period.
 - (8) An identification of each parameter and pollutant (CO or formaldehyde) that was monitored at the stationary RICE.
 - (9) [Reserved]
 - (10) A brief description of the CMS.
 - (11) The date of the latest CMS certification or audit.
 - (12) A description of any changes in CMS, processes, or controls since the last reporting period.
 - (13) The total operating time of the stationary RICE at which the deviation occurred during the reporting period.
- (f) Each affected source that has obtained a title V operating permit pursuant to 40 CFR part 70 or 71 must report all deviations as defined in this subpart in the semiannual monitoring report required by 40 CFR 70.6 (a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A). If an affected source submits a Compliance report pursuant

to table 7 of this subpart along with, or as part of, the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), and the Compliance report includes all required information concerning deviations from any emission or operating limitation in this subpart, submission of the Compliance report shall be deemed to satisfy any obligation to report the same deviations in the semiannual monitoring report. However, submission of a Compliance report shall not otherwise affect any obligation the affected source may have to report deviations from permit requirements to the permit authority. Beginning on February 26, 2025, the semiannual and annual compliance report required in table 7 of this subpart must be submitted according to paragraph (i) of this section. Only those elements required under this subpart are required to be submitted according to paragraph (i) of this section.

- (g) If you are operating as a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must submit an annual report according to Table 7 of this subpart by the date specified unless the Administrator has approved a different schedule, according to the information described in paragraphs (b)(1) through (b)(5) of this section. You must report the data specified in (g)(1) through (g)(3) of this section.
 - (1) Fuel flow rate of each fuel and the heating values that were used in your calculations. You must also demonstrate that the percentage of heat input provided by landfill gas or digester gas is equivalent to 10 percent or more of the total fuel consumption on an annual basis.
 - (2) The operating limits provided in your federally enforceable permit, and any deviations from these limits.
 - (3) Any problems or errors suspected with the meters.
- (h) If you own or operate an emergency stationary RICE with a site rating of more than 100 brake HP that operates for the purpose specified in § 63.6640(f)(4)(ii), you must submit an annual report according to the requirements in paragraphs (h)(1) through (3) of this section.
 - (1) The report must contain the following information:
 - (i) Company name and address where the engine is located.
 - (ii) Date of the report and beginning and ending dates of the reporting period.
 - (iii) Engine site rating in brake HP, year construction of the engine commenced (as defined in § 63.2, where the exact year is not known, provide the best estimate), and type of engine (CI, SI 2SLB, SI 4SLB, or SI 4SRB).
 - (iv) Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place.
 - (v)-(vi) [Reserved]
 - (vii) Hours spent for operation for the purpose specified in § 63.6640(f)(4)(ii), including the date, start time, and end time for engine operation for the purposes specified in § 63.6640(f)(4)(ii). The report must also identify the entity that dispatched the engine and the situation that necessitated the dispatch of the engine.
 - (viii) If there were no deviations from the fuel requirements in § 63.6604 that apply to the engine (if any), a statement that there were no deviations from the fuel requirements during the reporting period.

- (ix) If there were deviations from the fuel requirements in § 63.6604 that apply to the engine (if any), information on the number, duration (in hours), and cause of deviations, and the corrective action taken.
- (2) The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year.
- (3) Before February 26, 2025, the annual report must be submitted electronically using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (<https://cdx.epa.gov/>). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the written report must be submitted to the Administrator at the appropriate address listed in § 63.13. Beginning on February 26, 2025, the annual report must be submitted according to paragraph (i) of this section.
- (i) Beginning on February 26, 2025 for the annual report specified in § 63.6650(h) and February 26, 2025 or one year after the report becomes available in CEDRI, whichever is later for all other semiannual or annual reports, submit all semiannual and annual subsequent compliance reports using the appropriate electronic report template on the CEDRI website (<https://www.epa.gov/electronic-reporting-air-emissions/cedri>) for this subpart and following the procedure specified in § 63.9(k), except any CBI must be submitted according to the procedures in § 63.6645(h). The date report templates become available will be listed on the CEDRI website. Unless the Administrator or delegated state agency or other authority has approved a different schedule for submission of reports, the report must be submitted by the deadline specified in this subpart, regardless of the method in which the report is submitted.

[69 FR 33506, June 15, 2004, as amended at 75 FR 9677, Mar. 3, 2010; 78 FR 6705, Jan. 30, 2013; 87 FR 48607, Aug. 10, 2022; 89 FR 70517, Aug. 30, 2024]

§ 63.6655 What records must I keep?

- (a) If you must comply with the emission and operating limitations, you must keep the records described in paragraphs (a)(1) through (a)(5), (b)(1) through (b)(3) and (c) of this section.
 - (1) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted, according to the requirement in § 63.10(b)(2)(xiv).
 - (2) Records of the occurrence and duration (in hours) of each malfunction of operation (i.e., process equipment) or the air pollution control and monitoring equipment.
 - (3) Records of performance tests and performance evaluations as required in § 63.10(b)(2)(viii).
 - (4) Records of all required maintenance performed on the air pollution control and monitoring equipment.
 - (5) Records of actions taken during periods of malfunction to minimize emissions in accordance with § 63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.
- (b) For each CEMS or CPMS, you must keep the records listed in paragraphs (b)(1) through (3) of this section.
 - (1) Records described in § 63.10(b)(2)(vi) through (xi).

- (2) Previous (i.e., superseded) versions of the performance evaluation plan as required in § 63.8(d)(3).
- (3) Requests for alternatives to the relative accuracy test for CEMS or CPMS as required in § 63.8(f)(6)(i), if applicable.
- (c) If you are operating a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must keep the records of your daily fuel usage monitors.
- (d) You must keep the records required in Table 6 of this subpart to show continuous compliance with each emission or operating limitation that applies to you.
- (e) You must keep records of the maintenance conducted on the stationary RICE in order to demonstrate that you operated and maintained the stationary RICE and after-treatment control device (if any) according to your own maintenance plan if you own or operate any of the following stationary RICE;
 - (1) An existing stationary RICE with a site rating of less than 100 brake HP located at a major source of HAP emissions.
 - (2) An existing stationary emergency RICE.
 - (3) An existing stationary RICE located at an area source of HAP emissions subject to management practices as shown in Table 2d to this subpart.
- (f) If you own or operate any of the stationary RICE in paragraphs (f)(1) through (2) of this section, you must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engine is used for the purpose specified in § 63.6640(f)(4)(ii), the owner or operator must keep records of the notification of the emergency situation, and the date, start time, and end time of engine operation for these purposes.
 - (1) An existing emergency stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions that does not meet the standards applicable to non-emergency engines.
 - (2) An existing emergency stationary RICE located at an area source of HAP emissions that does not meet the standards applicable to non-emergency engines.

[69 FR 33506, June 15, 2004, as amended at 75 FR 9678, Mar. 3, 2010; 75 FR 51592, Aug. 20, 2010; 78 FR 6706, Jan. 30, 2013; 87 FR 48607, Aug. 10, 2022; 89 FR 70518, Aug. 30, 2024]

§ 63.6660 In what form and how long must I keep my records?

- (a) Your records must be in a form suitable and readily available for expeditious review according to § 63.10(b)(1).
- (b) As specified in § 63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.
- (c) You must keep each record readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to § 63.10(b)(1).

[69 FR 33506, June 15, 2004, as amended at 75 FR 9678, Mar. 3, 2010]

OTHER REQUIREMENTS AND INFORMATION

§ 63.6665 What parts of the General Provisions apply to me?

Table 8 to this subpart shows which parts of the General Provisions in §§ 63.1 through 63.15 apply to you. If you own or operate a new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions (except new or reconstructed 4SLB engines greater than or equal to 250 and less than or equal to 500 brake HP), a new or reconstructed stationary RICE located at an area source of HAP emissions, or any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with any of the requirements of the General Provisions specified in Table 8: An existing 2SLB stationary RICE, an existing 4SLB stationary RICE, an existing stationary RICE that combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, an existing emergency stationary RICE, or an existing limited use stationary RICE. If you own or operate any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the requirements in the General Provisions specified in Table 8 except for the initial notification requirements: A new stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, a new emergency stationary RICE, or a new limited use stationary RICE.

[75 FR 9678, Mar. 3, 2010]

§ 63.6670 Who implements and enforces this subpart?

- (a) This subpart is implemented and enforced by the U.S. EPA, or a delegated authority such as your State, local, or tribal agency. If the U.S. EPA Administrator has delegated authority to your State, local, or tribal agency, then that agency (as well as the U.S. EPA) has the authority to implement and enforce this subpart. You should contact your U.S. EPA Regional Office to find out whether this subpart is delegated to your State, local, or tribal agency.
- (b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency under 40 CFR part 63, subpart E, the authorities contained in paragraph (c) of this section are retained by the Administrator of the U.S. EPA and are not transferred to the State, local, or tribal agency.
- (c) The authorities that will not be delegated to State, local, or tribal agencies are:
 - (1) Approval of alternatives to the non-opacity emission limitations and operating limitations in § 63.6600 under § 63.6(g).
 - (2) Approval of major alternatives to test methods under § 63.7(e)(2)(ii) and (f) and as defined in § 63.90.
 - (3) Approval of major alternatives to monitoring under § 63.8(f) and as defined in § 63.90.
 - (4) Approval of major alternatives to recordkeeping and reporting under § 63.10(f) and as defined in § 63.90.
 - (5) Approval of a performance test which was conducted prior to the effective date of the rule, as specified in § 63.6610(b).
 - (6) Approval of an alternative to any electronic reporting to the EPA required by this subpart.

[69 FR 33506, June 15, 2004, as amended at 89 FR 70518, Aug. 30, 2024]

§ 63.6675 What definitions apply to this subpart?

Terms used in this subpart are defined in the Clean Air Act (CAA); in 40 CFR 63.2, the General Provisions of this part; and in this section as follows:

Alaska Railbelt Grid means the service areas of the six regulated public utilities that extend from Fairbanks to Anchorage and the Kenai Peninsula. These utilities are Golden Valley Electric Association; Chugach Electric Association; Matanuska Electric Association; Homer Electric Association; Anchorage Municipal Light & Power; and the City of Seward Electric System.

Area source means any stationary source of HAP that is not a major source as defined in part 63.

Associated equipment as used in this subpart and as referred to in section 112(n)(4) of the CAA, means equipment associated with an oil or natural gas exploration or production well, and includes all equipment from the well bore to the point of custody transfer, except glycol dehydration units, storage vessels with potential for flash emissions, combustion turbines, and stationary RICE.

Backup power for renewable energy means an engine that provides backup power to a facility that generates electricity from renewable energy resources, as that term is defined in Alaska Statute 42.45.045(l)(5) (incorporated by reference, see § 63.14).

Black start engine means an engine whose only purpose is to start up a combustion turbine.

CAA means the Clean Air Act (42 U.S.C. 7401 *et seq.*, as amended by Public Law 101-549, 104 Stat. 2399).

Commercial emergency stationary RICE means an emergency stationary RICE used in commercial establishments such as office buildings, hotels, stores, telecommunications facilities, restaurants, financial institutions such as banks, doctor's offices, and sports and performing arts facilities.

Compression ignition means relating to a type of stationary internal combustion engine that is not a spark ignition engine.

Custody transfer means the transfer of hydrocarbon liquids or natural gas: After processing and/or treatment in the producing operations, or from storage vessels or automatic transfer facilities or other such equipment, including product loading racks, to pipelines or any other forms of transportation. For the purposes of this subpart, the point at which such liquids or natural gas enters a natural gas processing plant is a point of custody transfer.

Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

- (1) Fails to meet any requirement or obligation established by this subpart, including but not limited to any emission limitation or operating limitation;
- (2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or
- (3) Fails to meet any emission limitation or operating limitation in this subpart during malfunction, regardless or whether or not such failure is permitted by this subpart.
- (4) Fails to satisfy the general duty to minimize emissions established by § 63.6(e)(1)(i).

Diesel engine means any stationary RICE in which a high boiling point liquid fuel injected into the combustion chamber ignites when the air charge has been compressed to a temperature sufficiently high for auto-ignition. This process is also known as compression ignition.

Diesel fuel means any liquid obtained from the distillation of petroleum with a boiling point of approximately 150 to 360 degrees Celsius. One commonly used form is fuel oil number 2. Diesel fuel also includes any non-distillate fuel with comparable physical and chemical properties (e.g. biodiesel) that is suitable for use in compression ignition engines.

Digester gas means any gaseous by-product of wastewater treatment typically formed through the anaerobic decomposition of organic waste materials and composed principally of methane and CO₂.

Dual-fuel engine means any stationary RICE in which a liquid fuel (typically diesel fuel) is used for compression ignition and gaseous fuel (typically natural gas) is used as the primary fuel.

Emergency stationary RICE means any stationary reciprocating internal combustion engine that meets all of the criteria in paragraphs (1) through (3) of this definition. All emergency stationary RICE must comply with the requirements specified in § 63.6640(f) in order to be considered emergency stationary RICE. If the engine does not comply with the requirements specified in § 63.6640(f), then it is not considered to be an emergency stationary RICE under this subpart.

- (1) The stationary RICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary RICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary RICE used to pump water in the case of fire or flood, etc.
- (2) The stationary RICE is operated under limited circumstances for situations not included in paragraph (1) of this definition, as specified in § 63.6640(f).
- (3) The stationary RICE operates as part of a financial arrangement with another entity in situations not included in paragraph (1) of this definition only as allowed in § 63.6640(f)(4)(i) or (ii).

Engine startup means the time from initial start until applied load and engine and associated equipment reaches steady state or normal operation. For stationary engine with catalytic controls, engine startup means the time from initial start until applied load and engine and associated equipment, including the catalyst, reaches steady state or normal operation.

Four-stroke engine means any type of engine which completes the power cycle in two crankshaft revolutions, with intake and compression strokes in the first revolution and power and exhaust strokes in the second revolution.

Gaseous fuel means a material used for combustion which is in the gaseous state at standard atmospheric temperature and pressure conditions.

Gasoline means any fuel sold in any State for use in motor vehicles and motor vehicle engines, or nonroad or stationary engines, and commonly or commercially known or sold as gasoline.

Glycol dehydration unit means a device in which a liquid glycol (including, but not limited to, ethylene glycol, diethylene glycol, or triethylene glycol) absorbent directly contacts a natural gas stream and absorbs water in a contact tower or absorption column (absorber). The glycol contacts and absorbs water vapor and other gas stream constituents from the natural gas and becomes "rich" glycol. This glycol is then regenerated in the glycol dehydration unit reboiler. The "lean" glycol is then recycled.

Hazardous air pollutants (HAP) means any air pollutants listed in or pursuant to section 112(b) of the CAA.

Institutional emergency stationary RICE means an emergency stationary RICE used in institutional establishments such as medical centers, nursing homes, research centers, institutions of higher education, correctional facilities, elementary and secondary schools, libraries, religious establishments, police stations, and fire stations.

ISO standard day conditions means 288 degrees Kelvin (15 degrees Celsius), 60 percent relative humidity and 101.3 kilopascals pressure.

Landfill gas means a gaseous by-product of the land application of municipal refuse typically formed through the anaerobic decomposition of waste materials and composed principally of methane and CO₂.

Lean burn engine means any two-stroke or four-stroke spark ignited engine that does not meet the definition of a rich burn engine.

Limited use stationary RICE means any stationary RICE that operates less than 100 hours per year.

Liquefied petroleum gas means any liquefied hydrocarbon gas obtained as a by-product in petroleum refining of natural gas production.

Liquid fuel means any fuel in liquid form at standard temperature and pressure, including but not limited to diesel, residual/crude oil, kerosene/naphtha (jet fuel), and gasoline.

Major Source, as used in this subpart, shall have the same meaning as in § 63.2, except that:

- (1) Emissions from any oil or gas exploration or production well (with its associated equipment (as defined in this section)) and emissions from any pipeline compressor station or pump station shall not be aggregated with emissions from other similar units, to determine whether such emission points or stations are major sources, even when emission points are in a contiguous area or under common control;
- (2) For oil and gas production facilities, emissions from processes, operations, or equipment that are not part of the same oil and gas production facility, as defined in § 63.1271 of subpart HHH of this part, shall not be aggregated;
- (3) For production field facilities, only HAP emissions from glycol dehydration units, storage vessel with the potential for flash emissions, combustion turbines and reciprocating internal combustion engines shall be aggregated for a major source determination; and
- (4) Emissions from processes, operations, and equipment that are not part of the same natural gas transmission and storage facility, as defined in § 63.1271 of subpart HHH of this part, shall not be aggregated.

Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential to cause, the emission limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

Natural gas means a naturally occurring mixture of hydrocarbon and non-hydrocarbon gases found in geologic formations beneath the Earth's surface, of which the principal constituent is methane. Natural gas may be field or pipeline quality.

Non-selective catalytic reduction (NSCR) means an add-on catalytic nitrogen oxides (NO_x) control device for rich burn engines that, in a two-step reaction, promotes the conversion of excess oxygen, NO_x, CO, and volatile organic compounds (VOC) into CO₂, nitrogen, and water.

Oil and gas production facility as used in this subpart means any grouping of equipment where hydrocarbon liquids are processed, upgraded (*i.e.*, remove impurities or other constituents to meet contract specifications), or stored prior to the point of custody transfer; or where natural gas is processed, upgraded, or stored prior to entering the natural gas transmission and storage source category. For purposes of a major source determination, facility (including a building, structure, or installation) means oil and natural gas production and processing equipment that is located within the boundaries of an individual surface site as defined in this section. Equipment that is part of a facility will typically be located within close proximity to other equipment located at the same facility. Pieces of production equipment or groupings of equipment located on different oil and gas leases, mineral fee tracts, lease tracts, subsurface or surface unit areas, surface fee tracts, surface lease tracts, or separate surface sites, whether or not connected by a road, waterway, power line or pipeline, shall not be considered part of the same facility. Examples of facilities in the oil and natural gas production source category include, but are not limited to, well sites, satellite tank batteries, central tank batteries, a compressor station that transports natural gas to a natural gas processing plant, and natural gas processing plants.

Oxidation catalyst means an add-on catalytic control device that controls CO and VOC by oxidation.

Peaking unit or engine means any standby engine intended for use during periods of high demand that are not emergencies.

Percent load means the fractional power of an engine compared to its maximum manufacturer's design capacity at engine site conditions. Percent load may range between 0 percent to above 100 percent.

Potential to emit means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the stationary source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable. For oil and natural gas production facilities subject to subpart HH of this part, the potential to emit provisions in § 63.760(a) may be used. For natural gas transmission and storage facilities subject to subpart HHH of this part, the maximum annual facility gas throughput for storage facilities may be determined according to § 63.1270(a)(1) and the maximum annual throughput for transmission facilities may be determined according to § 63.1270(a)(2).

Production field facility means those oil and gas production facilities located prior to the point of custody transfer.

Production well means any hole drilled in the earth from which crude oil, condensate, or field natural gas is extracted.

Propane means a colorless gas derived from petroleum and natural gas, with the molecular structure C₃H₈.

Remote stationary RICE means stationary RICE meeting any of the following criteria:

- (1) Stationary RICE located in an offshore area that is beyond the line of ordinary low water along that portion of the coast of the United States that is in direct contact with the open seas and beyond the line marking the seaward limit of inland waters.

- (2) Stationary RICE located on a pipeline segment that meets both of the criteria in paragraphs (2)(i) and (ii) of this definition.
- (i) A pipeline segment with 10 or fewer buildings intended for human occupancy and no buildings with four or more stories within 220 yards (200 meters) on either side of the centerline of any continuous 1-mile (1.6 kilometers) length of pipeline. Each separate dwelling unit in a multiple dwelling unit building is counted as a separate building intended for human occupancy.
 - (ii) The pipeline segment does not lie within 100 yards (91 meters) of either a building or a small, well-defined outside area (such as a playground, recreation area, outdoor theater, or other place of public assembly) that is occupied by 20 or more persons on at least 5 days a week for 10 weeks in any 12-month period. The days and weeks need not be consecutive. The building or area is considered occupied for a full day if it is occupied for any portion of the day.
 - (iii) For purposes of this paragraph (2), the term pipeline segment means all parts of those physical facilities through which gas moves in transportation, including but not limited to pipe, valves, and other appurtenance attached to pipe, compressor units, metering stations, regulator stations, delivery stations, holders, and fabricated assemblies. Stationary RICE located within 50 yards (46 meters) of the pipeline segment providing power for equipment on a pipeline segment are part of the pipeline segment. Transportation of gas means the gathering, transmission, or distribution of gas by pipeline, or the storage of gas. A building is intended for human occupancy if its primary use is for a purpose involving the presence of humans.
- (3) Stationary RICE that are not located on gas pipelines and that have 5 or fewer buildings intended for human occupancy and no buildings with four or more stories within a 0.25 mile radius around the engine. A building is intended for human occupancy if its primary use is for a purpose involving the presence of humans.

Residential emergency stationary RICE means an emergency stationary RICE used in residential establishments such as homes or apartment buildings.

Responsible official means responsible official as defined in 40 CFR 70.2.

Rich burn engine means any four-stroke spark ignited engine where the manufacturer's recommended operating air/fuel ratio divided by the stoichiometric air/fuel ratio at full load conditions is less than or equal to 1.1. Engines originally manufactured as rich burn engines, but modified prior to December 19, 2002 with passive emission control technology for NO_x (such as pre-combustion chambers) will be considered lean burn engines. Also, existing engines where there are no manufacturer's recommendations regarding air/fuel ratio will be considered a rich burn engine if the excess oxygen content of the exhaust at full load conditions is less than or equal to 2 percent.

Site-rated HP means the maximum manufacturer's design capacity at engine site conditions.

Spark ignition means relating to either: A gasoline-fueled engine; or any other type of engine with a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation. Dual-fuel engines in which a liquid fuel (typically diesel fuel) is used for CI and gaseous fuel (typically natural gas) is used as the primary fuel at an annual average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis are spark ignition engines.

Stationary reciprocating internal combustion engine (RICE) means any reciprocating internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition.

Stationary RICE test cell/stand means an engine test cell/stand, as defined in subpart P of this part, that tests stationary RICE.

Stoichiometric means the theoretical air-to-fuel ratio required for complete combustion.

Storage vessel with the potential for flash emissions means any storage vessel that contains a hydrocarbon liquid with a stock tank gas-to-oil ratio equal to or greater than 0.31 cubic meters per liter and an American Petroleum Institute gravity equal to or greater than 40 degrees and an actual annual average hydrocarbon liquid throughput equal to or greater than 79,500 liters per day. Flash emissions occur when dissolved hydrocarbons in the fluid evolve from solution when the fluid pressure is reduced.

Subpart means 40 CFR part 63, subpart ZZZZ.

Surface site means any combination of one or more graded pad sites, gravel pad sites, foundations, platforms, or the immediate physical location upon which equipment is physically affixed.

Two-stroke engine means a type of engine which completes the power cycle in single crankshaft revolution by combining the intake and compression operations into one stroke and the power and exhaust operations into a second stroke. This system requires auxiliary scavenging and inherently runs lean of stoichiometric.

[69 FR 33506, June 15, 2004, as amended at 71 FR 20467, Apr. 20, 2006; 73 FR 3607, Jan. 18, 2008; 75 FR 9679, Mar. 3, 2010; 75 FR 51592, Aug. 20, 2010; 76 FR 12867, Mar. 9, 2011; 78 FR 6706, Jan. 30, 2013; 87 FR 48608, Aug. 10, 2022]

Table 1a to Subpart ZZZZ of Part 63—Emission Limitations for Existing, New, and Reconstructed Spark Ignition, 4SRB Stationary RICE >500 HP Located at a Major Source of HAP Emissions

As stated in §§ 63.6600 and 63.6640, you must comply with the following emission limitations at 100 percent load plus or minus 10 percent for existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions:

For each . . .	You must meet the following emission limitation, except during periods of startup . . .	During periods of startup you must . . .
1. 4SRB stationary RICE	a. Reduce formaldehyde emissions by 76 percent or more. If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004, you may reduce formaldehyde emissions by 75 percent or more until June 15, 2007 or	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply. ¹

¹ Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.

For each . . .	You must meet the following emission limitation, except during periods of startup . . .	During periods of startup you must . . .
	b. Limit the concentration of formaldehyde in the stationary RICE exhaust to 350 ppbvd or less at 15 percent O ₂	

¹ Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.

[75 FR 9679, Mar. 3, 2010, as amended at 75 FR 51592, Aug. 20, 2010]

Table 1b to Subpart ZZZZ of Part 63—Operating Limitations for Existing, New, and Reconstructed SI 4SRB Stationary RICE >500 HP Located at a Major Source of HAP Emissions

As stated in §§ 63.6600, 63.6603, 63.6630 and 63.6640, you must comply with the following operating limitations for existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions:

For each . . .	You must meet the following operating limitation, except during periods of startup . . .
1. existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions complying with the requirement to reduce formaldehyde emissions by 76 percent or more (or by 75 percent or more, if applicable) and using NSCR; or existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust to 350 ppbvd or less at 15 percent O ₂ and using NSCR;	a. maintain your catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water at 100 percent load plus or minus 10 percent from the pressure drop across the catalyst measured during the initial performance test; and b. maintain the temperature of your stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 750 °F and less than or equal to 1250 °F. ¹
2. existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions complying with the requirement to reduce formaldehyde emissions by 76 percent or more (or by 75 percent or more, if applicable) and not using NSCR; or existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP	Comply with any operating limitations approved by the Administrator.

¹ Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.8(f) for a different temperature range.

For each . . .	You must meet the following operating limitation, except during periods of startup . . .
emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust to 350 ppbvd or less at 15 percent O ₂ and not using NSCR.	

¹ Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.8(f) for a different temperature range.

[78 FR 6706, Jan. 30, 2013]

Table 2a to Subpart ZZZZ of Part 63—Emission Limitations for New and Reconstructed 2SLB and Compression Ignition Stationary RICE >500 HP and New and Reconstructed 4SLB Stationary RICE ≥250 HP Located at a Major Source of HAP Emissions

As stated in §§ 63.6600 and 63.6640, you must comply with the following emission limitations for new and reconstructed lean burn and new and reconstructed compression ignition stationary RICE at 100 percent load plus or minus 10 percent:

For each . . .	You must meet the following emission limitation, except during periods of startup . . .	During periods of startup you must . . .
1. 2SLB stationary RICE	a. Reduce CO emissions by 58 percent or more; or b. Limit concentration of formaldehyde in the stationary RICE exhaust to 12 ppmvd or less at 15 percent O ₂ . If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004, you may limit concentration of formaldehyde to 17 ppmvd or less at 15 percent O ₂ until June 15, 2007	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply. ¹
2. 4SLB stationary RICE	a. Reduce CO emissions by 93 percent or more; or b. Limit concentration of formaldehyde in the stationary RICE exhaust to 14 ppmvd or less at 15 percent O ₂	
3. CI stationary RICE	a. Reduce CO emissions by 70 percent or more; or	

¹ Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.

For each . . .	You must meet the following emission limitation, except during periods of startup . . .	During periods of startup you must . . .
	b. Limit concentration of formaldehyde in the stationary RICE exhaust to 580 ppbvd or less at 15 percent O ₂	

¹ Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.

[75 FR 9680, Mar. 3, 2010]

Table 2b to Subpart ZZZZ of Part 63—Operating Limitations for New and Reconstructed 2SLB and CI Stationary RICE >500 HP Located at a Major Source of HAP Emissions, New and Reconstructed 4SLB Stationary RICE ≥250 HP Located at a Major Source of HAP Emissions, Existing CI Stationary RICE >500 HP

As stated in §§ 63.6600, 63.6601, 63.6603, 63.6630, and 63.6640, you must comply with the following operating limitations for new and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions; new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions; and existing CI stationary RICE >500 HP:

For each . . .	You must meet the following operating limitation, except during periods of startup . . .
1. New and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions complying with the requirement to reduce CO emissions and using an oxidation catalyst; and New and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust and using an oxidation catalyst.	a. maintain your catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water at 100 percent load plus or minus 10 percent from the pressure drop across the catalyst that was measured during the initial performance test; and b. maintain the temperature of your stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 450 °F and less than or equal to 1350 °F. ¹
2. Existing CI stationary RICE >500 HP complying with the requirement to limit or reduce the concentration of CO in the stationary RICE exhaust and using an	a. maintain your catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of

¹ Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.8(f) for a different temperature range.

For each . . .	You must meet the following operating limitation, except during periods of startup . . .
oxidation catalyst 3. New and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions complying with the requirement to reduce CO emissions and not using an oxidation catalyst; and New and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust and not using an oxidation catalyst; and existing CI stationary RICE >500 HP complying with the requirement to limit or reduce the concentration of CO in the stationary RICE exhaust and not using an oxidation catalyst.	a. water from the pressure drop across the catalyst that was measured during the initial performance test; and b. maintain the temperature of your stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 450 °F and less than or equal to 1350 °F.¹ Comply with any operating limitations approved by the Administrator.

¹ Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.8(f) for a different temperature range.

[78 FR 6707, Jan. 30, 2013]

Table 2c to Subpart ZZZZ of Part 63—Requirements for Existing Compression Ignition Stationary RICE Located at a Major Source of HAP Emissions and Existing Spark Ignition Stationary RICE ≤500 HP Located at a Major Source of HAP Emissions

As stated in §§ 63.6600, 63.6602, and 63.6640, you must comply with the following requirements for existing compression ignition stationary RICE located at a major source of HAP emissions and existing spark ignition stationary RICE ≤500 HP located at a major source of HAP emissions

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
1. Emergency stationary CI RICE and black start stationary CI RICE ¹	a. Change oil and filter every 500 hours of operation or within 1 year + 30 days of the previous change, whichever comes first ². b. Inspect air cleaner every 1,000 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary ³	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply. ³

¹ If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the work practice requirements on the schedule required in table 2c of this subpart, or if performing the work practice on the required schedule would otherwise pose an unacceptable risk under Federal, state, or local law, the work practice can be delayed until the emergency is over or the unacceptable risk under Federal, state, or local law has abated. The work practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, state, or local law has abated. Sources must report any failure to perform the work practice on the schedule required and the Federal, state or local law under which the risk was deemed unacceptable.

² Sources have the option to utilize an oil analysis program as described in § 63.6625(i) or (j) in order to extend the specified oil change requirement in table 2c of this subpart.

³ Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
2. Non-Emergency, non-black start stationary CI RICE <100 HP	a. Change oil and filter every 1,000 hours of operation or within 1 year + 30 days of the previous change, whichever comes first ². b. Inspect air cleaner every 1,000 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary ³	
3. Non-Emergency, non-black start CI stationary RICE 100≤HP≤300 HP	Limit concentration of CO in the stationary RICE exhaust to 230 ppmvd or less at 15 percent O ₂	
4. Non-Emergency, non-black start CI stationary RICE 300<HP≤500	a. Limit concentration of CO in the stationary RICE exhaust to 49 ppmvd or less at 15 percent O ₂ ; or	

¹ If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the work practice requirements on the schedule required in table 2c of this subpart, or if performing the work practice on the required schedule would otherwise pose an unacceptable risk under Federal, state, or local law, the work practice can be delayed until the emergency is over or the unacceptable risk under Federal, state, or local law has abated. The work practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, state, or local law has abated. Sources must report any failure to perform the work practice on the schedule required and the Federal, state or local law under which the risk was deemed unacceptable.

² Sources have the option to utilize an oil analysis program as described in § 63.6625(i) or (j) in order to extend the specified oil change requirement in table 2c of this subpart.

³ Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
5. Non-Emergency, non-black start stationary CI RICE >500 HP	b. Reduce CO emissions by 70 percent or more a. Limit concentration of CO in the stationary RICE exhaust to 23 ppmvd or less at 15 percent O₂; or b. Reduce CO emissions by 70 percent or more	
6. Emergency stationary SI RICE and black start stationary SI RICE. ¹	a. Change oil and filter every 500 hours of operation or within 1 year + 30 days of the previous change, whichever comes first;² b. Inspect spark plugs every 1,000 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary³	

¹ If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the work practice requirements on the schedule required in table 2c of this subpart, or if performing the work practice on the required schedule would otherwise pose an unacceptable risk under Federal, state, or local law, the work practice can be delayed until the emergency is over or the unacceptable risk under Federal, state, or local law has abated. The work practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, state, or local law has abated. Sources must report any failure to perform the work practice on the schedule required and the Federal, state or local law under which the risk was deemed unacceptable.

² Sources have the option to utilize an oil analysis program as described in § 63.6625(i) or (j) in order to extend the specified oil change requirement in table 2c of this subpart.

³ Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
7. Non-Emergency, non-black start stationary SI RICE <100 HP that are not 2SLB stationary RICE	a. Change oil and filter every 1,440 hours of operation or within 1 year + 30 days of the previous change, whichever comes first;² b. Inspect spark plugs every 1,440 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary c. Inspect all hoses and belts every 1,440 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary³	
8. Non-Emergency, non-black start 2SLB stationary SI RICE <100 HP	a. Change oil and filter every 4,320 hours of operation or within 1 year + 30 days of the previous change, whichever comes first;² b. Inspect spark plugs every 4,320 hours of	

¹ If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the work practice requirements on the schedule required in table 2c of this subpart, or if performing the work practice on the required schedule would otherwise pose an unacceptable risk under Federal, state, or local law, the work practice can be delayed until the emergency is over or the unacceptable risk under Federal, state, or local law has abated. The work practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, state, or local law has abated. Sources must report any failure to perform the work practice on the schedule required and the Federal, state or local law under which the risk was deemed unacceptable.

² Sources have the option to utilize an oil analysis program as described in § 63.6625(i) or (j) in order to extend the specified oil change requirement in table 2c of this subpart.

³ Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
	operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 4,320 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary ³	
9. Non-emergency, non-black start 2SLB stationary RICE 100≤HP≤500	Limit concentration of CO in the stationary RICE exhaust to 225 ppmvd or less at 15 percent O ₂	
10. Non-emergency, non-black start 4SLB stationary RICE 100≤HP≤500	Limit concentration of CO in the stationary RICE exhaust to 47 ppmvd or less at 15 percent O ₂	
11. Non-emergency, non-black start 4SRB stationary RICE 100≤HP≤500	Limit concentration of formaldehyde in the stationary RICE exhaust to 10.3 ppmvd or less at 15 percent O ₂	
12. Non-emergency, non-black start stationary RICE 100≤HP≤500 which	Limit concentration of CO in the stationary RICE exhaust to 177 ppmvd or	

¹ If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the work practice requirements on the schedule required in table 2c of this subpart, or if performing the work practice on the required schedule would otherwise pose an unacceptable risk under Federal, state, or local law, the work practice can be delayed until the emergency is over or the unacceptable risk under Federal, state, or local law has abated. The work practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, state, or local law has abated. Sources must report any failure to perform the work practice on the schedule required and the Federal, state or local law under which the risk was deemed unacceptable.

² Sources have the option to utilize an oil analysis program as described in § 63.6625(i) or (j) in order to extend the specified oil change requirement in table 2c of this subpart.

³ Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis	less at 15 percent O ₂	

¹ *If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the work practice requirements on the schedule required in table 2c of this subpart, or if performing the work practice on the required schedule would otherwise pose an unacceptable risk under Federal, state, or local law, the work practice can be delayed until the emergency is over or the unacceptable risk under Federal, state, or local law has abated. The work practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, state, or local law has abated. Sources must report any failure to perform the work practice on the schedule required and the Federal, state or local law under which the risk was deemed unacceptable.*

² *Sources have the option to utilize an oil analysis program as described in § 63.6625(i) or (j) in order to extend the specified oil change requirement in table 2c of this subpart.*

³ *Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.*

[89 FR 70518, Aug. 30, 2024]

Table 2d to Subpart ZZZZ of Part 63—Requirements for Existing Stationary RICE Located at Area Sources of HAP Emissions

As stated in §§ 63.6603 and 63.6640, you must comply with the following requirements for existing stationary RICE located at area sources of HAP emissions:

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
1. Non-Emergency, non-black start CI stationary RICE ≤300 HP	a. Change oil and filter every 1,000 hours of operation or within 1 year + 30 days of the previous change, whichever comes first;¹ b. Inspect air cleaner every 1,000 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.

¹ Sources have the option to utilize an oil analysis program as described in § 63.6625(i) or (j) in order to extend the specified oil change requirement in table 2d of this subpart.

² If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required in table 2d of this subpart, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under Federal, state, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under Federal, state, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, state, or local law has abated. Sources must report any failure to perform the management practice on the schedule required and the Federal, state or local law under which the risk was deemed unacceptable.

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
2. Non-Emergency, non-black start CI stationary RICE 300<HP≤500	a. Limit concentration of CO in the stationary RICE exhaust to 49 ppmvd at 15 percent O ₂ ; or b. Reduce CO emissions by 70 percent or more	
3. Non-Emergency, non-black start CI stationary RICE >500 HP	a. Limit concentration of CO in the stationary RICE exhaust to 23 ppmvd at 15 percent O ₂ ; or b. Reduce CO emissions by 70 percent or more	
4. Emergency stationary CI RICE and black start stationary CI RICE. ²	a. Change oil and filter every 500 hours of operation or within 1 year + 30 days of the previous change, whichever comes first; ¹ b. Inspect air cleaner every 1,000 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes	

¹ Sources have the option to utilize an oil analysis program as described in § 63.6625(i) or (j) in order to extend the specified oil change requirement in table 2d of this subpart.

² If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required in table 2d of this subpart, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under Federal, state, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under Federal, state, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, state, or local law has abated. Sources must report any failure to perform the management practice on the schedule required and the Federal, state or local law under which the risk was deemed unacceptable.

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
5. Emergency stationary SI RICE; black start stationary SI RICE; non-emergency, non-black start 4SLB stationary RICE >500 HP that operate 24 hours or less per calendar year; non-emergency, non-black start 4SRB stationary RICE >500 HP that operate 24 hours or less per calendar year.²	first, and replace as necessary; and c. Inspect all hoses and belts every 500 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary a. Change oil and filter every 500 hours of operation or within 1 year + 30 days of the previous change, whichever comes first;¹ b. Inspect spark plugs every 1,000 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary; and c. Inspect all hoses and belts every 500 hours of operation or	

¹ Sources have the option to utilize an oil analysis program as described in § 63.6625(i) or (j) in order to extend the specified oil change requirement in table 2d of this subpart.

² If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required in table 2d of this subpart, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under Federal, state, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under Federal, state, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, state, or local law has abated. Sources must report any failure to perform the management practice on the schedule required and the Federal, state or local law under which the risk was deemed unacceptable.

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
6. Non-emergency, non-black start 2SLB stationary RICE	within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary a. Change oil and filter every 4,320 hours of operation or within 1 year + 30 days of the previous change, whichever comes first;¹ b. Inspect spark plugs every 4,320 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary; and c. Inspect all hoses and belts every 4,320 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary	

¹ Sources have the option to utilize an oil analysis program as described in § 63.6625(i) or (j) in order to extend the specified oil change requirement in table 2d of this subpart.

² If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required in table 2d of this subpart, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under Federal, state, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under Federal, state, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, state, or local law has abated. Sources must report any failure to perform the management practice on the schedule required and the Federal, state or local law under which the risk was deemed unacceptable.

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
7. Non-emergency, non-black start 4SLB stationary RICE ≤500 HP	a. Change oil and filter every 1,440 hours of operation or within 1 year + 30 days of the previous change, whichever comes first; ¹ b. Inspect spark plugs every 1,440 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary; and c. Inspect all hoses and belts every 1,440 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary	
8. Non-emergency, non-black start 4SLB remote stationary RICE >500 HP	a. Change oil and filter every 2,160 hours of operation or within 1 year + 30 days of the previous	

¹ Sources have the option to utilize an oil analysis program as described in § 63.6625(i) or (j) in order to extend the specified oil change requirement in table 2d of this subpart.

² If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required in table 2d of this subpart, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under Federal, state, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under Federal, state, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, state, or local law has abated. Sources must report any failure to perform the management practice on the schedule required and the Federal, state or local law under which the risk was deemed unacceptable.

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
9. Non-emergency, non-black start 4SLB stationary RICE >500 HP that are not remote stationary RICE and that operate more than 24 hours per calendar year 10. Non-emergency, non-black start 4SRB stationary RICE ≤500 HP	change, whichever comes first;¹ b. Inspect spark plugs every 2,160 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary; and c. Inspect all hoses and belts every 2,160 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary Install an oxidation catalyst to reduce HAP emissions from the stationary RICE a. Change oil and filter every 1,440 hours of operation or within 1 year + 30 days of the previous	

¹ Sources have the option to utilize an oil analysis program as described in § 63.6625(i) or (j) in order to extend the specified oil change requirement in table 2d of this subpart.

² If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required in table 2d of this subpart, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under Federal, state, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under Federal, state, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, state, or local law has abated. Sources must report any failure to perform the management practice on the schedule required and the Federal, state or local law under which the risk was deemed unacceptable.

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
11. Non-emergency, non-black start 4SRB remote stationary RICE >500 HP	change, whichever comes first;¹ b. Inspect spark plugs every 1,440 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary; and c. Inspect all hoses and belts every 1,440 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary a. Change oil and filter every 2,160 hours of operation or within 1 year + 30 days of the previous change, whichever comes first;¹ b. Inspect spark plugs every 2,160 hours of operation or	

¹ Sources have the option to utilize an oil analysis program as described in § 63.6625(i) or (j) in order to extend the specified oil change requirement in table 2d of this subpart.

² If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required in table 2d of this subpart, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under Federal, state, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under Federal, state, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, state, or local law has abated. Sources must report any failure to perform the management practice on the schedule required and the Federal, state or local law under which the risk was deemed unacceptable.

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
12. Non-emergency, non-black start 4SRB stationary RICE >500 HP that are not remote stationary RICE and that operate more than 24 hours per calendar year 13. Non-emergency, non-black start stationary RICE which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis	within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary; and c. Inspect all hoses and belts every 2,160 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary Install NSCR to reduce HAP emissions from the stationary RICE a. Change oil and filter every 1,440 hours of operation or within 1 year + 30 days of the previous change, whichever comes first;¹ b. Inspect spark plugs every 1,440 hours of operation or	

¹ Sources have the option to utilize an oil analysis program as described in § 63.6625(i) or (j) in order to extend the specified oil change requirement in table 2d of this subpart.

² If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required in table 2d of this subpart, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under Federal, state, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under Federal, state, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, state, or local law has abated. Sources must report any failure to perform the management practice on the schedule required and the Federal, state or local law under which the risk was deemed unacceptable.

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
	within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary; and c. Inspect all hoses and belts every 1,440 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary	

¹ Sources have the option to utilize an oil analysis program as described in § 63.6625(i) or (j) in order to extend the specified oil change requirement in table 2d of this subpart.

² If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required in table 2d of this subpart, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under Federal, state, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under Federal, state, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, state, or local law has abated. Sources must report any failure to perform the management practice on the schedule required and the Federal, state or local law under which the risk was deemed unacceptable.

[89 FR 70520, Aug. 30, 2024]

Table 3 to Subpart ZZZZ of Part 63—Subsequent Performance Tests

As stated in §§ 63.6615 and 63.6620, you must comply with the following subsequent performance test requirements:

For each . . .	Complying with the requirement to . . .	You must . . .
1. New or reconstructed 2SLB stationary RICE >500 HP located at major sources; new or reconstructed 4SLB stationary RICE $\geq$ 250 HP located at major sources; and new or reconstructed CI stationary RICE >500 HP located at major sources	Reduce CO emissions and not using a CEMS	Conduct subsequent performance tests semiannually. ¹
2. 4SRB stationary RICE $\geq$ 5,000 HP located at major sources	Reduce formaldehyde emissions	Conduct subsequent performance tests semiannually. ¹
3. Stationary RICE >500 HP located at major sources and new or reconstructed 4SLB stationary RICE $250 \leq \text{HP} \leq 500$ located at major sources	Limit the concentration of formaldehyde in the stationary RICE exhaust	Conduct subsequent performance tests semiannually. ¹
4. Existing non-emergency, non-black start CI stationary RICE >500 HP that are not limited use stationary RICE	Limit or reduce CO emissions and not using a CEMS	Conduct subsequent performance tests every 8,760 hours or 3 years, whichever comes first.
5. Existing non-emergency, non-black start CI stationary RICE >500 HP that are limited use stationary RICE	Limit or reduce CO emissions and not using a CEMS	Conduct subsequent performance tests every 8,760 hours or 5 years, whichever comes first.

¹ After you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.

[78 FR 6711, Jan. 30, 2013]

Table 4 to Subpart ZZZZ of Part 63—Requirements for Performance Tests

As stated in §§ 63.6610, 63.6611, 63.6620, and 63.6640, you must comply with the following requirements for performance tests for stationary RICE:

For each . . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
1. 2SLB, 4SLB, and CI stationary RICE	a. Reduce CO emissions	i. Select the sampling port location and the number/ location of traverse points at the inlet and outlet of the control device; and ii. Measure the O₂ at the inlet and outlet of the control device; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A-2, or ASTM D6522-00 (Reapproved 2005)^{1 3} (heated probe not necessary)	(a) For CO, O₂, and moisture measurement, ducts ≤6 inches in diameter may be sampled at a single point located at the duct centroid and ducts >6 and ≤12 inches in diameter may be sampled at 3 traverse points located at 16.7, 50.0, and 83.3% of the measurement line ('3-point long line'). If the duct is >12 inches in diameter <i>and</i> the sampling port location meets the two and half-diameter criterion of section 11.1.1 of method 1 of 40 CFR part 60, appendix A-1, the duct may be sampled at '3-point long line'; otherwise, conduct the stratification testing and select sampling points according to section 8.1.2 of method 7E of 40 CFR part 60, appendix A-4. (b) Measurements to determine O₂ must be made at the same time as the measurements for CO concentration.

¹ You may also use methods 3A and 10 as options to ASTM-D6522-00 (2005).

² You may obtain a copy of ASTM-D6348-03 from at least one of the following addresses: American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, or University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106.

³ Incorporated by reference, see § 63.14.

For each . ..	Complying with the requirement to ...	You must ...	Using ...	According to the following requirements ...
2. 4SRB stationary RICE	a. Reduce formaldehyde or THC emissions	iii. Measure the CO at the inlet and the outlet of the control device; and	(2) ASTM D6522-00 (Reapproved 2005) ^{1 2 3} (heated probe not necessary) or method 10 of 40 CFR part 60, appendix A-4	(c) The CO concentration must be at 15 percent O ₂ , dry basis.
		iv. Measure moisture content at the inlet and outlet of the control device as needed to determine CO and O ₂ concentrations on a dry basis	(3) Method 4 of 40 CFR part 60, appendix A-3, or method 320 of 40 CFR part 63, appendix A, or ASTM D6348-03 ¹ 3	(d) Measurements to determine moisture content must be made at the same time and location as the measurements for CO concentration.
		i. Select the sampling port location and the number/ location of traverse points at the inlet and outlet of the control device; and		(a) For formaldehyde, THC, O ₂ , and moisture measurement, ducts ≤6 inches in diameter may be sampled at a single point located at the duct centroid and ducts >6 and ≤12 inches in diameter may be sampled at 3 traverse points located at 16.7, 50.0, and 83.3% of the measurement line ('3-point long line'). If the duct is >12 inches in diameter <i>and</i> the sampling port location meets the two and half- diameter criterion of section 11.1.1 of

¹ You may also use methods 3A and 10 as options to ASTM-D6522-00 (2005).

² You may obtain a copy of ASTM-D6348-03 from at least one of the following addresses: American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, or University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106.

³ Incorporated by reference, see § 63.14.

For each . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
		ii. Measure O₂ at the inlet and outlet of the control device; and iii. Measure moisture content at the inlet and outlet of the control device as needed to determine formaldehyde or THC and O₂ concentrations on a dry basis; and iv. If demonstrating compliance	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A-2, or ASTM D6522-00 (Reapproved 2005)^{1 3} (heated probe not necessary) (2) Method 4 of 40 CFR part 60, appendix A-3, or method 320 of 40 CFR part 63, appendix A, or ASTM D6348-03^{1 3} (3) Method 320 or 323 of 40 CFR	method 1 of 40 CFR part 60, appendix A, the duct may be sampled at '3-point long line'; otherwise, conduct the stratification testing and select sampling points according to section 8.1.2 of method 7E of 40 CFR part 60, appendix A. (b) Measurements to determine O₂ concentration must be made at the same time as the measurements for formaldehyde or THC concentration. (c) Measurements to determine moisture content must be made at the same time and location as the measurements for formaldehyde or THC concentration. (d) Formaldehyde concentration must be at 15 percent O₂, dry basis. Results of this test consist of the average of the

¹ You may also use methods 3A and 10 as options to ASTM-D6522-00 (2005).

² You may obtain a copy of ASTM-D6348-03 from at least one of the following addresses: American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, or University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106.

³ Incorporated by reference, see § 63.14.

For each . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
		with the formaldehyde percent reduction requirement, measure formaldehyde at the inlet and the outlet of the control device	part 63, appendix A; or ASTM D6348-03, ^{1 3} provided in ASTM D6348-03 Annex A5 (Analyte Spiking Technique), the percent R must be greater than or equal to 70 and less than or equal to 130	three 1-hour or longer runs.
		v. If demonstrating compliance with the THC percent reduction requirement, measure THC at the inlet and the outlet of the control device	(4) (1) Method 25A, reported as propane, of 40 CFR part 60, appendix A-7	(e) THC concentration must be at 15 percent O ₂ , dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
3. Stationary RICE	a. Limit the concentration of formaldehyde or CO in the stationary	i. Select the sampling port location and the number/ location of traverse points		(a) For formaldehyde, CO, O ₂ , and moisture measurement, ducts ≤6 inches in diameter may be sampled at a single point located at the duct centroid and ducts >6 and ≤12 inches in diameter may be sampled at 3 traverse

¹ You may also use methods 3A and 10 as options to ASTM-D6522-00 (2005).

² You may obtain a copy of ASTM-D6348-03 from at least one of the following addresses: American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, or University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106.

³ Incorporated by reference, see § 63.14.

For each . ..	Complying with the requirement to ...	You must ...	Using ...	According to the following requirements ...
	RICE exhaust	at the exhaust of the stationary RICE; and		points located at 16.7, 50.0, and 83.3% of the measurement line ('3-point long line'). If the duct is >12 inches in diameter <i>and</i> the sampling port location meets the two and half- diameter criterion of section 11.1.1 of method 1 of 40 CFR part 60, appendix A, the duct may be sampled at '3-point long line'; otherwise, conduct the stratification testing and select sampling points according to section 8.1.2 of method 7E of 40 CFR part 60, appendix A. If using a control device, the sampling site must be located at the outlet of the control device.
		ii. Determine the O ₂ concentration of the stationary RICE exhaust at the sampling port location; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A-2, or ASTM D6522-00 (Reapproved 2005) ^{1 3} (heated probe not necessary)	(b) Measurements to determine O ₂ concentration must be made at the same time and location as the measurements for formaldehyde or CO concentration.
		iii. Measure moisture content of the stationary RICE exhaust at the sampling port location as	(2) Method 4 of 40 CFR part 60, appendix A-3, or method 320 of 40 CFR part 63,	(c) Measurements to determine moisture content must be made at the same time and location as the measurements for formaldehyde or CO concentration.

¹ You may also use methods 3A and 10 as options to ASTM-D6522-00 (2005).

² You may obtain a copy of ASTM-D6348-03 from at least one of the following addresses: American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, or University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106.

³ Incorporated by reference, see § 63.14.

For each . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
		needed to determine formaldehyde or CO and O₂ concentrations on a dry basis; and iv. Measure formaldehyde at the exhaust of the stationary RICE; or v. Measure CO at the exhaust of the stationary RICE	appendix A, or ASTM D6348-03^{1 3} (3) Method 320 or 323 of 40 CFR part 63, appendix A; or ASTM D6348-03,^{1 3} provided in ASTM D6348-03 Annex A5 (Analyte Spiking Technique), the percent R must be greater than or equal to 70 and less than or equal to 130 (4) Method 10 of 40 CFR part 60, appendix A-4, ASTM D6522-00 (2005),^{1 3} method 320	(d) Formaldehyde concentration must be at 15 percent O₂, dry basis. Results of this test consist of the average of the three 1-hour or longer runs. (e) CO concentration must be at 15 percent O₂, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.

² You may obtain a copy of ASTM-D6348-03 from at least one of the following addresses: American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, or University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106.

³ Incorporated by reference, see § 63.14.

For each . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
			of 40 CFR part 63, appendix A, or ASTM D6348-03 ¹ ₃	

¹ You may also use methods 3A and 10 as options to ASTM-D6522-00 (2005).

² You may obtain a copy of ASTM-D6348-03 from at least one of the following addresses: American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, or University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106.

³ Incorporated by reference, see § 63.14.

[88 FR 18413, Mar. 29, 2023]

Table 5 to Subpart ZZZZ of Part 63—Initial Compliance With Emission Limitations, Operating Limitations, and Other Requirements

As stated in §§ 63.6612, 63.6625 and 63.6630, you must initially comply with the emission and operating limitations as required by the following:

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
1. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Reduce CO emissions and using oxidation catalyst, and using a CPMS	i. The average reduction of emissions of CO determined from the initial performance test achieves the required CO percent reduction; and ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b); and iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
2. Non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Limit the concentration of CO, using oxidation catalyst, and using a CPMS	i. The average CO concentration determined from the initial performance test is less than or equal to the CO emission limitation; and ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b); and iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
3. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Reduce CO emissions and not using oxidation catalyst	i. The average reduction of emissions of CO determined from the initial performance test achieves the required CO percent reduction; and ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in § 63.6625(b); and iii. You have recorded the approved operating parameters (if any) during the initial performance test.
4. Non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Limit the concentration of CO, and not using oxidation catalyst	i. The average CO concentration determined from the initial performance test is less than or equal to the CO emission limitation; and ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in § 63.6625(b); and iii. You have recorded the approved

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
5. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Reduce CO emissions, and using a CEMS	operating parameters (if any) during the initial performance test. i. You have installed a CEMS to continuously monitor CO and either O₂ or CO₂ at both the inlet and outlet of the oxidation catalyst according to the requirements in § 63.6625(a); and ii. You have conducted a performance evaluation of your CEMS using PS 3 and 4A of 40 CFR part 60, appendix B; and iii. The average reduction of CO calculated using § 63.6620 equals or exceeds the required percent reduction. The initial test comprises the first 4-hour period after successful validation of the CEMS. Compliance is based on the average percent reduction achieved during the 4-hour period.
6. Non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Limit the concentration of CO, and using a CEMS	i. You have installed a CEMS to continuously monitor CO and either O₂ or CO₂ at the outlet of the oxidation catalyst according to the requirements in § 63.6625(a); and ii. You have conducted a performance evaluation of your CEMS using PS 3 and 4A of 40 CFR part 60, appendix B; and iii. The average concentration of CO calculated using § 63.6620 is less than or equal to the CO emission limitation. The initial test comprises the first 4-hour period after successful validation of the CEMS. Compliance is based on the average concentration measured during the 4-hour period.
7. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde	i. The average reduction of emissions of formaldehyde

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
	emissions and using NSCR	determined from the initial performance test is equal to or greater than the required formaldehyde percent reduction, or the average reduction of emissions of THC determined from the initial performance test is equal to or greater than 30 percent; and ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b); and iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
8. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and not using NSCR	i. The average reduction of emissions of formaldehyde determined from the initial performance test is equal to or greater than the required formaldehyde percent reduction or the average reduction of emissions of THC determined from the initial performance test is equal to or greater than 30 percent; and ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in § 63.6625(b); and iii. You have recorded the approved operating parameters (if any) during the initial performance test.
9. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP, and existing non-emergency 4SRB	a. Limit the concentration of formaldehyde in the stationary	i. The average formaldehyde concentration, corrected to 15 percent O ₂ , dry basis, from the three test runs is less than or equal to the formaldehyde emission limitation; and

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
stationary RICE >500 HP located at a major source of HAP	RICE exhaust and using oxidation catalyst or NSCR	ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b); and iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
10. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP, and existing non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and not using oxidation catalyst or NSCR	i. The average formaldehyde concentration, corrected to 15 percent O₂, dry basis, from the three test runs is less than or equal to the formaldehyde emission limitation; and ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in § 63.6625(b); and iii. You have recorded the approved operating parameters (if any) during the initial performance test.
11. Existing non-emergency stationary RICE 100≤HP≤500 located at a major source of HAP, and existing non-emergency stationary CI RICE 300<HP≤500 located at an area source of HAP	a. Reduce CO emissions	i. The average reduction of emissions of CO or formaldehyde, as applicable determined from the initial performance test is equal to or greater than the required CO or formaldehyde, as applicable, percent reduction.
12. Existing non-emergency stationary RICE 100≤HP≤500 located at a major source of HAP, and existing non-emergency stationary CI RICE 300<HP≤500 located at an area source of HAP	a. Limit the concentration of formaldehyde or CO in the stationary RICE exhaust	i. The average formaldehyde or CO concentration, as applicable, corrected to 15 percent O ₂ , dry basis, from the three test runs is less than or equal to the formaldehyde or CO emission limitation, as applicable.
13. Existing non-emergency 4SLB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and	a. Install an oxidation catalyst	i. You have conducted an initial compliance demonstration as specified in § 63.6630(e) to show

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
that are operated more than 24 hours per calendar year		that the average reduction of emissions of CO is 93 percent or more, or the average CO concentration is less than or equal to 47 ppmvd at 15 percent O ₂ ; ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b), or you have installed equipment to automatically shut down the engine if the catalyst inlet temperature exceeds 1350 °F.
14. Existing non-emergency 4SRB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year	a. Install NSCR	i. You have conducted an initial compliance demonstration as specified in § 63.6630(e) to show that the average reduction of emissions of CO is 75 percent or more, the average CO concentration is less than or equal to 270 ppmvd at 15 percent O ₂ , or the average reduction of emissions of THC is 30 percent or more; ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b), or you have installed equipment to automatically shut down the engine if the catalyst inlet temperature exceeds 1250 °F.

[78 FR 6712, Jan. 30, 2013]

Table 6 to Subpart ZZZZ of Part 63—Continuous Compliance With Emission Limitations, and Other Requirements

As stated in § 63.6640, you must continuously comply with the emissions and operating limitations and work or management practices as required by the following:

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
1. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, and new or reconstructed non-emergency CI stationary RICE >500 HP located at a major source of HAP	a. Reduce CO emissions and using an oxidation catalyst, and using a CPMS	i. Conducting semiannual performance tests for CO to demonstrate that the required CO percent reduction is achieved ^a ; and ii. Collecting the catalyst inlet temperature data according to § 63.6625(b); and iii. Reducing these data to 4-hour rolling averages; and iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure

^a After you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
2. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE $\geq$250 HP located at a major source of HAP, and new or reconstructed non-emergency CI stationary RICE >500 HP located at a major source of HAP	a. Reduce CO emissions and not using an oxidation catalyst, and using a CPMS	drop across the catalyst is within the operating limitation established during the performance test. i. Conducting semiannual performance tests for CO to demonstrate that the required CO percent reduction is achieved ^a; and ii. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and iii. Reducing these data to 4-hour rolling averages; and iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
3. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or	a. Reduce CO emissions or	i. Collecting the monitoring data

^a After you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
reconstructed non-emergency 4SLB stationary RICE $\geq$ 250 HP located at a major source of HAP, new or reconstructed non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP	limit the concentration of CO in the stationary RICE exhaust, and using a CEMS	according to § 63.6625(a), reducing the measurements to 1-hour averages, calculating the percent reduction or concentration of CO emissions according to § 63.6620; and ii. Demonstrating that the catalyst achieves the required percent reduction of CO emissions over the 4-hour averaging period, or that the emission remain at or below the CO concentration limit; and iii. Conducting an annual RATA of your CEMS using PS 3 and 4A of 40 CFR part 60, appendix B, as well as daily and periodic data quality checks in accordance with 40 CFR part 60, appendix F, procedure 1.

^a After you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
4. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and using NSCR	i. Collecting the catalyst inlet temperature data according to § 63.6625(b); and ii. Reducing these data to 4-hour rolling averages; and iii. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and iv. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
5. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and not using NSCR	i. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and ii. Reducing these

^a After you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
6. Non-emergency 4SRB stationary RICE with a brake HP $\geq 5,000$ located at a major source of HAP	a. Reduce formaldehyde emissions	data to 4-hour rolling averages; and iii. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test. Conducting semiannual performance tests for formaldehyde to demonstrate that the required formaldehyde percent reduction is achieved, or to demonstrate that the average reduction of emissions of THC determined from the performance test is equal to or greater than 30 percent. ^a
7. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP and new or reconstructed non-emergency 4SLB stationary RICE $250 \leq \text{HP} \leq 500$ located at a major source of HAP	a. Limit the concentration of formaldehyde in the stationary	i. Conducting semiannual performance tests for formaldehyde to demonstrate that your

^a After you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
8. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP and new or reconstructed	RICE exhaust and using oxidation catalyst or NSCR a. Limit the concentration	emissions remain at or below the formaldehyde concentration limit ^a; and ii. Collecting the catalyst inlet temperature data according to § 63.6625(b); and iii. Reducing these data to 4-hour rolling averages; and iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test. i. Conducting semiannual
^a After you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.		

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
non-emergency 4SLB stationary RICE $250 \leq \text{HP} \leq 500$ located at a major source of HAP	of formaldehyde in the stationary RICE exhaust and not using oxidation catalyst or NSCR	performance tests for formaldehyde to demonstrate that your emissions remain at or below the formaldehyde concentration limit ^a ; and ii. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and iii. Reducing these data to 4-hour rolling averages; and iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
9. Existing emergency and black start stationary RICE ≤ 500 HP located at a major source of HAP, existing non-emergency stationary RICE < 100 HP located at a major source of HAP, existing emergency and black start stationary RICE located at an area source of HAP, existing non-emergency stationary CI RICE ≤ 300 HP located at an area source of HAP, existing non-emergency 2SLB stationary RICE located at an area source of HAP, existing non-emergency stationary SI RICE located at an	a. Work or Management practices	i. Operating and maintaining the stationary RICE according to the manufacturer's emission-related operation and maintenance

^a After you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
area source of HAP which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, existing non-emergency 4SLB and 4SRB stationary RICE ≤500 HP located at an area source of HAP, existing non-emergency 4SLB and 4SRB stationary RICE >500 HP located at an area source of HAP that operate 24 hours or less per calendar year, and existing non-emergency 4SLB and 4SRB stationary RICE >500 HP located at an area source of HAP that are remote stationary RICE 10. Existing stationary CI RICE >500 HP that are not limited use stationary RICE	a. Reduce CO emissions, or limit the concentration of CO in the stationary RICE exhaust, and using oxidation catalyst	instructions; or ii. Develop and follow your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. i. Conducting performance tests every 8,760 hours or 3 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and

^a After you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
11. Existing stationary CI RICE >500 HP that are not limited use stationary RICE	a. Reduce CO emissions, or limit the concentration of CO in the stationary RICE exhaust,	ii. Collecting the catalyst inlet temperature data according to § 63.6625(b); and iii. Reducing these data to 4-hour rolling averages; and iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test. i. Conducting performance tests every 8,760 hours or 3 years, whichever comes first, for CO or formaldehyde, as

^a After you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
	and not using oxidation catalyst	appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and ii. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and iii. Reducing these data to 4-hour rolling averages; and iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
12. Existing limited use CI stationary RICE >500 HP	a. Reduce CO emissions or limit the concentration	i. Conducting performance tests every 8,760 hours or 5 years,

^a After you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
	of CO in the stationary RICE exhaust, and using an oxidation catalyst	whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and ii. Collecting the catalyst inlet temperature data according to § 63.6625(b); and iii. Reducing these data to 4-hour rolling averages; and iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and v. Measuring the pressure drop across the catalyst once per month and

^a After you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
13. Existing limited use CI stationary RICE >500 HP	a. Reduce CO emissions or limit the concentration of CO in the stationary RICE exhaust, and not using an oxidation catalyst	demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test. i. Conducting performance tests every 8,760 hours or 5 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and ii. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and iii. Reducing these data to 4-hour

^a After you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
14. Existing non-emergency 4SLB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year	a. Install an oxidation catalyst	rolling averages; and iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test. i. Conducting annual compliance demonstrations as specified in § 63.6640(c) to show that the average reduction of emissions of CO is 93 percent or more, or the average CO concentration is less than or equal to 47 ppmvd at 15 percent O₂; and either ii. Collecting the catalyst inlet temperature data according to § 63.6625(b), reducing these data to 4-hour rolling averages;

^a After you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
15. Existing non-emergency 4SRB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year	a. Install NSCR	and maintaining the 4-hour rolling averages within the limitation of greater than 450 °F and less than or equal to 1350 °F for the catalyst inlet temperature; or iii. Immediately shutting down the engine if the catalyst inlet temperature exceeds 1350 °F. i. Conducting annual compliance demonstrations as specified in § 63.6640(c) to show that the average reduction of emissions of CO is 75 percent or more, the average CO concentration is less than or equal to 270 ppmvd at 15 percent O₂, or the average reduction of emissions of THC is 30 percent or more; and either

^a After you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
		ii. Collecting the catalyst inlet temperature data according to § 63.6625(b), reducing these data to 4-hour rolling averages; and maintaining the 4-hour rolling averages within the limitation of greater than or equal to 750 °F and less than or equal to 1250 °F for the catalyst inlet temperature; or iii. Immediately shutting down the engine if the catalyst inlet temperature exceeds 1250 °F.

^a After you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.

[78 FR 6715, Jan. 30, 2013]

Table 7 to Subpart ZZZZ of Part 63—Requirements for Reports

As stated in § 63.6650, you must comply with the following requirements for reports:

For each . . .	You must submit a . . .	The report must contain . . .	You must submit the report . . .
1. Existing non-emergency, non-black start stationary RICE $100 \leq \text{HP} \leq 500$ located at a major source of HAP; existing non-emergency, non-black start stationary CI RICE > 500 HP located at a major source of HAP; existing non-emergency 4SRB stationary RICE > 500 HP located at a major source of HAP; existing non-emergency, non-black start stationary CI RICE > 300 HP located at an area source of HAP; new or reconstructed non-emergency stationary RICE > 500 HP located at a major source of HAP; and new or reconstructed non-emergency 4SLB stationary RICE $250 \leq \text{HP} \leq 500$ located at a major source of HAP	Compliance report	a. If there are no deviations from any emission limitations or operating limitations that apply to you, a statement that there were no deviations from the emission limitations or operating limitations during the reporting period. If there were no periods during which the CMS, including CEMS and CPMS, was out-of-control, as specified in § 63.8(c)(7), a statement that there were not periods during which the CMS was out-of-control during the reporting period; or b. If you had a deviation from any emission limitation or operating limitation during the reporting period, the information in § 63.6650(d). If there were periods during which the CMS, including CEMS and CPMS, was out-of-control, as specified in § 63.8(c)(7), the information in § 63.6650(e); or c. If you had a malfunction during the reporting period, the information in § 63.6650(c)(4)	i. Semiannually according to the requirements in § 63.6650(b)(1)-(5) and (i) for engines that are not limited use stationary RICE subject to numerical emission limitations; and ii. Annually according to the requirements in § 63.6650(b)(6)-(9) and (i) for engines that are limited use stationary RICE subject to numerical emission limitations. i. Semiannually according to the requirements in § 63.6650(b) and (i). i. Semiannually according to the requirements in § 63.6650(b) and (i).

For each . . .	You must submit a . . .	The report must contain . .	You must submit the report . . .
2. New or reconstructed non-emergency stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis	Report	a. The fuel flow rate of each fuel and the heating values that were used in your calculations, and you must demonstrate that the percentage of heat input provided by landfill gas or digester gas, is equivalent to 10 percent or more of the gross heat input on an annual basis; and b. The operating limits provided in your federally enforceable permit, and any deviations from these limits; and c. Any problems or errors suspected with the meters	i. Annually, according to the requirements in § 63.6650. i. See item 2.a.i. i. See item 2.a.i.
3. Existing non-emergency, non-black start 4SLB and 4SRB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that operate more than 24 hours per calendar year	Compliance report	a. The results of the annual compliance demonstration, if conducted during the reporting period	i. Semiannually according to the requirements in § 63.6650(b)(1)-(5) and (i).
4. Emergency stationary RICE that operate for the purposes specified in § 63.6640(f)(4)(ii)	Report	a. The information in § 63.6650(h)(1)	i. Annually according to the requirements in § 63.6650(h)(2)-(3) and (i).

[89 FR 70522, Aug. 30, 2024]

Table 8 to Subpart ZZZZ of Part 63—Applicability of General Provisions to Subpart ZZZZ

As stated in § 63.6665, you must comply with the following applicable general provisions.

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 63.1	General applicability of the General Provisions	Yes	Additional terms defined in § 63.6675.
§ 63.2	Definitions	Yes	
§ 63.3	Units and abbreviations	Yes	
§ 63.4	Prohibited activities and circumvention	Yes	
§ 63.5	Construction and reconstruction	Yes	
§ 63.6(a)	Applicability	Yes	
§ 63.6(b)(1)-(4)	Compliance dates for new and reconstructed sources	Yes	
§ 63.6(b)(5)	Notification	Yes	
§ 63.6(b)(6)	[Reserved]		
§ 63.6(b)(7)	Compliance dates for new and reconstructed area sources that become major sources	Yes	
§ 63.6(c)(1)-(2)	Compliance dates for existing sources	Yes	
§ 63.6(c)(3)-(4)	[Reserved]		
§ 63.6(c)(5)	Compliance dates for existing area sources that become major sources	Yes	
§ 63.6(d)	[Reserved]		
§ 63.6(e)	Operation and maintenance	No	
§ 63.6(f)(1)	Applicability of standards	No	
§ 63.6(f)(2)	Methods for determining compliance	Yes	
§ 63.6(f)(3)	Finding of compliance	Yes	
§ 63.6(g)(1)-(3)	Use of alternate standard	Yes	
§ 63.6(h)	Opacity and visible emission standards	No	Subpart ZZZZ does not contain opacity or visible emission standards.
§ 63.6(i)	Compliance extension procedures and criteria	Yes	

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 63.6(j)	Presidential compliance exemption	Yes	
§ 63.7(a)(1)-(2)	Performance test dates	Yes	Subpart ZZZZ contains performance test dates at §§ 63.6610, 63.6611, and 63.6612.
§ 63.7(a)(3)	CAA section 114 authority	Yes	
§ 63.7(b)(1)	Notification of performance test	Yes	Except that § 63.7(b)(1) only applies as specified in § 63.6645.
§ 63.7(b)(2)	Notification of rescheduling	Yes	Except that § 63.7(b)(2) only applies as specified in § 63.6645.
§ 63.7(c)	Quality assurance/test plan	Yes	Except that § 63.7(c) only applies as specified in § 63.6645.
§ 63.7(d)	Testing facilities	Yes	
§ 63.7(e)(1)	Conditions for conducting performance tests	No	Subpart ZZZZ specifies conditions for conducting performance tests at § 63.6620.
§ 63.7(e)(2)	Conduct of performance tests and reduction of data	Yes	Subpart ZZZZ specifies test methods at § 63.6620.
§ 63.7(e)(3)	Test run duration	Yes	
§ 63.7(e)(4)	Administrator may require other testing under section 114 of the CAA	Yes	
§ 63.7(f)	Alternative test method provisions	Yes	
§ 63.7(g)	Performance test data analysis, recordkeeping, and reporting	Yes	
§ 63.7(h)	Waiver of tests	Yes	
§ 63.8(a)(1)	Applicability of monitoring requirements	Yes	Subpart ZZZZ contains specific requirements for monitoring at § 63.6625.
§ 63.8(a)(2)	Performance specifications	Yes	
§ 63.8(a)(3)	[Reserved]		
§ 63.8(a)(4)	Monitoring for control devices	No	
§ 63.8(b)(1)	Monitoring	Yes	
§ 63.8(b)(2)-(3)	Multiple effluents and multiple monitoring systems	Yes	
§ 63.8(c)(1)	Monitoring system	Yes	

General provisions citation	Subject of citation	Applies to subpart	Explanation
	operation and maintenance		
§ 63.8(c)(1)(i)	Routine and predictable SSM	No	
§ 63.8(c)(1)(ii)	SSM not in Startup Shutdown Malfunction Plan	Yes	
§ 63.8(c)(1)(iii)	Compliance with operation and maintenance requirements	No	
§ 63.8(c)(2)-(3)	Monitoring system installation	Yes	
§ 63.8(c)(4)	Continuous monitoring system (CMS) requirements	Yes	Except that subpart ZZZZ does not require Continuous Opacity Monitoring System (COMS).
§ 63.8(c)(5)	COMS minimum procedures	No	Subpart ZZZZ does not require COMS.
§ 63.8(c)(6)-(8)	CMS requirements	Yes	Except that subpart ZZZZ does not require COMS.
§ 63.8(d)	CMS quality control	Yes	
§ 63.8(e)	CMS performance evaluation	Yes	Except for § 63.8(e)(5)(ii), which applies to COMS. Except that § 63.8(e) only applies as specified in § 63.6645.
§ 63.8(f)(1)-(5)	Alternative monitoring method	Yes	Except that § 63.8(f)(4) only applies as specified in § 63.6645.
§ 63.8(f)(6)	Alternative to relative accuracy test	Yes	Except that § 63.8(f)(6) only applies as specified in § 63.6645.
§ 63.8(g)	Data reduction	Yes	Except that provisions for COMS are not applicable. Averaging periods for demonstrating compliance are specified at §§ 63.6635 and 63.6640.
§ 63.9(a)	Applicability and State delegation of notification requirements	Yes	
§ 63.9(b)(1)-(5)	Initial notifications	Yes	Except that § 63.9(b)(3) is reserved. Except that § 63.9(b) only applies as specified in § 63.6645.
§ 63.9(c)	Request for compliance	Yes	Except that § 63.9(c) only applies as

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 63.9(d)	extension Notification of special compliance requirements for new sources	Yes	specified in § 63.6645. Except that § 63.9(d) only applies as specified in § 63.6645.
§ 63.9(e)	Notification of performance test	Yes	Except that § 63.9(e) only applies as specified in § 63.6645.
§ 63.9(f)	Notification of visible emission (VE)/opacity test	No	Subpart ZZZZ does not contain opacity or VE standards.
§ 63.9(g)(1)	Notification of performance evaluation	Yes	Except that § 63.9(g) only applies as specified in § 63.6645.
§ 63.9(g)(2)	Notification of use of COMS data	No	Subpart ZZZZ does not contain opacity or VE standards.
§ 63.9(g)(3)	Notification that criterion for alternative to RATA is exceeded	Yes	If alternative is in use. Except that § 63.9(g) only applies as specified in § 63.6645.
§ 63.9(h)(1)-(6)	Notification of compliance status	Yes	Except that notifications for sources using a CEMS are due 30 days after completion of performance evaluations. § 63.9(h)(4) is reserved. Except that § 63.9(h) only applies as specified in § 63.6645.
§ 63.9(i)	Adjustment of submittal deadlines	Yes	
§ 63.9(j)	Change in previous information	Yes	
§ 63.9(k)	Electronic reporting procedures	Yes	Only as specified in §§ 63.9(j), 63.6620, 63.6625, 63.6645, and 63.6650.
§ 63.10(a)	Administrative provisions for recordkeeping/reporting	Yes	
§ 63.10(b)(1)	Record retention	Yes	Except that the most recent 2 years of data do not have to be retained on site.
§ 63.10(b)(2)(i)-(v)	Records related to SSM	No	
§ 63.10(b)(2)(vi)-(xi)	Records	Yes	
§	Record when under	Yes	

General provisions citation	Subject of citation	Applies to subpart	Explanation
63.10(b)(2)(xii)	waiver		
§ 63.10(b)(2)(xiii)	Records when using alternative to RATA	Yes	For CO standard if using RATA alternative.
§ 63.10(b)(2)(xiv)	Records of supporting documentation	Yes	
§ 63.10(b)(3)	Records of applicability determination	Yes	
§ 63.10(c)	Additional records for sources using CEMS	Yes	Except that § 63.10(c)(2)-(4) and (9) are reserved.
§ 63.10(d)(1)	General reporting requirements	Yes	
§ 63.10(d)(2)	Report of performance test results	Yes	
§ 63.10(d)(3)	Reporting opacity or VE observations	No	Subpart ZZZZ does not contain opacity or VE standards.
§ 63.10(d)(4)	Progress reports	Yes	
§ 63.10(d)(5)	Startup, shutdown, and malfunction reports	No	
§ 63.10(e)(1) and (2)(i)	Additional CMS Reports	Yes	
§ 63.10(e)(2)(ii)	COMS-related report	No	Subpart ZZZZ does not require COMS.
§ 63.10(e)(3)	Excess emission and parameter exceedances reports	No	Excess emissions and exceedance reporting is specified in § 63.6650.
§ 63.10(e)(4)	Reporting COMS data	No	Subpart ZZZZ does not require COMS.
§ 63.10(f)	Waiver for recordkeeping/reporting	Yes	
§ 63.11	Flares	No	
§ 63.12	State authority and delegations	Yes	
§ 63.13	Addresses	Yes	
§ 63.14	Incorporation by reference	Yes	
§ 63.15	Availability of information	Yes	

[89 FR 70522, Aug. 30, 2024]

Appendix A to Subpart ZZZZ of Part 63—Protocol for Using an Electrochemical Analyzer to Determine Oxygen and Carbon Monoxide Concentrations From Certain Engines

1.0 Scope and Application. What is this Protocol?

This protocol is a procedure for using portable electrochemical (EC) cells for measuring carbon monoxide (CO) and oxygen (O₂) concentrations in controlled and uncontrolled emissions from existing stationary 4-stroke lean burn and 4-stroke rich burn reciprocating internal combustion engines as specified in the applicable rule.

1.1 Analytes. What does this protocol determine?

This protocol measures the engine exhaust gas concentrations of carbon monoxide (CO) and oxygen (O₂).

Analyte	CAS No.	Sensitivity
Carbon monoxide (CO)	630-08-0	Minimum detectable limit should be 2 percent of the nominal range or 1 ppm, whichever is less restrictive.
Oxygen (O ₂)	7782-44-7	

1.2 Applicability. When is this protocol acceptable?

This protocol is applicable to 40 CFR part 63, subpart ZZZZ. Because of inherent cross sensitivities of EC cells, you must not apply this protocol to other emissions sources without specific instruction to that effect.

1.3 Data Quality Objectives. How good must my collected data be?

Refer to Section 13 to verify and document acceptable analyzer performance.

1.4 Range. What is the targeted analytical range for this protocol?

The measurement system and EC cell design(s) conforming to this protocol will determine the analytical range for each gas component. The nominal ranges are defined by choosing up-scale calibration gas concentrations near the maximum anticipated flue gas concentrations for CO and O₂, or no more than twice the permitted CO level.

1.5 Sensitivity. What minimum detectable limit will this protocol yield for a particular gas component?

The minimum detectable limit depends on the nominal range and resolution of the specific EC cell used, and the signal to noise ratio of the measurement system. The minimum detectable limit should be 2 percent of the nominal range or 1 ppm, whichever is less restrictive.

2.0 Summary of Protocol

In this protocol, a gas sample is extracted from an engine exhaust system and then conveyed to a portable EC analyzer for measurement of CO and O₂ gas concentrations. This method provides measurement system performance specifications and sampling protocols to ensure reliable data. You may use additions to, or modifications of vendor supplied measurement systems (e.g., heated or unheated sample lines, thermocouples, flow meters, selective gas scrubbers, etc.) to meet the design specifications of this protocol. Do not make changes to the measurement system from the as-verified configuration (Section 3.12).

3.0 Definitions

- 3.1 Measurement System.** The total equipment required for the measurement of CO and O₂ concentrations. The measurement system consists of the following major subsystems:
 - 3.1.1 Data Recorder.** A strip chart recorder, computer or digital recorder for logging measurement data from the analyzer output. You may record measurement data from the digital data display manually or electronically.
 - 3.1.2 Electrochemical (EC) Cell.** A device, similar to a fuel cell, used to sense the presence of a specific analyte and generate an electrical current output proportional to the analyte concentration.
 - 3.1.3 Interference Gas Scrubber.** A device used to remove or neutralize chemical compounds that may interfere with the selective operation of an EC cell.
 - 3.1.4 Moisture Removal System.** Any device used to reduce the concentration of moisture in the sample stream so as to protect the EC cells from the damaging effects of condensation and to minimize errors in measurements caused by the scrubbing of soluble gases.
 - 3.1.5 Sample Interface.** The portion of the system used for one or more of the following: sample acquisition; sample transport; sample conditioning or protection of the EC cell from any degrading effects of the engine exhaust effluent; removal of particulate matter and condensed moisture.
- 3.2 Nominal Range.** The range of analyte concentrations over which each EC cell is operated (normally 25 percent to 150 percent of up-scale calibration gas value). Several nominal ranges can be used for any given cell so long as the calibration and repeatability checks for that range remain within specifications.
- 3.3 Calibration Gas.** A vendor certified concentration of a specific analyte in an appropriate balance gas.
- 3.4 Zero Calibration Error.** The analyte concentration output exhibited by the EC cell in response to zero-level calibration gas.
- 3.5 Up-Scale Calibration Error.** The mean of the difference between the analyte concentration exhibited by the EC cell and the certified concentration of the up-scale calibration gas.

- 3.6 Interference Check.** A procedure for quantifying analytical interference from components in the engine exhaust gas other than the targeted analytes.
- 3.7 Repeatability Check.** A protocol for demonstrating that an EC cell operated over a given nominal analyte concentration range provides a stable and consistent response and is not significantly affected by repeated exposure to that gas.
- 3.8 Sample Flow Rate.** The flow rate of the gas sample as it passes through the EC cell. In some situations, EC cells can experience drift with changes in flow rate. The flow rate must be monitored and documented during all phases of a sampling run.
- 3.9 Sampling Run.** A timed three-phase event whereby an EC cell's response rises and plateaus in a sample conditioning phase, remains relatively constant during a measurement data phase, then declines during a refresh phase. The sample conditioning phase exposes the EC cell to the gas sample for a length of time sufficient to reach a constant response. The measurement data phase is the time interval during which gas sample measurements can be made that meet the acceptance criteria of this protocol. The refresh phase then purges the EC cells with CO-free air. The refresh phase replenishes requisite O₂ and moisture in the electrolyte reserve and provides a mechanism to de-gas or desorb any interference gas scrubbers or filters so as to enable a stable CO EC cell response. There are four primary types of sampling runs: pre-sampling calibrations; stack gas sampling; post-sampling calibration checks; and measurement system repeatability checks. Stack gas sampling runs can be chained together for extended evaluations, providing all other procedural specifications are met.
- 3.10 Sampling Day.** A time not to exceed twelve hours from the time of the pre-sampling calibration to the post-sampling calibration check. During this time, stack gas sampling runs can be repeated without repeated recalibrations, providing all other sampling specifications have been met.
- 3.11 Pre-Sampling Calibration/Post-Sampling Calibration Check.** The protocols executed at the beginning and end of each sampling day to bracket measurement readings with controlled performance checks.
- 3.12 Performance-Established Configuration.** The EC cell and sampling system configuration that existed at the time that it initially met the performance requirements of this protocol.

4.0 Interferences.

When present in sufficient concentrations, NO and NO₂ are two gas species that have been reported to interfere with CO concentration measurements. In the likelihood of this occurrence, it is the protocol user's responsibility to employ and properly maintain an appropriate CO EC cell filter or scrubber for removal of these gases, as described in Section 6.2.12.

5.0 Safety. [Reserved]

6.0 Equipment and Supplies.

6.1 What equipment do I need for the measurement system?

The system must maintain the gas sample at conditions that will prevent moisture condensation in the sample transport lines, both before and as the sample gas contacts the EC cells. The essential components of the measurement system are described below.

6.2 Measurement System Components.

- 6.2.1 **Sample Probe.** A single extraction-point probe constructed of glass, stainless steel or other non-reactive material, and of length sufficient to reach any designated sampling point. The sample probe must be designed to prevent plugging due to condensation or particulate matter.
- 6.2.2 **Sample Line.** Non-reactive tubing to transport the effluent from the sample probe to the EC cell.
- 6.2.3 **Calibration Assembly (optional).** A three-way valve assembly or equivalent to introduce calibration gases at ambient pressure at the exit end of the sample probe during calibration checks. The assembly must be designed such that only stack gas or calibration gas flows in the sample line and all gases flow through any gas path filters.
- 6.2.4 **Particulate Filter (optional).** Filters before the inlet of the EC cell to prevent accumulation of particulate material in the measurement system and extend the useful life of the components. All filters must be fabricated of materials that are non-reactive to the gas mixtures being sampled.
- 6.2.5 **Sample Pump.** A leak-free pump to provide undiluted sample gas to the system at a flow rate sufficient to minimize the response time of the measurement system. If located upstream of the EC cells, the pump must be constructed of a material that is non-reactive to the gas mixtures being sampled.
- 6.2.8 **Sample Flow Rate Monitoring.** An adjustable rotameter or equivalent device used to adjust and maintain the sample flow rate through the analyzer as prescribed.
- 6.2.9 **Sample Gas Manifold (optional).** A manifold to divert a portion of the sample gas stream to the analyzer and the remainder to a by-pass discharge vent. The sample gas manifold may also include provisions for introducing calibration gases directly to the analyzer. The manifold must be constructed of a material that is non-reactive to the gas mixtures being sampled.
- 6.2.10 **EC cell.** A device containing one or more EC cells to determine the CO and O₂ concentrations in the sample gas stream. The EC cell(s) must meet the applicable performance specifications of Section 13 of this protocol.
- 6.2.11 **Data Recorder.** A strip chart recorder, computer or digital recorder to make a record of analyzer output data. The data recorder resolution (i.e., readability) must be no greater than 1 ppm for CO; 0.1 percent for O₂; and one degree (either °C or °F) for temperature. Alternatively, you may use a digital or analog meter having the same resolution to observe and manually record the analyzer responses.
- 6.2.12 **Interference Gas Filter or Scrubber.** A device to remove interfering compounds upstream of the CO EC cell. Specific interference gas filters or scrubbers used in the performance-established configuration of the analyzer must continue to be used. Such a filter or scrubber must have a means to determine when the removal agent is exhausted. Periodically replace or replenish it in accordance with the manufacturer's recommendations.

7.0 Reagents and Standards. What calibration gases are needed?

- 7.1 Calibration Gases.** CO calibration gases for the EC cell must be CO in nitrogen or CO in a mixture of nitrogen and O₂. Use CO calibration gases with labeled concentration values certified by the manufacturer to be within ± 5 percent of the label value. Dry ambient air (20.9 percent O₂) is acceptable for calibration of the O₂ cell. If needed, any lower percentage O₂ calibration gas must be a mixture of O₂ in nitrogen.
- 7.1.1 Up-Scale CO Calibration Gas Concentration.** Choose one or more up-scale gas concentrations such that the average of the stack gas measurements for each stack gas sampling run are between 25 and 150 percent of those concentrations. Alternatively, choose an up-scale gas that does not exceed twice the concentration of the applicable outlet standard. If a measured gas value exceeds 150 percent of the up-scale CO calibration gas value at any time during the stack gas sampling run, the run must be discarded and repeated.
- 7.1.2 Up-Scale O₂ Calibration Gas Concentration.**
- Select an O₂ gas concentration such that the difference between the gas concentration and the average stack gas measurement or reading for each sample run is less than 15 percent O₂. When the average exhaust gas O₂ readings are above 6 percent, you may use dry ambient air (20.9 percent O₂) for the up-scale O₂ calibration gas.
- 7.1.3 Zero Gas.** Use an inert gas that contains less than 0.25 percent of the up-scale CO calibration gas concentration. You may use dry air that is free from ambient CO and other combustion gas products (e.g., CO₂).

8.0 Sample Collection and Analysis

- 8.1 Selection of Sampling Sites.**
- 8.1.1 Control Device Inlet.** Select a sampling site sufficiently downstream of the engine so that the combustion gases should be well mixed. Use a single sampling extraction point near the center of the duct (e.g., within the 10 percent centroidal area), unless instructed otherwise.
- 8.1.2 Exhaust Gas Outlet.** Select a sampling site located at least two stack diameters downstream of any disturbance (e.g., turbocharger exhaust, crossover junction or recirculation take-off) and at least one-half stack diameter upstream of the gas discharge to the atmosphere. Use a single sampling extraction point near the center of the duct (e.g., within the 10 percent centroidal area), unless instructed otherwise.
- 8.2 Stack Gas Collection and Analysis.** Prior to the first stack gas sampling run, conduct that the pre-sampling calibration in accordance with Section 10.1. Use Figure 1 to record all data. Zero the analyzer with zero gas. Confirm and record that the scrubber media color is correct and not exhausted. Then position the probe at the sampling point and begin the sampling run at the same flow rate used during the up-scale calibration. Record the start time. Record all EC cell output responses and the flow rate during the "sample conditioning phase" once per minute until constant readings are obtained. Then begin the "measurement data phase" and record readings every 15 seconds for at least two minutes (or eight readings), or as otherwise required to achieve two continuous minutes of data that meet the specification given in Section 13.1. Finally, perform the

"refresh phase" by introducing dry air, free from CO and other combustion gases, until several minute-to-minute readings of consistent value have been obtained. For each run use the "measurement data phase" readings to calculate the average stack gas CO and O₂ concentrations.

- 8.3 EC Cell Rate.** Maintain the EC cell sample flow rate so that it does not vary by more than ± 10 percent throughout the pre-sampling calibration, stack gas sampling and post-sampling calibration check. Alternatively, the EC cell sample flow rate can be maintained within a tolerance range that does not affect the gas concentration readings by more than ± 3 percent, as instructed by the EC cell manufacturer.

9.0 Quality Control (Reserved)

10.0 Calibration and Standardization

- 10.1 Pre-Sampling Calibration.** Conduct the following protocol once for each nominal range to be used on each EC cell before performing a stack gas sampling run on each field sampling day. Repeat the calibration if you replace an EC cell before completing all of the sampling runs. There is no prescribed order for calibration of the EC cells; however, each cell must complete the measurement data phase during calibration. Assemble the measurement system by following the manufacturer's recommended protocols including for preparing and preconditioning the EC cell. Assure the measurement system has no leaks and verify the gas scrubbing agent is not depleted. Use Figure 1 to record all data.

- 10.1.1 Zero Calibration.** For both the O₂ and CO cells, introduce zero gas to the measurement system (e.g., at the calibration assembly) and record the concentration reading every minute until readings are constant for at least two consecutive minutes. Include the time and sample flow rate. Repeat the steps in this section at least once to verify the zero calibration for each component gas.

- 10.1.2 Zero Calibration Tolerance.** For each zero gas introduction, the zero level output must be less than or equal to ± 3 percent of the up-scale gas value or ± 1 ppm, whichever is less restrictive, for the CO channel and less than or equal to ± 0.3 percent O₂ for the O₂ channel.

- 10.1.3 Up-Scale Calibration.** Individually introduce each calibration gas to the measurement system (e.g., at the calibration assembly) and record the start time. Record all EC cell output responses and the flow rate during this "sample conditioning phase" once per minute until readings are constant for at least two minutes. Then begin the "measurement data phase" and record readings every 15 seconds for a total of two minutes, or as otherwise required. Finally, perform the "refresh phase" by introducing dry air, free from CO and other combustion gases, until readings are constant for at least two consecutive minutes. Then repeat the steps in this section at least once to verify the calibration for each component gas. Introduce all gases to flow through the entire sample handling system (i.e., at the exit end of the sampling probe or the calibration assembly).

- 10.1.4 Up-Scale Calibration Error.** The mean of the difference of the "measurement data phase" readings from the reported standard gas value must be less than or equal to ± 5 percent or ± 1 ppm for CO or ± 0.5 percent O₂, whichever is less restrictive, respectively. The maximum allowable deviation from the mean measured value of any single "measurement data phase" reading must be less than or equal to ± 2 percent or ± 1 ppm for CO or ± 0.5 percent O₂, whichever is less restrictive, respectively.

- 10.2 Post-Sampling Calibration Check.** Conduct a stack gas post-sampling calibration check after the stack gas sampling run or set of runs and within 12 hours of the initial calibration. Conduct up-scale and zero calibration checks using the protocol in Section 10.1. Make no changes to the sampling system or EC cell calibration until all post-sampling calibration checks have been recorded. If either the zero or up-scale calibration error exceeds the respective specification in Sections 10.1.2 and 10.1.4 then all measurement data collected since the previous successful calibrations are invalid and re-calibration and re-sampling are required. If the sampling system is disassembled or the EC cell calibration is adjusted, repeat the calibration check before conducting the next analyzer sampling run.

11.0 Analytical Procedure

The analytical procedure is fully discussed in Section 8.

12.0 Calculations and Data Analysis

Determine the CO and O₂ concentrations for each stack gas sampling run by calculating the mean gas concentrations of the data recorded during the “measurement data phase”.

13.0 Protocol Performance

Use the following protocols to verify consistent analyzer performance during each field sampling day.

- 13.1 Measurement Data Phase Performance Check.** Calculate the mean of the readings from the “measurement data phase”. The maximum allowable deviation from the mean for each of the individual readings is ± 2 percent, or ± 1 ppm, whichever is less restrictive. Record the mean value and maximum deviation for each gas monitored. Data must conform to Section 10.1.4. The EC cell flow rate must conform to the specification in Section 8.3.

Example: A measurement data phase is invalid if the maximum deviation of any single reading comprising that mean is greater than ± 2 percent or ± 1 ppm (the default criteria). For example, if the mean = 30 ppm, single readings of below 29 ppm and above 31 ppm are disallowed).

- 13.2 Interference Check.** Before the initial use of the EC cell and interference gas scrubber in the field, and semi-annually thereafter, challenge the interference gas scrubber with NO and NO₂ gas standards that are generally recognized as representative of diesel-fueled engine NO and NO₂ emission values. Record the responses displayed by the CO EC cell and other pertinent data on Figure 1 or a similar form.

13.2.1 Interference Response. The combined NO and NO₂ interference response should be less than or equal to ± 5 percent of the up-scale CO calibration gas concentration.

- 13.3 Repeatability Check.** Conduct the following check once for each nominal range that is to be used on the CO EC cell within 5 days prior to each field sampling program. If a field sampling program lasts longer than 5 days, repeat this check every 5 days. Immediately repeat the check if the EC cell is replaced or if the EC cell is exposed to gas concentrations greater than 150 percent of the highest up-scale gas concentration.

- 13.3.1 **Repeatability Check Procedure.** Perform a complete EC cell sampling run (all three phases) by introducing the CO calibration gas to the measurement system and record the response. Follow Section 10.1.3. Use Figure 1 to record all data. Repeat the run three times for a total of four complete runs. During the four repeatability check runs, do not adjust the system except where necessary to achieve the correct calibration gas flow rate at the analyzer.
- 13.3.2 **Repeatability Check Calculations.** Determine the highest and lowest average “measurement data phase” CO concentrations from the four repeatability check runs and record the results on Figure 1 or a similar form. The absolute value of the difference between the maximum and minimum average values recorded must not vary more than ±3 percent or ±1 ppm of the up-scale gas value, whichever is less restrictive.

14.0 Pollution Prevention (Reserved)

15.0 Waste Management (Reserved)

16.0 Alternative Procedures (Reserved)

17.0 References

- (1) *“Development of an Electrochemical Cell Emission Analyzer Test Protocol”* , Topical Report, Phil Juneau, Emission Monitoring, Inc., July 1997.
- (2) *“Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Emissions from Natural Gas-Fired Engines, Boilers, and Process Heaters Using Portable Analyzers”* , EMC Conditional Test Protocol 30 (CTM-30), Gas Research Institute Protocol GRI-96/0008, Revision 7, October 13, 1997.
- (3) *“ICAC Test Protocol for Periodic Monitoring”* , EMC Conditional Test Protocol 34 (CTM-034), The Institute of Clean Air Companies, September 8, 1999.
- (4) *“Code of Federal Regulations”* , Protection of Environment, 40 CFR, Part 60, Appendix A, Methods 1-4; 10.

TABLE 1: APPENDIX A—SAMPLING RUN DATA.

	Facility_____	Engine I.D._____	Date_____	
Run	(-)	(-)	(-)	(-)
Type:				
(X)	Pre-Sample Calibration	Stack Gas Sample	Post-Sample Cal. Check	Repeatability Check

Run #	1	1	2	2	3	3	4	4	Time	Scrub. OK	Flow- Rate
Gas	O ₂	CO	O ₂	CO	O ₂	CO	O ₂	CO			
Sample Cond. Phase											
"											
"											
"											
Measurement Data Phase											
"											
"											
"											
"											
"											
"											
"											
Mean Refresh Phase											
"											
"											
"											
"											

[78 FR 6721, Jan. 30, 2013]

This content is from the eCFR and is authoritative but unofficial.

Title 40 —Protection of Environment

Chapter I —Environmental Protection Agency

Subchapter C —Air Programs

Part 63 —National Emission Standards for Hazardous Air Pollutants for Source Categories

Authority: 42 U.S.C. 7401 *et seq.*

Source: 57 FR 61992, Dec. 29, 1992, unless otherwise noted.

Subpart DDDDD National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters

What This Subpart Covers

- § 63.7480 What is the purpose of this subpart?
- § 63.7485 Am I subject to this subpart?
- § 63.7490 What is the affected source of this subpart?
- § 63.7491 Are any boilers or process heaters not subject to this subpart?
- § 63.7495 When do I have to comply with this subpart?

Emission Limitations and Work Practice Standards

- § 63.7499 What are the subcategories of boilers and process heaters?
- § 63.7500 What emission limitations, work practice standards, and operating limits must I meet?

§ 63.7501 [Reserved]

General Compliance Requirements

- § 63.7505 What are my general requirements for complying with this subpart?

Testing, Fuel Analyses, and Initial Compliance Requirements

- § 63.7510 What are my initial compliance requirements and by what date must I conduct them?
- § 63.7515 When must I conduct subsequent performance tests, fuel analyses, or tune-ups?
- § 63.7520 What stack tests and procedures must I use?
- § 63.7521 What fuel analyses, fuel specification, and procedures must I use?
- § 63.7522 Can I use emissions averaging to comply with this subpart?
- § 63.7525 What are my monitoring, installation, operation, and maintenance requirements?
- § 63.7530 How do I demonstrate initial compliance with the emission limitations, fuel specifications and work practice standards?
- § 63.7533 Can I use efficiency credits earned from implementation of energy conservation measures to comply with this subpart?

Continuous Compliance Requirements

- § 63.7535 Is there a minimum amount of monitoring data I must obtain?
- § 63.7540 How do I demonstrate continuous compliance with the emission limitations, fuel

specifications and work practice standards?

§ 63.7541 How do I demonstrate continuous compliance under the emissions averaging provision?

Notification, Reports, and Records

§ 63.7545 What notifications must I submit and when?

§ 63.7550 What reports must I submit and when?

§ 63.7555 What records must I keep?

§ 63.7560 In what form and how long must I keep my records?

Other Requirements and Information

§ 63.7565 What parts of the General Provisions apply to me?

§ 63.7570 Who implements and enforces this subpart?

§ 63.7575 What definitions apply to this subpart?

Table 1 to Subpart DDDDD of Part 63

Emission Limits for New or Reconstructed Boilers and Process Heaters ^c

Table 2 to Subpart DDDDD of Part 63

Emission Limits for Existing Boilers and Process Heaters ^d

Table 3 to Subpart DDDDD of Part 63

Work Practice Standards

Table 4 to Subpart DDDDD of Part 63

Operating Limits for Boilers and Process Heaters

Table 5 to Subpart DDDDD of Part 63

Performance Testing Requirements

Table 6 to Subpart DDDDD of Part 63

Fuel Analysis Requirements

Table 7 to Subpart DDDDD of Part 63

Establishing Operating Limits ^{a b}

Table 8 to Subpart DDDDD of Part 63

Demonstrating Continuous Compliance

Table 9 to Subpart DDDDD of Part 63

Reporting Requirements

Table 10 to Subpart DDDDD of Part 63

Applicability of General Provisions to Subpart DDDDD

Table 11 to Subpart DDDDD of Part 63

Alternative Emission Limits for New or Reconstructed Boilers and Process Heaters That Commenced Construction or Reconstruction After June 4, 2010, and Before May 20, 2011

Table 12 to Subpart DDDDD of Part 63

Alternative Emission Limits for New or Reconstructed Boilers
and Process Heaters That Commenced Construction or
Reconstruction After May 20, 2011, and Before December 23,
2011

Table 13 to Subpart DDDDD of Part 63

Alternative Emission Limits for New or Reconstructed Boilers
and Process Heaters That Commenced Construction or
Reconstruction After December 23, 2011, and Before April 1,
2013

Table 14 to Subpart DDDDD of Part 63

Alternative Emission Limits for New or Reconstructed Boilers
and Process Heaters ^c

Table 15 to Subpart DDDDD of Part 63

Alternative Emission Limits for Existing Boilers and Process
Heaters ^d

**Subpart DDDDD—National Emission Standards for Hazardous Air Pollutants for Major Sources:
Industrial, Commercial, and Institutional Boilers and Process Heaters**

Source: 76 FR 15664, Mar. 21, 2011, unless otherwise noted.

WHAT THIS SUBPART COVERS

§ 63.7480 What is the purpose of this subpart?

This subpart establishes national emission limitations and work practice standards for hazardous air pollutants (HAP) emitted from industrial, commercial, and institutional boilers and process heaters located at major sources of HAP. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and work practice standards.

§ 63.7485 Am I subject to this subpart?

You are subject to this subpart if you own or operate an industrial, commercial, or institutional boiler or process heater as defined in § 63.7575 that is located at, or is part of, a major source of HAP, except as specified in § 63.7491. For purposes of this subpart, a major source of HAP is as defined in § 63.2, except that for oil and natural gas production facilities, a major source of HAP is as defined in § 63.7575.

[78 FR 7162, Jan. 31, 2013]

§ 63.7490 What is the affected source of this subpart?

- (a) This subpart applies to new, reconstructed, and existing affected sources as described in paragraphs (a)(1) and (2) of this section.
 - (1) The affected source of this subpart is the collection at a major source of all existing industrial, commercial, and institutional boilers and process heaters within a subcategory as defined in § 63.7575.
 - (2) The affected source of this subpart is each new or reconstructed industrial, commercial, or institutional boiler or process heater, as defined in § 63.7575, located at a major source.
- (b) A boiler or process heater is new if you commence construction of the boiler or process heater after June 4, 2010, and you meet the applicability criteria at the time you commence construction.
- (c) A boiler or process heater is reconstructed if you meet the reconstruction criteria as defined in § 63.2, you commence reconstruction after June 4, 2010, and you meet the applicability criteria at the time you commence reconstruction.
- (d) A boiler or process heater is existing if it is not new or reconstructed.
- (e) An existing electric utility steam generating unit (EGU) that meets the applicability requirements of this subpart after the effective date of this final rule due to a change (e.g., fuel switch) is considered to be an existing source under this subpart.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7162, Jan. 31, 2013]

§ 63.7491 Are any boilers or process heaters not subject to this subpart?

The types of boilers and process heaters listed in paragraphs (a) through (n) of this section are not subject to this subpart.

- (a) An electric utility steam generating unit (EGU) covered by subpart UUUUU of this part or a natural gas-fired EGU as defined in subpart UUUUU of this part firing at least 85 percent natural gas on an annual heat input basis.
- (b) A recovery boiler or furnace covered by subpart MM of this part.
- (c) A boiler or process heater that is used specifically for research and development, including test steam boilers used to provide steam for testing the propulsion systems on military vessels. This does not include units that provide heat or steam to a process at a research and development facility.
- (d) A hot water heater as defined in this subpart.
- (e) A refining kettle covered by subpart X of this part.
- (f) An ethylene cracking furnace covered by subpart YY of this part.
- (g) Blast furnace stoves as described in EPA-453/R-01-005 (incorporated by reference, see § 63.14).
- (h) Any boiler or process heater that is part of the affected source subject to another subpart of this part, such as boilers and process heaters used as control devices to comply with subparts JJJ, OOO, PPP, and U of this part.

- (i) Any boiler or process heater that is used as a control device to comply with another subpart of this part, or part 60, part 61, or part 65 of this chapter provided that at least 50 percent of the average annual heat input during any 3 consecutive calendar years to the boiler or process heater is provided by regulated gas streams that are subject to another standard.
- (j) Temporary boilers and process heaters as defined in this subpart.
- (k) Blast furnace gas fuel-fired boilers and process heaters as defined in this subpart.
- (l) Any boiler or process heater specifically listed as an affected source in any standard(s) established under section 129 of the Clean Air Act.
- (m) A unit that burns hazardous waste covered by Subpart EEE of this part. A unit that is exempt from Subpart EEE as specified in § 63.1200(b) is not covered by Subpart EEE.
- (n) Residential boilers as defined in this subpart.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7162, Jan. 31, 2013; 80 FR 72806, Nov. 20, 2015]

§ 63.7495 When do I have to comply with this subpart?

- (a) If you have a new or reconstructed boiler or process heater, you must comply with this subpart by April 1, 2013, or upon startup of your boiler or process heater, whichever is later.
- (b) If you have an existing boiler or process heater, you must comply with this subpart no later than January 31, 2016, except as provided in § 63.6(i).
- (c) If you have an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP, paragraphs (c)(1) and (2) of this section apply to you.
 - (1) Any new or reconstructed boiler or process heater at the existing source must be in compliance with this subpart upon startup.
 - (2) Any existing boiler or process heater at the existing source must be in compliance with this subpart within 3 years after the source becomes a major source.
- (d) You must meet the notification requirements in § 63.7545 according to the schedule in § 63.7545 and in subpart A of this part. Some of the notifications must be submitted before you are required to comply with the emission limits and work practice standards in this subpart.
- (e) If you own or operate an industrial, commercial, or institutional boiler or process heater and would be subject to this subpart except for the exemption in § 63.7491(l) for commercial and industrial solid waste incineration units covered by part 60, subpart CCCC or subpart DDDD, and you cease combusting solid waste, you must be in compliance with this subpart and are no longer subject to part 60, subparts CCCC or DDDD beginning on the effective date of the switch as identified under the provisions of § 60.2145(a)(2) and (3) or § 60.2710(a)(2) and (3).
- (f) If you own or operate an existing EGU that becomes subject to this subpart after January 31, 2016, you must be in compliance with the applicable existing source provisions of this subpart on the effective date such unit becomes subject to this subpart.

- (g) If you own or operate an existing industrial, commercial, or institutional boiler or process heater and would be subject to this subpart except for a exemption in § 63.7491(i) that becomes subject to this subpart after January 31, 2013, you must be in compliance with the applicable existing source provisions of this subpart within 3 years after such unit becomes subject to this subpart.
- (h) If you own or operate an existing industrial, commercial, or institutional boiler or process heater and have switched fuels or made a physical change to the boiler or process heater that resulted in the applicability of a different subcategory after the compliance date of this subpart, you must be in compliance with the applicable existing source provisions of this subpart on the effective date of the fuel switch or physical change.
- (i) If you own or operate a new industrial, commercial, or institutional boiler or process heater and have switched fuels or made a physical change to the boiler or process heater that resulted in the applicability of a different subcategory, you must be in compliance with the applicable new source provisions of this subpart on the effective date of the fuel switch or physical change.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7162, Jan. 31, 2013; 80 FR 72807, Nov. 20, 2015]

EMISSION LIMITATIONS AND WORK PRACTICE STANDARDS

§ 63.7499 What are the subcategories of boilers and process heaters?

The subcategories of boilers and process heaters, as defined in § 63.7575 are:

- (a) Pulverized coal/solid fossil fuel units.
- (b) Stokers designed to burn coal/solid fossil fuel.
- (c) Fluidized bed units designed to burn coal/solid fossil fuel.
- (d) Stokers/sloped grate/other units designed to burn kiln dried biomass/bio-based solid.
- (e) Fluidized bed units designed to burn biomass/bio-based solid.
- (f) Suspension burners designed to burn biomass/bio-based solid.
- (g) Fuel cells designed to burn biomass/bio-based solid.
- (h) Hybrid suspension/grate burners designed to burn wet biomass/bio-based solid.
- (i) Stokers/sloped grate/other units designed to burn wet biomass/bio-based solid.
- (j) Dutch ovens/pile burners designed to burn biomass/bio-based solid.
- (k) Units designed to burn liquid fuel that are non-continental units.
- (l) Units designed to burn gas 1 fuels.
- (m) Units designed to burn gas 2 (other) gases.
- (n) Metal process furnaces.
- (o) Limited-use boilers and process heaters.
- (p) Units designed to burn solid fuel.

- (q) Units designed to burn liquid fuel.
- (r) Units designed to burn coal/solid fossil fuel.
- (s) Fluidized bed units with an integrated fluidized bed heat exchanger designed to burn coal/solid fossil fuel.
- (t) Units designed to burn heavy liquid fuel.
- (u) Units designed to burn light liquid fuel.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7163, Jan. 31, 2013]

§ 63.7500 What emission limitations, work practice standards, and operating limits must I meet?

- (a) You must meet the requirements in paragraphs (a)(1) through (3) of this section, except as provided in paragraphs (b) through (e) of this section. You must meet these requirements at all times the affected unit is operating, except as provided in paragraph (f) of this section.
 - (1) You must meet each emission limit and work practice standard in Tables 1 through 3 and 11 through 15 to this subpart that applies to your boiler or process heater, for each boiler or process heater at your source, except as provided under § 63.7522. The output-based emission limits, in units of pounds per million Btu of steam output, in Table 1 or 2 to this subpart are an alternative applicable only to boilers and process heaters that generate either steam, cogenerate steam with electricity, or both. The output-based emission limits, in units of pounds per megawatt-hour, in Table 1 or 2 to this subpart are an alternative applicable only to boilers that generate only electricity. Boilers that perform multiple functions (cogeneration and electricity generation) or supply steam to common headers would calculate a total steam energy output using Equation 1 of § 63.7575 to demonstrate compliance with the output-based emission limits, in units of pounds per million Btu of steam output, in Table 1 or 2 to this subpart. If you operate a new boiler or process heater, you can choose to comply with alternative limits as discussed in paragraphs (a)(1)(i) through (iv) of this section, but on or after October 6, 2025, you must comply with the emission limits in Table 1 to this subpart. If you operate an existing boiler or process heater, you can choose to comply with alternative limits as discussed in paragraph (a)(1)(v) of this section, but on or after October 6, 2025 you must comply with the emission limits in Table 2 to this subpart.
 - (i) If your boiler or process heater commenced construction or reconstruction after June 4, 2010, and before May 20, 2011, you may comply with the emission limits in Table 11 or 14 to this subpart until January 31, 2016.
 - (ii) If your boiler or process heater commenced construction or reconstruction on or after May 20, 2011, and before December 23, 2011, you may comply with the emission limits in Table 12 or 14 to this subpart until January 31, 2016.
 - (iii) If your boiler or process heater commenced construction or reconstruction on or after December 23, 2011, and before April 1, 2013, you may comply with the emission limits in Table 13 or 14 to this subpart until January 31, 2016.
 - (iv) If you operate a new boiler or process heater, you must comply with either the emission limits in Table 1 to this subpart or the emission limits in Table 14 to this subpart until you must comply with the emission limits in Table 1.

- (v) If you operate an existing boiler or process heater, you must comply with either the emission limits in Table 2 to this subpart or the emission limits in Table 15 to this subpart until you must comply with the emission limits in Table 2.
- (2) You must meet each operating limit in Table 4 to this subpart that applies to your boiler or process heater. If you use a control device or combination of control devices not covered in Table 4 to this subpart, or you wish to establish and monitor an alternative operating limit or an alternative monitoring parameter, you must apply to the EPA Administrator for approval of alternative monitoring under § 63.8(f).
- (3) At all times, you must operate and maintain any affected source (as defined in § 63.7490), including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.
- (b) As provided in § 63.6(g), EPA may approve use of an alternative to the work practice standards in this section.
- (c) Limited-use boilers and process heaters must complete a tune-up every 5 years as specified in § 63.7540. They are not subject to the emission limits in Tables 1 and 2 or Tables 11 through 15 to this subpart, the annual tune-up, or the energy assessment requirements in Table 3 to this subpart, or the operating limits in Table 4 to this subpart.
- (d) Boilers and process heaters with a heat input capacity of less than or equal to 5 million Btu per hour in the units designed to burn gas 2 (other) fuels subcategory or units designed to burn light liquid fuels subcategory must complete a tune-up every 5 years as specified in § 63.7540.
- (e) Boilers and process heaters in the units designed to burn gas 1 fuels subcategory with a heat input capacity of less than or equal to 5 million Btu per hour must complete a tune-up every 5 years as specified in § 63.7540. Boilers and process heaters in the units designed to burn gas 1 fuels subcategory with a heat input capacity greater than 5 million Btu per hour and less than 10 million Btu per hour must complete a tune-up every 2 years as specified in § 63.7540. Boilers and process heaters in the units designed to burn gas 1 fuels subcategory are not subject to the emission limits in Tables 1 and 2 or Tables 11 through 15 to this subpart, or the operating limits in Table 4 to this subpart.
- (f) These standards apply at all times the affected unit is operating, except during periods of startup and shutdown during which time you must comply only with items 5 and 6 of Table 3 to this subpart.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7163, Jan. 31, 2013; 80 FR 72807, Nov. 20, 2015; 87 FR 60840, Oct. 6, 2022]

§ 63.7501 [Reserved]

GENERAL COMPLIANCE REQUIREMENTS

§ 63.7505 What are my general requirements for complying with this subpart?

- (a) You must be in compliance with the emission limits, work practice standards, and operating limits in this subpart. These emission and operating limits apply to you at all times the affected unit is operating except for the periods noted in § 63.7500(f).
- (b) [Reserved]
- (c) You must demonstrate compliance with all applicable emission limits using performance stack testing, fuel analysis, or continuous monitoring systems (CMS), including a continuous emission monitoring system (CEMS), continuous opacity monitoring system (COMS), continuous parameter monitoring system (CPMS), or particulate matter continuous parameter monitoring system (PM CPMS), where applicable. You may demonstrate compliance with the applicable emission limit for hydrogen chloride (HCl), mercury, or total selected metals (TSM) using fuel analysis if the emission rate calculated according to § 63.7530(c) is less than the applicable emission limit. For gaseous fuels, you may not use fuel analyses to comply with the TSM alternative standard or the HCl standard. Otherwise, you must demonstrate compliance for HCl, mercury, or TSM using performance stack testing, if subject to an applicable emission limit listed in Table 1 or 2 or Tables 11 through 15 to this subpart.
- (d) If you demonstrate compliance with any applicable emission limit through performance testing and subsequent compliance with operating limits through the use of CPMS, or with a CEMS or COMS, you must develop a site-specific monitoring plan according to the requirements in paragraphs (d)(1) through (4) of this section for the use of any CEMS, COMS, or CPMS. This requirement also applies to you if you petition the EPA Administrator for alternative monitoring parameters under § 63.8(f).
 - (1) For each CMS required in this section (including CEMS, COMS, or CPMS), you must develop, and submit to the Administrator for approval upon request, a site-specific monitoring plan that addresses design, data collection, and the quality assurance and quality control elements outlined in § 63.8(d) and the elements described in paragraphs (d)(1)(i) through (iii) of this section. You must submit this site-specific monitoring plan, if requested, at least 60 days before your initial performance evaluation of your CMS. This requirement to develop and submit a site specific monitoring plan does not apply to affected sources with existing CEMS or COMS operated according to the performance specifications under appendix B to part 60 of this chapter and that meet the requirements of § 63.7525. Using the process described in § 63.8(f)(4), you may request approval of alternative monitoring system quality assurance and quality control procedures in place of those specified in this paragraph and, if approved, include the alternatives in your site-specific monitoring plan.
 - (i) Installation of the CMS sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions (e.g., on or downstream of the last control device);
 - (ii) Performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer, and the data collection and reduction systems; and
 - (iii) Performance evaluation procedures and acceptance criteria (e.g., calibrations, accuracy audits, analytical drift).
 - (2) In your site-specific monitoring plan, you must also address paragraphs (d)(2)(i) through (iii) of this section.
 - (i) Ongoing operation and maintenance procedures in accordance with the general requirements of § 63.8(c)(1)(ii), (c)(3), and (c)(4)(ii);

- (ii) Ongoing data quality assurance procedures in accordance with the general requirements of § 63.8(d); and
 - (iii) Ongoing recordkeeping and reporting procedures in accordance with the general requirements of § 63.10(c) (as applicable in Table 10 to this subpart), (e)(1), and (e)(2)(i).
- (3) You must conduct a performance evaluation of each CMS in accordance with your site-specific monitoring plan.
- (4) You must operate and maintain the CMS in continuous operation according to the site-specific monitoring plan.
- (e) If you have an applicable emission limit, and you choose to comply using definition (2) of “startup” in § 63.7575, you must develop and implement a written startup and shutdown plan (SSP) according to the requirements in Table 3 to this subpart. The SSP must be maintained onsite and available upon request for public inspection.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7164, Jan. 31, 2013; 80 FR 72807, Nov. 20, 2015; 87 FR 60841, Oct. 6, 2022]

TESTING, FUEL ANALYSES, AND INITIAL COMPLIANCE REQUIREMENTS

§ 63.7510 What are my initial compliance requirements and by what date must I conduct them?

- (a) For each boiler or process heater that is required or that you elect to demonstrate compliance with any of the applicable emission limits in Table 1 or 2 or Tables 11 through 15 to this subpart through performance (stack) testing, your initial compliance requirements include all the following:
- (1) Conduct performance tests according to § 63.7520 and Table 5 to this subpart.
 - (2) Conduct a fuel analysis for each type of fuel burned in your boiler or process heater according to § 63.7521 and Table 6 to this subpart, except as specified in paragraphs (a)(2)(i) through (iii) of this section.
 - (i) For each boiler or process heater that burns a single type of fuel, you are not required to conduct a fuel analysis for each type of fuel burned in your boiler or process heater according to § 63.7521 and Table 6 to this subpart. For purposes of this subpart, units that use a supplemental fuel only for startup, unit shutdown, and transient flame stability purposes still qualify as units that burn a single type of fuel, and the supplemental fuel is not subject to the fuel analysis requirements under § 63.7521 and Table 6 to this subpart.
 - (ii) When natural gas, refinery gas, or other gas 1 fuels are co-fired with other fuels, you are not required to conduct a fuel analysis of those Gas 1 fuels according to § 63.7521 and Table 6 to this subpart. If gaseous fuels other than natural gas, refinery gas, or other gas 1 fuels are co-fired with other fuels and those non-Gas 1 gaseous fuels are subject to another subpart of this part, part 60, part 61, or part 65, you are not required to conduct a fuel analysis of those non-Gas 1 fuels according to § 63.7521 and Table 6 to this subpart.
 - (iii) You are not required to conduct a chlorine fuel analysis for any gaseous fuels. You must conduct a fuel analysis for mercury on gaseous fuels unless the fuel is exempted in paragraphs (a)(2)(i) and (ii) of this section.
 - (3) Establish operating limits according to § 63.7530 and Table 7 to this subpart.

- (4) Conduct CMS performance evaluations according to § 63.7525.
- (b) For each boiler or process heater that you elect to demonstrate compliance with the applicable emission limits in Table 1 or 2 or Tables 11 through 15 to this subpart for HCl, mercury, or TSM through fuel analysis, your initial compliance requirement is to conduct a fuel analysis for each type of fuel burned in your boiler or process heater according to § 63.7521 and Table 6 to this subpart and establish operating limits according to § 63.7530 and Table 8 to this subpart. The fuels described in paragraphs (a)(2)(i) and (ii) of this section are exempt from these fuel analysis and operating limit requirements. The fuels described in paragraph (a)(2)(ii) of this section are exempt from the chloride fuel analysis and operating limit requirements. Boilers and process heaters that use a CEMS for mercury or HCl are exempt from the performance testing and operating limit requirements specified in paragraph (a) of this section for the HAP for which CEMS are used.
- (c) If your boiler or process heater is subject to a carbon monoxide (CO) limit, your initial compliance demonstration for CO is to conduct a performance test for CO according to Table 5 to this subpart or conduct a performance evaluation of your continuous CO monitor, if applicable, according to § 63.7525(a). Boilers and process heaters that use a CO CEMS to comply with the applicable alternative CO CEMS emission standard listed in Table 1 or 2 or Tables 11 through 15 to this subpart, as specified in § 63.7525(a), are exempt from the initial CO performance testing and oxygen concentration operating limit requirements specified in paragraph (a) of this section.
- (d) If your boiler or process heater is subject to a PM limit, your initial compliance demonstration for PM is to conduct a performance test in accordance with § 63.7520 and Table 5 to this subpart.
- (e) For existing affected sources (as defined in § 63.7490), you must complete the initial compliance demonstrations, as specified in paragraphs (a) through (d) of this section, no later than 180 days after the compliance date that is specified for your source in § 63.7495 and according to the applicable provisions in § 63.7(a)(2) as cited in Table 10 to this subpart, except as specified in paragraph (j) of this section. You must complete an initial tune-up by following the procedures described in § 63.7540(a)(10)(i) through (vi) no later than the compliance date specified in § 63.7495, except as specified in paragraph (j) of this section. You must complete the one-time energy assessment specified in Table 3 to this subpart no later than the compliance date specified in § 63.7495.
- (f) For new or reconstructed affected sources (as defined in § 63.7490), you must complete the initial compliance demonstration with the emission limits no later than July 30, 2013, or within 180 days after startup of the source, whichever is later.
 - (1) If you are demonstrating compliance with an emission limit in Tables 11 through 13 to this subpart that is less stringent than the applicable emission limit in Table 14 to this subpart, you must demonstrate compliance with the applicable emission limit in Table 14 no later than July 29, 2016.
 - (2) If you are demonstrating compliance with an emission limit in Table 14 to this subpart that is less stringent than the applicable emission limit in Table 1 to this subpart, you must demonstrate compliance with the applicable emission limit in Table 1 no later than October 6, 2025.
- (g) For new or reconstructed affected sources (as defined in § 63.7490), you must demonstrate initial compliance with the applicable work practice standards in Table 3 to this subpart within the applicable annual, biennial, or 5-year schedule as specified in § 63.7515(d) following the initial compliance date specified in § 63.7495(a). Thereafter, you are required to complete the applicable annual, biennial, or 5-year tune-up as specified in § 63.7515(d).

- (h) For affected sources (as defined in § 63.7490) that ceased burning solid waste consistent with § 63.7495(e) and for which the initial compliance date has passed, you must demonstrate compliance within 60 days of the effective date of the waste-to-fuel switch. If you have not conducted your compliance demonstration for this subpart within the previous 12 months, you must complete all compliance demonstrations for this subpart before you commence or recommence combustion of solid waste.
- (i) For an existing EGU that becomes subject after January 31, 2016, you must demonstrate compliance within 180 days after becoming an affected source.
- (j) For existing affected sources (as defined in § 63.7490) that have not operated between the effective date of the rule and the compliance date that is specified for your source in § 63.7495, you must complete the initial compliance demonstration, if subject to the emission limits in Table 2 or 14 to this subpart, as applicable, as specified in paragraphs (a) through (d) of this section, no later than 180 days after the re-start of the affected source and according to the applicable provisions in § 63.7(a)(2) as cited in Table 10 to this subpart. You must complete an initial tune-up by following the procedures described in § 63.7540(a)(10)(i) through (vi) no later than 30 days after the re-start of the affected source and, if applicable, complete the one-time energy assessment specified in Table 3 to this subpart, no later than the compliance date specified in § 63.7495.
- (k) For affected sources, as defined in § 63.7490, that switch subcategories consistent with § 63.7545(h) after the initial compliance date, you must demonstrate compliance within 60 days of the effective date of the switch, unless you had previously conducted your compliance demonstration for this subcategory within the previous 12 months.

[78 FR 7164, Jan. 31, 2013, as amended at 80 FR 72808, Nov. 20, 2015; 87 FR 60841, Oct. 6, 2022]

§ 63.7515 When must I conduct subsequent performance tests, fuel analyses, or tune-ups?

- (a) You must conduct all applicable performance tests according to § 63.7520 on an annual basis, except as specified in paragraphs (b) through (e), (g), and (h) of this section. Annual performance tests must be completed no more than 13 months after the previous performance test, except as specified in paragraphs (b) through (e), (g), and (h) of this section.
- (b) If your performance tests for a given pollutant for at least 2 consecutive years show that your emissions are at or below 75 percent of the emission limit (or, in limited instances as specified in Tables 1 and 2 or 11 through 15 to this subpart, at or below the emission limit) for the pollutant, and if there are no changes in the operation of the individual boiler or process heater or air pollution control equipment that could increase emissions, you may choose to conduct performance tests for the pollutant every third year. Each such performance test must be conducted no more than 37 months after the previous performance test. If you elect to demonstrate compliance using emission averaging under § 63.7522, you must continue to conduct performance tests annually. The requirement to test at maximum chloride input level is waived unless the stack test is conducted for HCl. The requirement to test at maximum mercury input level is waived unless the stack test is conducted for mercury. The requirement to test at maximum TSM input level is waived unless the stack test is conducted for TSM.

- (c) If a performance test shows emissions exceeded the emission limit or 75 percent of the emission limit (as specified in Tables 1 and 2 or 11 through 15 to this subpart) for a pollutant, you must conduct annual performance tests for that pollutant until all performance tests over a consecutive 2-year period meet the required level (at or below 75 percent of the emission limit, as specified in Tables 1 and 2 or 11 through 15).
- (d) If you are required to meet an applicable tune-up work practice standard, you must conduct an annual, biennial, or 5-year performance tune-up according to § 63.7540(a)(10), (11), or (12), respectively. Each annual tune-up specified in § 63.7540(a)(10) must be no more than 13 months after the previous tune-up. Each biennial tune-up specified in § 63.7540(a)(11) must be conducted no more than 25 months after the previous tune-up. Each 5-year tune-up specified in § 63.7540(a)(12) must be conducted no more than 61 months after the previous tune-up. For a new or reconstructed affected source (as defined in § 63.7490), the first annual, biennial, or 5-year tune-up must be no later than 13 months, 25 months, or 61 months, respectively, after April 1, 2013 or the initial startup of the new or reconstructed affected source, whichever is later.
- (e) If you demonstrate compliance with the mercury, HCl, or TSM based on fuel analysis, you must conduct a monthly fuel analysis according to § 63.7521 for each type of fuel burned that is subject to an emission limit in Table 1 or 2 or Tables 11 through 15 to this subpart. You may comply with this monthly requirement by completing the fuel analysis any time within the calendar month as long as the analysis is separated from the previous analysis by at least 14 calendar days. If you burn a new type of fuel, you must conduct a fuel analysis before burning the new type of fuel in your boiler or process heater. You must still meet all applicable continuous compliance requirements in § 63.7540. If each of 12 consecutive monthly fuel analyses demonstrates 75 percent or less of the compliance level, you may decrease the fuel analysis frequency to quarterly for that fuel. If any quarterly sample exceeds 75 percent of the compliance level or you begin burning a new type of fuel, you must return to monthly monitoring for that fuel, until 12 months of fuel analyses are again less than 75 percent of the compliance level. If sampling is conducted on 1 day per month, samples should be no less than 14 days apart, but if multiple samples are taken per month, the 14-day restriction does not apply.
- (f) You must report the results of performance tests and the associated fuel analyses within 60 days after the completion of the performance tests. This report must also verify that the operating limits for each boiler or process heater have not changed or provide documentation of revised operating limits established according to § 63.7530 and Table 7 to this subpart, as applicable. The reports for all subsequent performance tests must include all applicable information required in § 63.7550.
- (g) For affected sources (as defined in § 63.7490) that have not operated since the previous compliance demonstration and more than 1 year has passed since the previous compliance demonstration, you must complete the subsequent compliance demonstration, if subject to the emission limits in Table 1 or 2 or Tables 11 through 15 to this subpart, no later than 180 days after the re-start of the affected source and according to the applicable provisions in § 63.7(a)(2) as cited in Table 10 to this subpart. You must complete a subsequent tune-up by following the procedures described in § 63.7540(a)(10)(i) through (vi) and the schedule described in § 63.7540(a)(13) for units that are not operating at the time of their scheduled tune-up.
- (h) If your affected boiler or process heater is in the unit designed to burn light liquid subcategory and you combust ultra-low sulfur liquid fuel, you do not need to conduct further performance tests (stack tests or fuel analyses) if the pollutants measured during the initial compliance performance tests meet the emission limits in Tables 1 or 2 of this subpart providing you demonstrate ongoing compliance with the

emissions limits by monitoring and recording the type of fuel combusted on a monthly basis. If you intend to use a fuel other than ultra-low sulfur liquid fuel, natural gas, refinery gas, or other gas 1 fuel, you must conduct new performance tests within 60 days of burning the new fuel type.

- (i) If you operate a CO CEMS that meets the Performance Specifications outlined in § 63.7525(a)(3) to demonstrate compliance with the applicable alternative CO CEMS emission standard listed in Table 1 or 2 or Tables 11 through 15 to this subpart, you are not required to conduct CO performance tests and are not subject to the oxygen concentration operating limit requirement specified in § 63.7510(a).

[78 FR 7165, Jan. 31, 2013, as amended at 80 FR 72808, Nov. 20, 2015; 87 FR 60842, Oct. 6, 2022]

§ 63.7520 What stack tests and procedures must I use?

- (a) You must conduct all performance tests according to § 63.7(c), (d), (f), and (h). You must also develop a site-specific stack test plan according to the requirements in § 63.7(c). You shall conduct all performance tests under such conditions as the Administrator specifies to you based on the representative performance of each boiler or process heater for the period being tested. Upon request, you shall make available to the Administrator such records as may be necessary to determine the conditions of the performance tests.
- (b) You must conduct each performance test according to the requirements in Table 5 to this subpart.
- (c) You must conduct each performance test under the specific conditions listed in Tables 5 and 7 to this subpart. You must conduct performance tests at representative operating load conditions while burning the type of fuel or mixture of fuels that has the highest content of chlorine and mercury, and TSM if you are opting to comply with the TSM alternative standard and you must demonstrate initial compliance and establish your operating limits based on these performance tests. These requirements could result in the need to conduct more than one performance test. Following each performance test and until the next performance test, you must comply with the operating limit for operating load conditions specified in Table 4 to this subpart.
- (d) You must conduct a minimum of three separate test runs for each performance test required in this section, as specified in § 63.7(e)(3). Each test run must comply with the minimum applicable sampling times or volumes specified in Tables 1 and 2 or 11 through 15 to this subpart.
- (e) To determine compliance with the emission limits, you must use the F-Factor methodology and equations in sections 12.2 and 12.3 of EPA Method 19 at 40 CFR part 60, appendix A-7 of this chapter to convert the measured particulate matter (PM) concentrations, the measured HCl concentrations, the measured mercury concentrations, and the measured TSM concentrations that result from the performance test to pounds per million Btu heat input emission rates.
- (f) Except for a 30-day rolling average based on CEMS (or sorbent trap monitoring system) data, if measurement results for any pollutant are reported as below the method detection level (e.g., laboratory analytical results for one or more sample components are below the method defined analytical detection level), you must use the method detection level as the measured emissions level for that pollutant in calculating compliance. The measured result for a multiple component analysis (e.g., analytical values for multiple Method 29 fractions both for individual HAP metals and for total HAP metals) may include a combination of method detection level data and analytical data reported above the method detection level.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7166, Jan. 31, 2013; 87 FR 60842, Oct. 6, 2022]

§ 63.7521 What fuel analyses, fuel specification, and procedures must I use?

- (a) For solid and liquid fuels, you must conduct fuel analyses for chloride and mercury according to the procedures in paragraphs (b) through (e) of this section and Table 6 to this subpart, as applicable. For solid fuels and liquid fuels, you must also conduct fuel analyses for TSM if you are opting to comply with the TSM alternative standard. For gas 2 (other) fuels, you must conduct fuel analyses for mercury according to the procedures in paragraphs (b) through (e) of this section and Table 6 to this subpart, as applicable. For gaseous fuels, you may not use fuel analyses to comply with the TSM alternative standard or the HCl standard. For purposes of complying with this section, a fuel gas system that consists of multiple gaseous fuels collected and mixed with each other is considered a single fuel type and sampling and analysis is only required on the combined fuel gas system that will feed the boiler or process heater. Sampling and analysis of the individual gaseous streams prior to combining is not required. You are not required to conduct fuel analyses for fuels used for only startup, unit shutdown, and transient flame stability purposes. You are required to conduct fuel analyses only for fuels and units that are subject to emission limits for mercury, HCl, or TSM in Tables 1 and 2 or 11 through 15 to this subpart. Gaseous and liquid fuels are exempt from the sampling requirements in paragraphs (c) and (d) of this section.
- (b) You must develop a site-specific fuel monitoring plan according to the following procedures and requirements in paragraphs (b)(1) and (2) of this section, if you are required to conduct fuel analyses as specified in § 63.7510.
 - (1) If you intend to use an alternative analytical method other than those required by Table 6 to this subpart, you must submit the fuel analysis plan to the Administrator for review and approval no later than 60 days before the date that you intend to conduct the initial compliance demonstration described in § 63.7510.
 - (2) You must include the information contained in paragraphs (b)(2)(i) through (vi) of this section in your fuel analysis plan.
 - (i) The identification of all fuel types anticipated to be burned in each boiler or process heater.
 - (ii) For each anticipated fuel type, the notification of whether you or a fuel supplier will be conducting the fuel analysis.
 - (iii) For each anticipated fuel type, a detailed description of the sample location and specific procedures to be used for collecting and preparing the composite samples if your procedures are different from paragraph (c) or (d) of this section. Samples should be collected at a location that most accurately represents the fuel type, where possible, at a point prior to mixing with other dissimilar fuel types.
 - (iv) For each anticipated fuel type, the analytical methods from Table 6, with the expected minimum detection levels, to be used for the measurement of chlorine or mercury.
 - (v) If you request to use an alternative analytical method other than those required by Table 6 to this subpart, you must also include a detailed description of the methods and procedures that you are proposing to use. Methods in Table 6 shall be used until the requested alternative is approved.
 - (vi) If you will be using fuel analysis from a fuel supplier in lieu of site-specific sampling and analysis, the fuel supplier must use the analytical methods required by Table 6 to this subpart.

- (c) You must obtain composite fuel samples for each fuel type according to the procedures in paragraph (c)(1) or (2) of this section, or the methods listed in Table 6 to this subpart, or use an automated sampling mechanism that provides representative composite fuel samples for each fuel type that includes both coarse and fine material. At a minimum, for demonstrating initial compliance by fuel analysis, you must obtain three composite samples. For monthly fuel analyses, at a minimum, you must obtain a single composite sample. For fuel analyses as part of a performance stack test, as specified in § 63.7510(a), you must obtain a composite fuel sample during each performance test run.
 - (1) If sampling from a belt (or screw) feeder, collect fuel samples according to paragraphs (c)(1)(i) and (ii) of this section.
 - (i) Stop the belt and withdraw a 6-inch wide sample from the full cross-section of the stopped belt to obtain a minimum two pounds of sample. You must collect all the material (fines and coarse) in the full cross-section. You must transfer the sample to a clean plastic bag.
 - (ii) Each composite sample will consist of a minimum of three samples collected at approximately equal intervals during the testing period for sampling during performance stack testing.
 - (2) If sampling from a fuel pile or truck, you must collect fuel samples according to paragraphs (c)(2)(i) through (iii) of this section.
 - (i) For each composite sample, you must select a minimum of five sampling locations uniformly spaced over the surface of the pile.
 - (ii) At each sampling site, you must dig into the pile to a uniform depth of approximately 18 inches. You must insert a clean shovel into the hole and withdraw a sample, making sure that large pieces do not fall off during sampling; use the same shovel to collect all samples.
 - (iii) You must transfer all samples to a clean plastic bag for further processing.
- (d) You must prepare each composite sample according to the procedures in paragraphs (d)(1) through (7) of this section.
 - (1) You must thoroughly mix and pour the entire composite sample over a clean plastic sheet.
 - (2) You must break large sample pieces (e.g., larger than 3 inches) into smaller sizes.
 - (3) You must make a pie shape with the entire composite sample and subdivide it into four equal parts.
 - (4) You must separate one of the quarter samples as the first subset.
 - (5) If this subset is too large for grinding, you must repeat the procedure in paragraph (d)(3) of this section with the quarter sample and obtain a one-quarter subset from this sample.
 - (6) You must grind the sample in a mill.
 - (7) You must use the procedure in paragraph (d)(3) of this section to obtain a one-quarter subsample for analysis. If the quarter sample is too large, subdivide it further using the same procedure.
- (e) You must determine the concentration of pollutants in the fuel (mercury and/or chlorine and/or TSM) in units of pounds per million Btu of each composite sample for each fuel type according to the procedures in Table 6 to this subpart, for use in Equations 7, 8, and 9 of this subpart.
- (f) To demonstrate that a gaseous fuel other than natural gas or refinery gas qualifies as an other gas 1 fuel, as defined in § 63.7575, you must conduct a fuel specification analyses for mercury according to the procedures in paragraphs (g) through (i) of this section and Table 6 to this subpart, as applicable, except

as specified in paragraph (f)(1) through (4) of this section, or as an alternative where fuel specification analysis is not practical, you must measure mercury concentration in the exhaust gas when firing only the gaseous fuel to be demonstrated as an other gas 1 fuel in the boiler or process heater according to the procedures in Table 6 to this subpart.

- (1) You are not required to conduct the fuel specification analyses in paragraphs (g) through (i) of this section for natural gas or refinery gas.
 - (2) You are not required to conduct the fuel specification analyses in paragraphs (g) through (i) of this section for gaseous fuels that are subject to another subpart of this part, part 60, part 61, or part 65.
 - (3) You are not required to conduct the fuel specification analyses in paragraphs (g) through (i) of this section on gaseous fuels for units that are complying with the limits for units designed to burn gas 2 (other) fuels.
 - (4) You are not required to conduct the fuel specification analyses in paragraphs (g) through (i) of this section for gas streams directly derived from natural gas at natural gas production sites or natural gas plants.
- (g) You must develop a site-specific fuel analysis plan for other gas 1 fuels according to the following procedures and requirements in paragraphs (g)(1) and (2) of this section.
- (1) If you intend to use an alternative analytical method other than those required by Table 6 to this subpart, you must submit the fuel analysis plan to the Administrator for review and approval no later than 60 days before the date that you intend to conduct the initial compliance demonstration described in § 63.7510.
 - (2) You must include the information contained in paragraphs (g)(2)(i) through (vi) of this section in your fuel analysis plan.
 - (i) The identification of all gaseous fuel types other than those exempted from fuel specification analysis under (f)(1) through (3) of this section anticipated to be burned in each boiler or process heater.
 - (ii) For each anticipated fuel type, the identification of whether you or a fuel supplier will be conducting the fuel specification analysis.
 - (iii) For each anticipated fuel type, a detailed description of the sample location and specific procedures to be used for collecting and preparing the samples if your procedures are different from the sampling methods contained in Table 6 to this subpart. Samples should be collected at a location that most accurately represents the fuel type, where possible, at a point prior to mixing with other dissimilar fuel types. If multiple boilers or process heaters are fueled by a common fuel stream it is permissible to conduct a single gas specification at the common point of gas distribution.
 - (iv) For each anticipated fuel type, the analytical methods from Table 6 to this subpart, with the expected minimum detection levels, to be used for the measurement of mercury.
 - (v) If you request to use an alternative analytical method other than those required by Table 6 to this subpart, you must also include a detailed description of the methods and procedures that you are proposing to use. Methods in Table 6 to this subpart shall be used until the requested alternative is approved.

(vi) If you will be using fuel analysis from a fuel supplier in lieu of site-specific sampling and analysis, the fuel supplier must use the analytical methods required by Table 6 to this subpart. When using a fuel supplier's fuel analysis, the owner or operator is not required to submit the information in § 63.7521(g)(2)(iii).

(h) You must obtain a single fuel sample for each fuel type for fuel specification of gaseous fuels.

(i) You must determine the concentration in the fuel of mercury, in units of microgram per cubic meter, dry basis, of each sample for each other gas 1 fuel type according to the procedures in Table 6 to this subpart.

[78 FR 7167, Jan. 31, 2013, as amended at 80 FR 72808, Nov. 20, 2015; 87 FR 60842, Oct. 6, 2022]

§ 63.7522 Can I use emissions averaging to comply with this subpart?

(a) As an alternative to meeting the requirements of § 63.7500 for PM (or TSM), HCl, or mercury on a boiler or process heater-specific basis, if you have more than one existing boiler or process heater in any subcategories located at your facility, you may demonstrate compliance by emissions averaging, if your averaged emissions are not more than 90 percent of the applicable emission limit, according to the procedures in this section. You may not include new boilers or process heaters in an emissions average.

(b) For a group of two or more existing boilers or process heaters in the same subcategory that each vent to a separate stack, you may average PM (or TSM), HCl, or mercury emissions among existing units to demonstrate compliance with the limits in Table 2 or 15 to this subpart as specified in paragraphs (b)(1) through (3) of this section, if you satisfy the requirements in paragraphs (c) through (g) of this section.

(1) You may average units using a CEMS or PM CPMS for demonstrating compliance.

(2) For mercury and HCl, averaging is allowed as follows:

(i) You may average among units in any of the solid fuel subcategories.

(ii) You may average among units in any of the liquid fuel subcategories.

(iii) You may average among units in a subcategory of units designed to burn gas 2 (other) fuels.

(iv) You may not average across the units designed to burn liquid, units designed to burn solid fuel, and units designed to burn gas 2 (other) subcategories.

(3) For PM (or TSM), averaging is only allowed between units within each of the following subcategories and you may not average across subcategories:

(i) Units designed to burn coal/solid fossil fuel.

(ii) Stokers/sloped grate/other units designed to burn kiln dried biomass/bio-based solids.

(iii) Stokers/sloped grate/other units designed to burn wet biomass/bio-based solids.

(iv) Fluidized bed units designed to burn biomass/bio-based solid.

(v) Suspension burners designed to burn biomass/bio-based solid.

(vi) Dutch ovens/pile burners designed to burn biomass/bio-based solid.

(vii) Fuel Cells designed to burn biomass/bio-based solid.

(viii) Hybrid suspension/grate burners designed to burn wet biomass/bio-based solid.

- (ix) Units designed to burn heavy liquid fuel.
 - (x) Units designed to burn light liquid fuel.
 - (xi) Units designed to burn liquid fuel that are non-continental units.
 - (xii) Units designed to burn gas 2 (other) gases.
- (c) For each existing boiler or process heater in the averaging group, the emission rate achieved during the initial compliance test for the HAP being averaged must not exceed the emission level that was being achieved on April 1, 2013 or the control technology employed during the initial compliance test must not be less effective for the HAP being averaged than the control technology employed on April 1, 2013.
- (d) The averaged emissions rate from the existing boilers and process heaters participating in the emissions averaging option must not exceed 90 percent of the limits in Table 2 or 15 to this subpart at all times the affected units are subject to numeric emission limits following the compliance date specified in § 63.7495.
- (e) You must demonstrate initial compliance according to paragraph (e)(1) or (2) of this section using the maximum rated heat input capacity or maximum steam generation capacity of each unit and the results of the initial performance tests or fuel analysis.
- (1) You must use Equation 1a or 1b or 1c to this paragraph (e)(1) to demonstrate that the PM (or TSM), HCl, or mercury emissions from all existing units participating in the emissions averaging option for that pollutant do not exceed the emission limits in Table 2 or 15 to this subpart. Use Equation 1a if you are complying with the emission limits on a heat input basis, use Equation 1b if you are complying with the emission limits on a steam generation (output) basis, and use Equation 1c if you are complying with the emission limits on a electric generation (output) basis.

Equation 1a to paragraph (e)(1)

$$AveWeightedEmissions = 1.1 \times \sum_{i=1}^n (Er \times Hm) \div \sum_{i=1}^n Hm \quad (Eq. 1a)$$

Where:

AveWeightedEmissions = Average weighted emissions for PM (or TSM), HCl, or mercury, in units of pounds per million Btu of heat input.

Er = Emission rate (as determined during the initial compliance demonstration) of PM (or TSM), HCl, or mercury from unit, *i*, in units of pounds per million Btu of heat input. Determine the emission rate for PM (or TSM), HCl, or mercury by performance testing according to Table 5 to this subpart, or by fuel analysis for HCl or mercury or TSM using the applicable equation in § 63.7530(c).

Hm = Maximum rated heat input capacity of unit, *i*, in units of million Btu per hour.

n = Number of units participating in the emissions averaging option.

1.1 = Required discount factor.

Equation 1b to paragraph (e)(1)

$$AveWeightedEmissions = 1.1 \times \sum_{i=1}^n (Er \times So) \div \sum_{i=1}^n So \quad (Eq. 1b)$$

Where:

AveWeightedEmissions = Average weighted emissions for PM (or TSM), HCl, or mercury, in units of pounds per million Btu of steam output.

Er = Emission rate (as determined during the initial compliance demonstration) of PM (or TSM), HCl, or mercury from unit, *i*, in units of pounds per million Btu of steam output. Determine the emission rate for PM (or TSM), HCl, or mercury by performance testing according to Table 5 to this subpart, or by fuel analysis for HCl or mercury or TSM using the applicable equation in § 63.7530(c). If you are taking credit for energy conservation measures from a unit according to § 63.7533, use the adjusted emission level for that unit, *Eadj*, determined according to § 63.7533 for that unit.

So = Maximum steam output capacity of unit, *i*, in units of million Btu per hour, as defined in § 63.7575.

n = Number of units participating in the emissions averaging option.

1.1 = Required discount factor.

Equation 1c to paragraph (e)(1)

$$AveWeightedEmissions = 1.1 \times \sum_{i=1}^n (Er \times Eo) \div \sum_{i=1}^n Eo \quad (Eq. 1c)$$

Where:

AveWeightedEmissions = Average weighted emissions for PM (or TSM), HCl, or mercury, in units of pounds per megawatt hour.

Er = Emission rate (as determined during the initial compliance demonstration) of PM (or TSM), HCl, or mercury from unit, *i*, in units of pounds per megawatt hour. Determine the emission rate for PM (or TSM), HCl, or mercury by performance testing according to Table 5 to this subpart, or by fuel analysis for HCl or mercury or TSM using the applicable equation in § 63.7530(c). If you are taking credit for energy conservation measures from a unit according to § 63.7533, use the adjusted emission level for that unit, *Eadj*, determined according to § 63.7533 for that unit.

Eo = Maximum electric generating output capacity of unit, *i*, in units of megawatt hour, as defined in § 63.7575.

n = Number of units participating in the emissions averaging option.

1.1 = Required discount factor.

- (2) If you are not capable of determining the maximum rated heat input capacity of one or more boilers that generate steam, you may use Equation 2 to this paragraph (e)(2) as an alternative to using Equation 1a of paragraph (e)(1) of this section to demonstrate that the PM (or TSM), HCl, or mercury emissions from all existing units participating in the emissions averaging option do not exceed the emission limits for that pollutant in Table 2 or 15 to this subpart that are in pounds per million Btu of heat input.

Equation 2 to paragraph (e)(2)

$$AveWeightedEmissions = 1.1 \times \sum_{i=1}^n (Er \times Sm \times Cfi) \div \sum_{i=1}^n (Sm \times Cfi) \quad (Eq. 2)$$

Where:

AveWeightedEmissions = Average weighted emission level for PM (or TSM), HCl, or mercury, in units of pounds per million Btu of heat input.

Er = Emission rate (as determined during the most recent compliance demonstration) of PM (or TSM), HCl, or mercury from unit, *i*, in units of pounds per million Btu of heat input. Determine the emission rate for PM (or TSM), HCl, or mercury by performance testing according to Table 5 to this subpart, or by fuel analysis for HCl or mercury or TSM using the applicable equation in § 63.7530(c).

Sm = Maximum steam generation capacity by unit, *i*, in units of pounds per hour.

Cfi = Conversion factor, calculated from the most recent compliance test, in units of million Btu of heat input per pounds of steam generated for unit, *i*.

1.1 = Required discount factor.

- (f) After the initial compliance demonstration described in paragraph (e) of this section, you must demonstrate compliance on a monthly basis determined at the end of every month (12 times per year) according to paragraphs (f)(1) through (3) of this section. The first monthly period begins on the compliance date specified in § 63.7495. If the affected source elects to collect monthly data for up the 11 months preceding the first monthly period, these additional data points can be used to compute the 12-month rolling average in paragraph (f)(3) of this section.

- (1) For each calendar month, you must use Equation 3a or 3b or 3c of this section to calculate the average weighted emission rate for that month. Use Equation 3a and the actual heat input for the month for each existing unit participating in the emissions averaging option if you are complying with emission limits on a heat input basis. Use Equation 3b and the actual steam generation for the month if you are complying with the emission limits on a steam generation (output) basis. Use Equation 3c and the actual electrical generation for the month if you are complying with the emission limits on an electrical generation (output) basis.

$$AveWeightedEmissions = 1.1 \times \sum_{i=1}^n (Er \times Hb) \div \sum_{i=1}^n Hb \quad (Eq. 3a)$$

Where:

AveWeightedEmissions = Average weighted emission level for PM (or TSM), HCl, or mercury, in units of pounds per million Btu of heat input, for that calendar month.

Er = Emission rate (as determined during the most recent compliance demonstration) of PM (or TSM), HCl, or mercury from unit, i, in units of pounds per million Btu of heat input. Determine the emission rate for PM (or TSM), HCl, or mercury by performance testing according to Table 5 to this subpart, or by fuel analysis for HCl or mercury or TSM according to Table 6 to this subpart.

Hb = The heat input for that calendar month to unit, i, in units of million Btu.

n = Number of units participating in the emissions averaging option.

1.1 = Required discount factor.

$$AveWeightedEmissions = 1.1 \times \sum_{i=1}^n (Er \times So) \div \sum_{i=1}^n So \quad (\text{Eq. 3b})$$

Where:

AveWeightedEmissions = Average weighted emission level for PM (or TSM), HCl, or mercury, in units of pounds per million Btu of steam output, for that calendar month.

Er = Emission rate (as determined during the most recent compliance demonstration) of PM (or TSM), HCl, or mercury from unit, i, in units of pounds per million Btu of steam output. Determine the emission rate for PM (or TSM), HCl, or mercury by performance testing according to Table 5 to this subpart, or by fuel analysis for HCl or mercury or TSM according to Table 6 to this subpart. If you are taking credit for energy conservation measures from a unit according to § 63.7533, use the adjusted emission level for that unit, E_{adj}, determined according to § 63.7533 for that unit.

So = The steam output for that calendar month from unit, i, in units of million Btu, as defined in § 63.7575.

n = Number of units participating in the emissions averaging option.

1.1 = Required discount factor.

$$AveWeightedEmissions = 1.1 \times \sum_{i=1}^n (Er \times Eo) \div \sum_{i=1}^n Eo \quad (\text{Eq. 3c})$$

Where:

AveWeightedEmissions = Average weighted emission level for PM (or TSM), HCl, or mercury, in units of pounds per megawatt hour, for that calendar month.

Er = Emission rate (as determined during the most recent compliance demonstration) of PM (or TSM), HCl, or mercury from unit, i, in units of pounds per megawatt hour. Determine the emission rate for PM (or TSM), HCl, or mercury by performance testing according to Table 5 to this subpart, or by fuel analysis for HCl or mercury

or TSM according to Table 6 to this subpart. If you are taking credit for energy conservation measures from a unit according to § 63.7533, use the adjusted emission level for that unit, E_{adj} , determined according to § 63.7533 for that unit.

E_o = The electric generating output for that calendar month from unit, i , in units of megawatt hour, as defined in § 63.7575.

n = Number of units participating in the emissions averaging option.

1.1 = Required discount factor.

- (2) If you are not capable of monitoring heat input, you may use Equation 4 of this section as an alternative to using Equation 3a of this section to calculate the average weighted emission rate using the actual steam generation from the boilers participating in the emissions averaging option.

$$AveWeightedEmissions = 1.1 \times \sum_{i=1}^n (Er \times Sa \times Cfi) \div \sum_{i=1}^n (Sa \times Cfi) \quad (\text{Eq. 4})$$

Where:

AveWeightedEmissions = average weighted emission level for PM (or TSM), HCl, or mercury, in units of pounds per million Btu of heat input for that calendar month.

Er = Emission rate (as determined during the most recent compliance demonstration of PM (or TSM), HCl, or mercury from unit, i , in units of pounds per million Btu of heat input. Determine the emission rate for PM (or TSM), HCl, or mercury by performance testing according to Table 5 to this subpart, or by fuel analysis for HCl or mercury or TSM according to Table 6 to this subpart.

Sa = Actual steam generation for that calendar month by boiler, i , in units of pounds.

Cfi = Conversion factor, as calculated during the most recent compliance test, in units of million Btu of heat input per pounds of steam generated for boiler, i .

1.1 = Required discount factor.

- (3) Until 12 monthly weighted average emission rates have been accumulated, calculate and report only the average weighted emission rate determined under paragraph (f)(1) or (2) of this section for each calendar month. After 12 monthly weighted average emission rates have been accumulated, for each subsequent calendar month, use Equation 5 of this section to calculate the 12-month rolling average of the monthly weighted average emission rates for the current calendar month and the previous 11 calendar months.

$$E_{avg} = \sum_{i=1}^n ER_i \div 12 \quad (\text{Eq. 5})$$

Where:

E_{avg} = 12-month rolling average emission rate, (pounds per million Btu heat input)

ERi = Monthly weighted average, for calendar month “i” (pounds per million Btu heat input), as calculated by paragraph (f)(1) or (2) of this section.

- (g) You must develop, and submit upon request to the applicable Administrator for review and approval, an implementation plan for emission averaging according to the following procedures and requirements in paragraphs (g)(1) through (4) of this section.
 - (1) If requested, you must submit the implementation plan no later than 180 days before the date that the facility intends to demonstrate compliance using the emission averaging option.
 - (2) You must include the information contained in paragraphs (g)(2)(i) through (vii) of this section in your implementation plan for all emission sources included in an emissions average:
 - (i) The identification of all existing boilers and process heaters in the averaging group, including for each either the applicable HAP emission level or the control technology installed as of January 31, 2013 and the date on which you are requesting emission averaging to commence;
 - (ii) The process parameter (heat input or steam generated) that will be monitored for each averaging group;
 - (iii) The specific control technology or pollution prevention measure to be used for each emission boiler or process heater in the averaging group and the date of its installation or application. If the pollution prevention measure reduces or eliminates emissions from multiple boilers or process heaters, the owner or operator must identify each boiler or process heater;
 - (iv) The test plan for the measurement of PM (or TSM), HCl, or mercury emissions in accordance with the requirements in § 63.7520;
 - (v) The operating parameters to be monitored for each control system or device consistent with § 63.7500 and Table 4, and a description of how the operating limits will be determined;
 - (vi) If you request to monitor an alternative operating parameter pursuant to § 63.7525, you must also include:
 - (A) A description of the parameter(s) to be monitored and an explanation of the criteria used to select the parameter(s); and
 - (B) A description of the methods and procedures that will be used to demonstrate that the parameter indicates proper operation of the control device; the frequency and content of monitoring, reporting, and recordkeeping requirements; and a demonstration, to the satisfaction of the Administrator, that the proposed monitoring frequency is sufficient to represent control device operating conditions; and
 - (vii) A demonstration that compliance with each of the applicable emission limit(s) will be achieved under representative operating load conditions. Following each compliance demonstration and until the next compliance demonstration, you must comply with the operating limit for operating load conditions specified in Table 4 to this subpart.
 - (3) If submitted upon request, the Administrator shall review and approve or disapprove the plan according to the following criteria:
 - (i) Whether the content of the plan includes all of the information specified in paragraph (g)(2) of this section; and

- (ii) Whether the plan presents sufficient information to determine that compliance will be achieved and maintained.
- (4) The applicable Administrator shall not approve an emission averaging implementation plan containing any of the following provisions:
 - (i) Any averaging between emissions of differing pollutants or between differing sources; or
 - (ii) The inclusion of any emission source other than an existing unit in the same subcategories.
- (h) For a group of two or more existing affected units, each of which vents through a single common stack, you may average PM (or TSM), HCl, or mercury emissions to demonstrate compliance with the limits for that pollutant in Table 2 or 15 to this subpart if you satisfy the requirements in paragraph (i) or (j) of this section.
- (i) For a group of two or more existing units in the same subcategory, each of which vents through a common emissions control system to a common stack, that does not receive emissions from units in other subcategories or categories, you may treat such averaging group as a single existing unit for purposes of this subpart and comply with the requirements of this subpart as if the group were a single unit.
- (j) For all other groups of units subject to the common stack requirements of paragraph (h) of this section, including situations where the exhaust of affected units are each individually controlled and then sent to a common stack, the owner or operator may elect to:
 - (1) Conduct performance tests according to procedures specified in § 63.7520 in the common stack if affected units from other subcategories vent to the common stack. The emission limits that the group must comply with are determined by the use of Equation 6 to this paragraph (j)(1).

Equation 6 to paragraph (j)(1)

$$En = \sum_{i=1}^n (ELi \times Hi) \div \sum_{i=1}^n Hi \quad (\text{Eq. 6})$$

Where:

En = HAP emission limit, pounds per million British thermal units (lb/MMBtu) or parts per million (ppm).

ELi = Appropriate emission limit from Table 2 or 15 to this subpart for unit i , in units of lb/MMBtu or ppm.

Hi = Heat input from unit i , MMBtu.

- (2) Conduct performance tests according to procedures specified in § 63.7520 in the common stack. If affected units and non-affected units vent to the common stack, the non-affected units must be shut down or vented to a different stack during the performance test unless the facility determines to demonstrate compliance with the non-affected units venting to the stack; and
- (3) Meet the applicable operating limit specified in § 63.7540 and Table 8 to this subpart for each emissions control system (except that, if each unit venting to the common stack has an applicable opacity operating limit, then a single continuous opacity monitoring system may be located in the common stack instead of in each duct to the common stack).

- (k) The common stack of a group of two or more existing boilers or process heaters in the same subcategories subject to paragraph (h) of this section may be treated as a separate stack for purposes of paragraph (b) of this section and included in an emissions averaging group subject to paragraph (b) of this section.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7168, Jan. 31, 2013; 80 FR 72809, Nov. 20, 2015; 87 FR 60843, Oct. 6, 2022]

§ 63.7525 What are my monitoring, installation, operation, and maintenance requirements?

- (a) If your boiler or process heater is subject to a CO emission limit in Table 1 or 2 or Tables 11 through 15 to this subpart, you must install, operate, and maintain an oxygen analyzer system, as defined in § 63.7575, or install, certify, operate and maintain continuous emission monitoring systems for CO and oxygen (O₂) (or carbon dioxide (CO₂)) according to the procedures in paragraphs (a)(1) through (6) of this section.
 - (1) Install the CO CEMS including an O₂ (or CO₂) analyzer by the compliance date specified in § 63.7495. The CO and O₂ (or CO₂) levels shall be monitored at the same location at the outlet of the boiler or process heater. An owner or operator may determine compliance with the CO emissions limit using a CO₂ analyzer as the diluent monitor. If a CO₂ analyzer is used as the diluent monitor, EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, for the fuel type(s) being burned in the unit and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to calculate the emissions corrected to 3 percent O₂ using the measured CO₂ percentage, and must also take into account that the 3 percent oxygen correction is to be done on a dry basis. The equations used to calculate the emissions, must also account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. The methodology used to calculate the CO emissions and the methodology used to account for any CO₂ being added to, or removed from the emissions gas stream shall be detailed and approved in the site-specific monitoring plan developed according to § 63.7505(d).
 - (2) To demonstrate compliance with the applicable alternative CO CEMS emission standard listed in Table 1 or 2 or Tables 11 through 15 to this subpart, you must install, certify, operate, and maintain a CO CEMS and an oxygen analyzer according to the applicable procedures under Performance Specification 4, 4A, or 4B at 40 CFR part 60, appendix B; part 75 of this chapter (if an CO₂ analyzer is used); the site-specific monitoring plan developed according to § 63.7505(d); and the requirements in § 63.7540(a)(8) and this paragraph (a). Any boiler or process heater that has a CO CEMS that is compliant with Performance Specification 4, 4A, or 4B at 40 CFR part 60, appendix B, a site-specific monitoring plan developed according to § 63.7505(d), and the requirements in § 63.7540(a)(8) and this paragraph (a) must use the CO CEMS to comply with the applicable alternative CO CEMS emission standard listed in Table 1 or 2 or Tables 11 through 15 to this subpart.
 - (i) You must conduct a performance evaluation of each CO CEMS according to the requirements in § 63.8(e) and according to Performance Specification 4, 4A, or 4B at 40 CFR part 60, appendix B.
 - (ii) During each relative accuracy test run of the CO CEMS, you must collect emission data for CO concurrently using both the CO CEMS and Method 10, 10A, or 10B at 40 CFR part 60, appendix A-4. The relative accuracy testing must be conducted at representative operating conditions.

- (iii) You must follow the quality assurance procedures (e.g., quarterly accuracy determinations and daily calibration drift tests) of Procedure 1 of appendix F to part 60. The measurement span value of the CO CEMS must be two times the applicable CO emission limit, expressed as a concentration.
 - (iv) Any CO CEMS that does not comply with this paragraph (a) cannot be used to meet any requirement in this subpart to demonstrate compliance with a CO emission limit listed in Table 1 or 2 or Tables 11 through 15 to this subpart.
 - (v) For a new unit, complete the initial performance evaluation no later than July 30, 2013, or 180 days after the date of initial startup, whichever is later. For an existing unit, complete the initial performance evaluation no later than July 29, 2016.
 - (vi) When CO₂ is used to correct CO emissions and CO₂ is measured on a wet basis, if needed, correct for moisture as follows: Install, operate, maintain, and quality assure a continuous moisture monitoring system for measuring and recording the moisture content of the flue gases, in order to correct the measured hourly volumetric flow rates for moisture when calculating CO concentrations. The following continuous moisture monitoring systems are acceptable: a continuous moisture sensor; an oxygen analyzer (or analyzers) capable of measuring O₂ both on a wet basis and on a dry basis; or a stack temperature sensor and a moisture look-up table, *i.e.*, a psychrometric chart (for saturated gas streams following wet scrubbers or other demonstrably saturated gas streams, only). The moisture monitoring system shall include as a component the automated data acquisition and handling system (DAHS) for recording and reporting both the raw data (e.g., hourly average wet-and dry-basis O₂ values) and the hourly average values of the stack gas moisture content derived from those data. When a moisture look-up table is used, the moisture monitoring system shall be represented as a single component, the certified DAHS, in the monitoring plan for the unit or common stack.
- (3) Complete a minimum of one cycle of CO and oxygen (or CO₂) CEMS operation (sampling, analyzing, and data recording) for each successive 15-minute period. Collect CO and oxygen (or CO₂) data concurrently. Collect at least four CO and oxygen (or CO₂) CEMS data values representing the four 15-minute periods in an hour, or at least two 15-minute data values during an hour when CEMS calibration, quality assurance, or maintenance activities are being performed.
 - (4) Reduce the CO CEMS data as specified in § 63.8(g)(2).
 - (5) Calculate one-hour arithmetic averages, corrected to 3 percent oxygen (or corrected to an CO₂ percentage determined to be equivalent to 3 percent oxygen) from each hour of CO CEMS data in parts per million CO concentration. The one-hour arithmetic averages required shall be used to calculate the 30-day or 10-day rolling average emissions. Use Equation 19-19 in section 12.4.1 of Method 19 of 40 CFR part 60, appendix A-7 for calculating the average CO concentration from the hourly values.
 - (6) For purposes of collecting CO data, operate the CO CEMS as specified in § 63.7535(b). You must use all the data collected during all periods in calculating data averages and assessing compliance, except that you must exclude certain data as specified in § 63.7535(c). Periods when CO data are unavailable may constitute monitoring deviations as specified in § 63.7535(d).
 - (7) Operate an oxygen trim system with the oxygen level set no lower than the lowest hourly average oxygen concentration measured during the most recent CO performance test as the operating limit for oxygen according to Table 7 to this subpart.

- (b) If your boiler or process heater is in the unit designed to burn coal/solid fossil fuel subcategory or the unit designed to burn heavy liquid subcategory and has an average annual heat input rate greater than 250 MMBtu per hour from solid fossil fuel and/or heavy liquid, and you demonstrate compliance with the PM limit instead of the alternative TSM limit, you must install, maintain, and operate a PM CPMS monitoring emissions discharged to the atmosphere and record the output of the system as specified in paragraphs (b)(1) through (4) of this section. As an alternative to use of a PM CPMS to demonstrate compliance with the PM limit, you may choose to use a PM CEMS. If you choose to use a PM CEMS to demonstrate compliance with the PM limit instead of the alternative TSM limit, you must install, certify, maintain, and operate a PM CEMS monitoring emissions discharged to the atmosphere and record the output of the system as specified in paragraph (b)(5) through (8) of this section. For other boilers or process heaters, you may elect to use a PM CPMS or PM CEMS operated in accordance with this section in lieu of using other CMS for monitoring PM compliance (e.g., bag leak detectors, ESP secondary power, and PM scrubber pressure). Owners of boilers and process heaters who elect to comply with the alternative TSM limit are not required to install a PM CPMS.
- (1) Install, operate, and maintain your PM CPMS according to the procedures in your approved site-specific monitoring plan developed in accordance with § 63.7505(d), the requirements in § 63.7540(a)(9), and paragraphs (b)(1)(i) through (iii) of this section.
- (i) The operating principle of the PM CPMS must be based on in-stack or extractive light scatter, light scintillation, beta attenuation, or mass accumulation detection of PM in the exhaust gas or representative exhaust gas sample. The reportable measurement output from the PM CPMS must be expressed as milliamps.
- (ii) The PM CPMS must have a cycle time (i.e., period required to complete sampling, measurement, and reporting for each measurement) no longer than 60 minutes.
- (iii) The PM CPMS must have a documented detection limit of 0.5 milligram per actual cubic meter, or less.
- (2) For a new unit, complete the initial performance evaluation no later than July 30, 2013, or 180 days after the date of initial startup, whichever is later. For an existing unit, complete the initial performance evaluation no later than July 29, 2016.
- (3) Collect PM CPMS hourly average output data for all boiler or process heater operating hours except as indicated in § 63.7535(a) through (d). Express the PM CPMS output as milliamps.
- (4) Calculate the arithmetic 30-day rolling average of all of the hourly average PM CPMS output data collected during all boiler or process heater operating hours (milliamps).
- (5) Install, certify, operate, and maintain your PM CEMS according to the procedures in your approved site-specific monitoring plan developed in accordance with § 63.7505(d), the requirements in § 63.7540(a)(9), and paragraphs (b)(5)(i) through (iv) of this section.
- (i) You shall conduct a performance evaluation of the PM CEMS according to the applicable requirements of § 60.8(e), and Performance Specification 11 at 40 CFR part 60, appendix B of this chapter.

- (ii) During each PM correlation testing run of the CEMS required by Performance Specification 11 at 40 CFR part 60, appendix B of this chapter, you shall collect PM and oxygen (or carbon dioxide) data concurrently (or within a 30-to 60-minute period) by both the CEMS and conducting performance tests using Method 5 at 40 CFR part 60, appendix A-3 or Method 17 at 40 CFR part 60, appendix A-6 of this chapter.
 - (iii) You shall perform quarterly accuracy determinations and daily calibration drift tests in accordance with Procedure 2 at 40 CFR part 60, appendix F of this chapter. You must perform Relative Response Audits annually and perform Response Correlation Audits every 3 years.
 - (iv) Within 60 days after the date of completing each CEMS relative accuracy test audit or performance test conducted to demonstrate compliance with this subpart, you must submit the relative accuracy test audit data and performance test data to the EPA by successfully submitting the data electronically into the EPA's Central Data Exchange by using the Electronic Reporting Tool (see <http://www.epa.gov/ttn/chief/ert/erttool.html/>).
- (6) For a new unit, complete the initial performance evaluation no later than July 30, 2013, or 180 days after the date of initial startup, whichever is later. For an existing unit, complete the initial performance evaluation no later than July 29, 2016.
- (7) Collect PM CEMS hourly average output data for all boiler or process heater operating hours except as indicated in § 63.7535(a) through (d).
- (8) Calculate the arithmetic 30-day rolling average of all of the hourly average PM CEMS output data collected during all boiler or process heater operating hours.
- (c) If you have an applicable opacity operating limit in this rule, and are not otherwise required or elect to install and operate a PM CPMS, PM CEMS, or a bag leak detection system, you must install, operate, certify and maintain each COMS according to the procedures in paragraphs (c)(1) through (7) of this section by the compliance date specified in § 63.7495.
- (1) Each COMS must be installed, operated, and maintained according to Performance Specification 1 at appendix B to part 60 of this chapter.
 - (2) You must conduct a performance evaluation of each COMS according to the requirements in § 63.8(e) and according to Performance Specification 1 at appendix B to part 60 of this chapter.
 - (3) As specified in § 63.8(c)(4)(i), each COMS must complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive 6-minute period.
 - (4) The COMS data must be reduced as specified in § 63.8(g)(2).
 - (5) You must include in your site-specific monitoring plan procedures and acceptance criteria for operating and maintaining each COMS according to the requirements in § 63.8(d). At a minimum, the monitoring plan must include a daily calibration drift assessment, a quarterly performance audit, and an annual zero alignment audit of each COMS.
 - (6) You must operate and maintain each COMS according to the requirements in the monitoring plan and the requirements of § 63.8(e). You must identify periods the COMS is out of control including any periods that the COMS fails to pass a daily calibration drift assessment, a quarterly performance

audit, or an annual zero alignment audit. Any 6-minute period for which the monitoring system is out of control and data are not available for a required calculation constitutes a deviation from the monitoring requirements.

- (7) You must determine and record all the 6-minute averages (and daily block averages as applicable) collected for periods during which the COMS is not out of control.
- (d) If you have an operating limit that requires the use of a CMS other than a PM CPMS or COMS, you must install, operate, and maintain each CMS according to the procedures in paragraphs (d)(1) through (5) of this section by the compliance date specified in § 63.7495.
 - (1) The CPMS must complete a minimum of one cycle of operation every 15-minutes. You must have a minimum of four successive cycles of operation, one representing each of the four 15-minute periods in an hour, to have a valid hour of data.
 - (2) You must operate the monitoring system as specified in § 63.7535(b), and comply with the data calculation requirements specified in § 63.7535(c).
 - (3) Any 15-minute period for which the monitoring system is out-of-control and data are not available for a required calculation constitutes a deviation from the monitoring requirements. Other situations that constitute a monitoring deviation are specified in § 63.7535(d).
 - (4) You must determine the 30-day rolling average of all recorded readings, except as provided in § 63.7535(c).
 - (5) You must record the results of each inspection, calibration, and validation check.
- (e) If you have an operating limit that requires the use of a flow monitoring system, you must meet the requirements in paragraphs (d) and (e)(1) through (4) of this section.
 - (1) You must install the flow sensor and other necessary equipment in a position that provides a representative flow.
 - (2) You must use a flow sensor with a measurement sensitivity of no greater than 2 percent of the design flow rate.
 - (3) You must minimize, consistent with good engineering practices, the effects of swirling flow or abnormal velocity distributions due to upstream and downstream disturbances.
 - (4) You must conduct a flow monitoring system performance evaluation in accordance with your monitoring plan at the time of each performance test but no less frequently than annually.
- (f) If you have an operating limit that requires the use of a pressure monitoring system, you must meet the requirements in paragraphs (d) and (f)(1) through (6) of this section.
 - (1) Install the pressure sensor(s) in a position that provides a representative measurement of the pressure (e.g., PM scrubber pressure drop).
 - (2) Minimize or eliminate pulsating pressure, vibration, and internal and external corrosion consistent with good engineering practices.
 - (3) Use a pressure sensor with a minimum tolerance of 1.27 centimeters of water or a minimum tolerance of 1 percent of the pressure monitoring system operating range, whichever is less.
 - (4) Perform checks at least once each process operating day to ensure pressure measurements are not obstructed (e.g., check for pressure tap pluggage daily).

- (5) Conduct a performance evaluation of the pressure monitoring system in accordance with your monitoring plan at the time of each performance test but no less frequently than annually.
- (6) If at any time the measured pressure exceeds the manufacturer's specified maximum operating pressure range, conduct a performance evaluation of the pressure monitoring system in accordance with your monitoring plan and confirm that the pressure monitoring system continues to meet the performance requirements in your monitoring plan. Alternatively, install and verify the operation of a new pressure sensor.
- (g) If you have an operating limit that requires a pH monitoring system, you must meet the requirements in paragraphs (d) and (g)(1) through (4) of this section.
 - (1) Install the pH sensor in a position that provides a representative measurement of scrubber effluent pH.
 - (2) Ensure the sample is properly mixed and representative of the fluid to be measured.
 - (3) Calibrate the pH monitoring system in accordance with your monitoring plan and according to the manufacturer's instructions. Clean the pH probe at least once each process operating day. Maintain on-site documentation that your calibration frequency is sufficient to maintain the specified accuracy of your device.
 - (4) Conduct a performance evaluation (including a two-point calibration with one of the two buffer solutions having a pH within 1 of the pH of the operating limit) of the pH monitoring system in accordance with your monitoring plan at the time of each performance test but no less frequently than annually.
- (h) If you have an operating limit that requires a secondary electric power monitoring system for an electrostatic precipitator (ESP) operated with a wet scrubber, you must meet the requirements in paragraphs (h)(1) and (2) of this section.
 - (1) Install sensors to measure (secondary) voltage and current to the precipitator collection plates.
 - (2) Conduct a performance evaluation of the electric power monitoring system in accordance with your monitoring plan at the time of each performance test but no less frequently than annually.
- (i) If you have an operating limit that requires the use of a monitoring system to measure sorbent injection rate (e.g., weigh belt, weigh hopper, or hopper flow measurement device), you must meet the requirements in paragraphs (d) and (i)(1) through (2) of this section.
 - (1) Install the system in a position(s) that provides a representative measurement of the total sorbent injection rate.
 - (2) Conduct a performance evaluation of the sorbent injection rate monitoring system in accordance with your monitoring plan at the time of each performance test but no less frequently than annually.
- (j) If you are not required to use a PM CPMS and elect to use a fabric filter bag leak detection system to comply with the requirements of this subpart, you must install, calibrate, maintain, and continuously operate the bag leak detection system as specified in paragraphs (j)(1) through (6) of this section.
 - (1) You must install a bag leak detection sensor(s) in a position(s) that will be representative of the relative or absolute PM loadings for each exhaust stack, roof vent, or compartment (e.g., for a positive pressure fabric filter) of the fabric filter.

- (2) Conduct a performance evaluation of the bag leak detection system in accordance with your monitoring plan and consistent with the guidance provided in EPA-454/R-98-015 (incorporated by reference, see § 63.14).
 - (3) Use a bag leak detection system certified by the manufacturer to be capable of detecting PM emissions at concentrations of 10 milligrams per actual cubic meter or less.
 - (4) Use a bag leak detection system equipped with a device to record continuously the output signal from the sensor.
 - (5) Use a bag leak detection system equipped with a system that will alert plant operating personnel when an increase in relative PM emissions over a preset level is detected. The alert must easily recognizable (e.g., heard or seen) by plant operating personnel.
 - (6) Where multiple bag leak detectors are required, the system's instrumentation and alert may be shared among detectors.
- (k) For each unit that meets the definition of limited-use boiler or process heater, you must keep fuel use records for the days the boiler or process heater was operating.
- (l) For each unit for which you decide to demonstrate compliance with the mercury or HCl emissions limits in Table 1 or 2 or Tables 11 through 15 to this subpart by use of a CEMS for mercury or HCl, you must install, certify, maintain, and operate a CEMS measuring emissions discharged to the atmosphere and record the output of the system as specified in paragraphs (l)(1) through (8) of this section. For HCl, this option for an affected unit takes effect on the date of approval of a site-specific monitoring plan.
- (1) Notify the Administrator one month before starting use of the CEMS, and notify the Administrator one month before stopping use of the CEMS.
 - (2) Each CEMS shall be installed, certified, operated, and maintained according to the requirements in § 63.7540(a)(14) for a mercury CEMS and § 63.7540(a)(15) for a HCl CEMS.
 - (3) For a new unit, you must complete the initial performance evaluation of the CEMS by the latest of the dates specified in paragraph (l)(3)(i) through (iii) of this section.
 - (i) No later than July 30, 2013.
 - (ii) No later 180 days after the date of initial startup.
 - (iii) No later 180 days after notifying the Administrator before starting to use the CEMS in place of performance testing or fuel analysis to demonstrate compliance.
 - (4) For an existing unit, you must complete the initial performance evaluation by the latter of the two dates specified in paragraph (l)(4)(i) and (ii) of this section.
 - (i) No later than July 29, 2016.
 - (ii) No later 180 days after notifying the Administrator before starting to use the CEMS in place of performance testing or fuel analysis to demonstrate compliance.
 - (5) Compliance with the applicable emissions limit shall be determined based on the 30-day rolling average of the hourly arithmetic average emissions rates using the continuous monitoring system outlet data. The 30-day rolling arithmetic average emission rate (lb/MMBtu) shall be calculated using the equations in EPA Reference Method 19 at 40 CFR part 60, appendix A-7, but substituting the mercury or HCl concentration for the pollutant concentrations normally used in Method 19.

- (6) Collect CEMS hourly averages for all operating hours on a 30-day rolling average basis. Collect at least four CMS data values representing the four 15-minute periods in an hour, or at least two 15-minute data values during an hour when CMS calibration, quality assurance, or maintenance activities are being performed.
- (7) The one-hour arithmetic averages required shall be expressed in lb/MMBtu and shall be used to calculate the boiler 30-day and 10-day rolling average emissions.
- (8) You are allowed to substitute the use of the PM, mercury or HCl CEMS for the applicable fuel analysis, annual performance test, and operating limits specified in Table 4 to this subpart to demonstrate compliance with the PM, mercury or HCl emissions limit, and if you are using an acid gas wet scrubber or dry sorbent injection control technology to comply with the HCl emission limit, you are allowed to substitute the use of a sulfur dioxide (SO₂) CEMS for the applicable fuel analysis, annual performance test, and operating limits specified in Table 4 to this subpart to demonstrate compliance with HCl emissions limit.
- (m) If your unit is subject to a HCl emission limit in Table 1 or 2 or Tables 11 through 15 to this subpart and you have an acid gas wet scrubber or dry sorbent injection control technology and you elect to use an SO₂ CEMS to demonstrate continuous compliance with the HCl emission limit, you must install the monitor at the outlet of the boiler or process heater, downstream of all emission control devices, and you must install, certify, operate, and maintain the CEMS according to either part 60 or part 75 of this chapter.
 - (1) The SO₂ CEMS must be installed by the compliance date specified in § 63.7495.
 - (2) For on-going quality assurance (QA), the SO₂ CEMS must meet either the applicable daily and quarterly requirements in Procedure 1 of appendix F of part 60 or the applicable daily, quarterly, and semiannual or annual requirements in sections 2.1 through 2.3 of appendix B to part 75 of this chapter, with the following addition: You must perform the linearity checks required in section 2.2 of appendix B to part 75 of this chapter if the SO₂ CEMS has a span value of 30 ppm or less.
 - (3) For a new unit, the initial performance evaluation shall be completed no later than July 30, 2013, or 180 days after the date of initial startup, whichever is later. For an existing unit, the initial performance evaluation shall be completed no later than July 29, 2016.
 - (4) For purposes of collecting SO₂ data, you must operate the SO₂ CEMS as specified in § 63.7535(b). You must use all the data collected during all periods in calculating data averages and assessing compliance, except that you must exclude certain data as specified in § 63.7535(c). Periods when SO₂ data are unavailable may constitute monitoring deviations as specified in § 63.7535(d).
 - (5) Collect CEMS hourly averages for all operating hours on a 30-day rolling average basis.
 - (6) Use only unadjusted, quality-assured SO₂ concentration values in the emissions calculations; do not apply bias adjustment factors to the part 75 SO₂ data and do not use part 75 substitute data values.

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§ 63.7530 How do I demonstrate initial compliance with the emission limitations, fuel specifications and work practice standards?

- (a) You must demonstrate initial compliance with each emission limit that applies to you by conducting initial performance tests and fuel analyses and establishing operating limits, as applicable, according to § 63.7520, paragraphs (b) and (c) of this section, and Tables 5 and 7 to this subpart. The requirement to

conduct a fuel analysis is not applicable for units that burn a single type of fuel, as specified by § 63.7510(a)(2). If applicable, you must also install, operate, and maintain all applicable CMS (including CEMS, COMS, and CPMS) according to § 63.7525.

(b) If you demonstrate compliance through performance stack testing, you must establish each site-specific operating limit in Table 4 to this subpart that applies to you according to the requirements in § 63.7520, Table 7 to this subpart, and paragraph (b)(4) of this section, as applicable. You must also conduct fuel analyses according to § 63.7521 and establish maximum fuel pollutant input levels according to paragraphs (b)(1) through (3) of this section, as applicable, and as specified in § 63.7510(a)(2). (Note that § 63.7510(a)(2) exempts certain fuels from the fuel analysis requirements.) However, if you switch fuel(s) and cannot show that the new fuel(s) does (do) not increase the chlorine, mercury, or TSM input into the unit through the results of fuel analysis, then you must repeat the performance test to demonstrate compliance while burning the new fuel(s).

(1) You must establish the maximum chlorine fuel input ($Clinput$) during the initial fuel analysis according to the procedures in paragraphs (b)(1)(i) through (iii) of this section.

(i) You must determine the fuel type or fuel mixture that you could burn in your boiler or process heater that has the highest content of chlorine.

(ii) During the fuel analysis for hydrogen chloride, you must determine the fraction of the total heat input for each fuel type burned (Q_i) based on the fuel mixture that has the highest content of chlorine, and the average chlorine concentration of each fuel type burned (C_i).

(iii) You must establish a maximum chlorine input level using Equation 7 of this section.

$$Clinput = \sum_{i=1}^n (C_i \times Q_i) \quad (\text{Eq. 7})$$

Where:

$Clinput$ = Maximum amount of chlorine entering the boiler or process heater through fuels burned in units of pounds per million Btu.

C_i = Arithmetic average concentration of chlorine in fuel type, i , analyzed according to § 63.7521, in units of pounds per million Btu.

Q_i = Fraction of total heat input from fuel type, i , based on the fuel mixture that has the highest content of chlorine during the initial compliance test. If you do not burn multiple fuel types during the performance testing, it is not necessary to determine the value of this term. Insert a value of "1" for Q_i . For continuous compliance demonstration, the actual fraction of the fuel burned during the month should be used.

n = Number of different fuel types burned in your boiler or process heater for the mixture that has the highest content of chlorine.

(2) You must establish the maximum mercury fuel input level ($Mercuryinput$) during the initial fuel analysis using the procedures in paragraphs (b)(2)(i) through (iii) of this section.

(i) You must determine the fuel type or fuel mixture that you could burn in your boiler or process heater that has the highest content of mercury.

- (ii) During the compliance demonstration for mercury, you must determine the fraction of total heat input for each fuel burned (Q_i) based on the fuel mixture that has the highest content of mercury, and the average mercury concentration of each fuel type burned (HG_i).
- (iii) You must establish a maximum mercury input level using Equation 8 of this section.

$$\text{Mercuryinput} = \sum_{i=1}^n (HG_i \times Q_i) \quad (\text{Eq. 8})$$

Where:

Mercuryinput = Maximum amount of mercury entering the boiler or process heater through fuels burned in units of pounds per million Btu.

HG_i = Arithmetic average concentration of mercury in fuel type, i , analyzed according to § 63.7521, in units of pounds per million Btu.

Q_i = Fraction of total heat input from fuel type, i , based on the fuel mixture that has the highest mercury content during the initial compliance test. If you do not burn multiple fuel types during the performance test, it is not necessary to determine the value of this term. Insert a value of "1" for Q_i . For continuous compliance demonstration, the actual fraction of the fuel burned during the month should be used.

n = Number of different fuel types burned in your boiler or process heater for the mixture that has the highest content of mercury.

- (3) If you opt to comply with the alternative TSM limit, you must establish the maximum TSM fuel input (TSMinput) for solid or liquid fuels during the initial fuel analysis according to the procedures in paragraphs (b)(3)(i) through (iii) of this section.
 - (i) You must determine the fuel type or fuel mixture that you could burn in your boiler or process heater that has the highest content of TSM.
 - (ii) During the fuel analysis for TSM, you must determine the fraction of the total heat input for each fuel type burned (Q_i) based on the fuel mixture that has the highest content of TSM, and the average TSM concentration of each fuel type burned (TSM_i).
 - (iii) You must establish a maximum TSM input level using Equation 9 of this section.

$$\text{TSMinput} = \sum_{i=1}^n (TSM_i \times Q_i) \quad (\text{Eq. 9})$$

Where:

TSMinput = Maximum amount of TSM entering the boiler or process heater through fuels burned in units of pounds per million Btu.

TSM_i = Arithmetic average concentration of TSM in fuel type, i , analyzed according to § 63.7521, in units of pounds per million Btu.

Q_i = Fraction of total heat input from fuel type, i , based on the fuel mixture that has the highest content of TSM during the initial compliance test. If you do not burn multiple fuel types during the performance testing, it is not necessary to determine the value of this term. Insert a value of "1" for Q_i . For continuous compliance demonstration, the actual fraction of the fuel burned during the month should be used.

n = Number of different fuel types burned in your boiler or process heater for the mixture that has the highest content of TSM.

- (4) You must establish parameter operating limits according to paragraphs (b)(4)(i) through (ix) of this section. As indicated in Table 4 to this subpart, you are not required to establish and comply with the operating parameter limits when you are using a CEMS to monitor and demonstrate compliance with the applicable emission limit for that control device parameter.
 - (i) For a wet acid gas scrubber, you must establish the minimum scrubber effluent pH and liquid flow rate as defined in § 63.7575, as your operating limits during the performance test during which you demonstrate compliance with your applicable limit. If you use a wet scrubber and you conduct separate performance tests for HCl and mercury emissions, you must establish one set of minimum scrubber effluent pH, liquid flow rate, and pressure drop operating limits. The minimum scrubber effluent pH operating limit must be established during the HCl performance test. If you conduct multiple performance tests, you must set the minimum liquid flow rate operating limit at the higher of the minimum values established during the performance tests.
 - (ii) For any particulate control device (e.g., ESP, particulate wet scrubber, fabric filter) for which you use a PM CPMS, you must establish your PM CPMS operating limit and determine compliance with it according to paragraphs (b)(4)(ii)(A) through (F) of this section.
 - (A) Determine your operating limit as the average PM CPMS output value recorded during the most recent performance test run demonstrating compliance with the filterable PM emission limit or at the PM CPMS output value corresponding to 75 percent of the emission limit if your PM performance test demonstrates compliance below 75 percent of the emission limit. You must verify an existing or establish a new operating limit after each repeated performance test. You must repeat the performance test annually and reassess and adjust the site-specific operating limit in accordance with the results of the performance test.
 - (1) Your PM CPMS must provide a 4-20 milliamp output and the establishment of its relationship to manual reference method measurements must be determined in units of milliamps.
 - (2) Your PM CPMS operating range must be capable of reading PM concentrations from zero to a level equivalent to at least two times your allowable emission limit. If your PM CPMS is an auto-ranging instrument capable of multiple scales, the primary range of the instrument must be capable of reading PM concentration from zero to a level equivalent to two times your allowable emission limit.

- (3) During the initial performance test or any such subsequent performance test that demonstrates compliance with the PM limit, record and average all milliamp output values from the PM CPMS for the periods corresponding to the compliance test runs (e.g., average all your PM CPMS output values for three corresponding 2-hour Method 5I test runs).
- (B) If the average of your three PM performance test runs are below 75 percent of your PM emission limit, you must calculate an operating limit by establishing a relationship of PM CPMS signal to PM concentration using the PM CPMS instrument zero, the average PM CPMS values corresponding to the three compliance test runs, and the average PM concentration from the Method 5 or performance test with the procedures in paragraphs (b)(4)(ii)(B)(1) through (4) of this section.
 - (1) Determine your instrument zero output with one of the following procedures:
 - (i) Zero point data for *in-situ* instruments should be obtained by removing the instrument from the stack and monitoring ambient air on a test bench.
 - (ii) Zero point data for *extractive* instruments should be obtained by removing the extractive probe from the stack and drawing in clean ambient air.
 - (iii) The zero point may also be established by performing manual reference method measurements when the flue gas is free of PM emissions or contains very low PM concentrations (e.g., when your process is not operating, but the fans are operating or your source is combusting only natural gas) and plotting these with the compliance data to find the zero intercept.
 - (iv) If none of the steps in paragraphs (b)(4)(ii)(B)(1)(i) through (iii) of this section are possible, you must use a zero output value provided by the manufacturer.
 - (2) Determine your PM CPMS instrument average in milliamps, and the average of your corresponding three PM compliance test runs, using equation 10.

$$\bar{X} = \frac{1}{n} \sum_{i=1}^n X_i, \bar{Y} = \frac{1}{n} \sum_{i=1}^n Y_i \quad (\text{Eq. 10})$$

Where:

X_1 = the PM CPMS data points for the three runs constituting the performance test,

Y_1 = the PM concentration value for the three runs constituting the performance test, and

n = the number of data points.

- (3) With your instrument zero expressed in milliamps, your three run average PM CPMS milliamp value, and your three run average PM concentration from your three compliance tests, determine a relationship of lb/MMBtu per milliamp with equation 11.

$$R = \frac{Y_1}{(X_1 - z)} \quad (\text{Eq. 11})$$

Where:

R = the relative lb/MMBtu per milliamp for your PM CPMS,

Y_1 = the three run average lb/MMBtu PM concentration,

X_1 = the three run average milliamp output from you PM CPMS, and

z = the milliamp equivalent of your instrument zero determined from (B)(i).

- (4) Determine your source specific 30-day rolling average operating limit using the lb/MMBtu per milliamp value from Equation 11 in equation 12, below. This sets your operating limit at the PM CPMS output value corresponding to 75 percent of your emission limit.

$$O_1 = z + \frac{0.75(L)}{R} \quad (\text{Eq. 12})$$

Where:

O_1 = the operating limit for your PM CPMS on a 30-day rolling average, in milliamps.

L = your source emission limit expressed in lb/MMBtu,

z = your instrument zero in milliamps, determined from (B)(i), and

R = the relative lb/MMBtu per milliamp for your PM CPMS, from Equation 11.

- (C) If the average of your three PM compliance test runs is at or above 75 percent of your PM emission limit you must determine your 30-day rolling average operating limit by averaging the PM CPMS milliamp output corresponding to your three PM performance test runs that demonstrate compliance with the emission limit using equation 13 and you must submit all compliance test and PM CPMS data according to the reporting requirements in paragraph (b)(4)(ii)(F) of this section.

$$O_n = \frac{1}{n} \sum_{i=1}^n X_i \quad (\text{Eq. 13})$$

Where:

X_i = the PM CPMS data points for all runs i,

n = the number of data points, and

O_h = your site specific operating limit, in milliamps.

- (D) To determine continuous compliance, you must record the PM CPMS output data for all periods when the process is operating and the PM CPMS is not out-of-control. You must demonstrate continuous compliance by using all quality-assured hourly average data collected by the PM CPMS for all operating hours to calculate the arithmetic average operating parameter in units of the operating limit (milliamps) on a 30-day rolling average basis, updated at the end of each new operating hour. Use Equation 14 to determine the 30-day rolling average.

$$30\text{-day} = \frac{\sum_{i=1}^n Hpvi}{n} \quad (\text{Eq. 14})$$

Where:

30-day = 30-day average.

$Hpvi$ = is the hourly parameter value for hour i

n = is the number of valid hourly parameter values collected over the previous 30 operating days.

- (E) Use EPA Method 5 of appendix A to part 60 of this chapter to determine PM emissions. For each performance test, conduct three separate runs under the conditions that exist when the affected source is operating at the highest load or capacity level reasonably expected to occur. Conduct each test run to collect a minimum sample volume specified in Table 1 or 2 or Tables 11 through 15 to this subpart, as applicable, for determining compliance with a new source limit or an existing source limit. Calculate the average of the results from three runs to determine compliance. You need not determine the PM collected in the impingers ("back half") of the Method 5 particulate sampling train to demonstrate compliance with the PM standards in this subpart. This shall not preclude the permitting authority from requiring a determination of the "back half" for other purposes.
- (F) For PM performance test reports used to set a PM CPMS operating limit, the electronic submission of the test report must also include the make and model of the PM CPMS instrument, serial number of the instrument, analytical principle of the instrument (e.g. beta attenuation), span of the instruments primary analytical range, milliamp value equivalent to the instrument zero output, technique by which this zero value was determined, and the average milliamp signals corresponding to each PM compliance test run.
- (iii) For a particulate wet scrubber, you must establish the minimum pressure drop and liquid flow rate as defined in § 63.7575, as your operating limits during the three-run performance test during which you demonstrate compliance with your applicable limit. If you use a wet scrubber and you conduct separate performance tests for PM and TSM emissions, you must establish

one set of minimum scrubber liquid flow rate and pressure drop operating limits. If you conduct multiple performance tests, you must set the minimum liquid flow rate and pressure drop operating limits at the higher of the minimum values established during the performance tests.

- (iv) For an electrostatic precipitator (ESP) operated with a wet scrubber, you must establish the minimum total secondary electric power input, as defined in § 63.7575, as your operating limit during the three-run performance test during which you demonstrate compliance with your applicable limit. (These operating limits do not apply to ESP that are operated as dry controls without a wet scrubber.)
- (v) For a dry scrubber, you must establish the minimum sorbent injection rate for each sorbent, as defined in § 63.7575, as your operating limit during the three-run performance test during which you demonstrate compliance with your applicable limit.
- (vi) For activated carbon injection, you must establish the minimum activated carbon injection rate, as defined in § 63.7575, as your operating limit during the three-run performance test during which you demonstrate compliance with your applicable limit.
- (vii) The operating limit for boilers or process heaters with fabric filters that demonstrate continuous compliance through bag leak detection systems is that a bag leak detection system be installed according to the requirements in § 63.7525, and that each fabric filter must be operated such that the bag leak detection system alert is not activated more than 5 percent of the operating time during a 6-month period.
- (viii) For a minimum oxygen level, if you conduct multiple performance tests, you must set the minimum oxygen level at the lower of the minimum values established during the performance tests.
- (ix) The operating limit for boilers or process heaters that demonstrate continuous compliance with the HCl emission limit using a SO₂ CEMS is to install and operate the SO₂ according to the requirements in § 63.7525(m) establish a maximum SO₂ emission rate equal to the highest hourly average SO₂ measurement during the most recent three-run performance test for HCl.

(c) If you elect to demonstrate compliance with an applicable emission limit through fuel analysis, you must conduct fuel analyses according to § 63.7521 and follow the procedures in paragraphs (c)(1) through (5) of this section.

- (1) If you burn more than one fuel type, you must determine the fuel mixture you could burn in your boiler or process heater that would result in the maximum emission rates of the pollutants that you elect to demonstrate compliance through fuel analysis.
- (2) You must determine the 90th percentile confidence level fuel pollutant concentration of the composite samples analyzed for each fuel type using the one-sided t-statistic test described in Equation 15 of this section.

$$P90 = mean + (SD \times t) \quad (\text{Eq. 15})$$

Where:

P90 = 90th percentile confidence level pollutant concentration, in pounds per million Btu.

Mean = Arithmetic average of the fuel pollutant concentration in the fuel samples analyzed according to § 63.7521, in units of pounds per million Btu.

SD = Standard deviation of the mean of pollutant concentration in the fuel samples analyzed according to § 63.7521, in units of pounds per million Btu. SD is calculated as the sample standard deviation divided by the square root of the number of samples.

t = t distribution critical value for 90th percentile ($t_{0.1}$) probability for the appropriate degrees of freedom (number of samples minus one) as obtained from a t-Distribution Critical Value Table.

- (3) To demonstrate compliance with the applicable emission limit for HCl, the HCl emission rate that you calculate for your boiler or process heater using Equation 16 of this section must not exceed the applicable emission limit for HCl.

$$HCl = \sum_{i=1}^n (Ci90 \times Qi \times 1.028) \quad (\text{Eq. 16})$$

Where:

HCl = HCl emission rate from the boiler or process heater in units of pounds per million Btu.

Ci90 = 90th percentile confidence level concentration of chlorine in fuel type, i, in units of pounds per million Btu as calculated according to Equation 15 of this section.

Qi = Fraction of total heat input from fuel type, i, based on the fuel mixture that has the highest content of chlorine. If you do not burn multiple fuel types, it is not necessary to determine the value of this term. Insert a value of "1" for Qi. For continuous compliance demonstration, the actual fraction of the fuel burned during the month should be used.

n = Number of different fuel types burned in your boiler or process heater for the mixture that has the highest content of chlorine.

1.028 = Molecular weight ratio of HCl to chlorine.

- (4) To demonstrate compliance with the applicable emission limit for mercury, the mercury emission rate that you calculate for your boiler or process heater using Equation 17 of this section must not exceed the applicable emission limit for mercury.

$$\text{Mercury} = \sum_{i=1}^n (Hgi90 \times Qi) \quad (\text{Eq. 17})$$

Where:

Mercury = Mercury emission rate from the boiler or process heater in units of pounds per million Btu.

Hgi90 = 90th percentile confidence level concentration of mercury in fuel, i, in units of pounds per million Btu as calculated according to Equation 15 of this section.

Q_i = Fraction of total heat input from fuel type, i , based on the fuel mixture that has the highest mercury content. If you do not burn multiple fuel types, it is not necessary to determine the value of this term. Insert a value of "1" for Q_i . For continuous compliance demonstration, the actual fraction of the fuel burned during the month should be used.

n = Number of different fuel types burned in your boiler or process heater for the mixture that has the highest mercury content.

- (5) To demonstrate compliance with the applicable emission limit for TSM for solid or liquid fuels, the TSM emission rate that you calculate for your boiler or process heater from solid fuels using Equation 18 of this section must not exceed the applicable emission limit for TSM.

$$Metals = \sum_{i=1}^n (TSM_{90i} \times Q_i) \quad (\text{Eq. 18})$$

Where:

Metals = TSM emission rate from the boiler or process heater in units of pounds per million Btu.

TSM_{i90} = 90th percentile confidence level concentration of TSM in fuel, i , in units of pounds per million Btu as calculated according to Equation 15 of this section.

Q_i = Fraction of total heat input from fuel type, i , based on the fuel mixture that has the highest TSM content. If you do not burn multiple fuel types, it is not necessary to determine the value of this term. Insert a value of "1" for Q_i . For continuous compliance demonstration, the actual fraction of the fuel burned during the month should be used.

n = Number of different fuel types burned in your boiler or process heater for the mixture that has the highest TSM content.

- (d) [Reserved]
- (e) You must include with the Notification of Compliance Status a signed certification that either the energy assessment was completed according to Table 3 to this subpart, and that the assessment is an accurate depiction of your facility at the time of the assessment, or that the maximum number of on-site technical hours specified in the definition of energy assessment applicable to the facility has been expended.
- (f) You must submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in § 63.7545(e).
- (g) If you elect to demonstrate that a gaseous fuel meets the specifications of another gas 1 fuel as defined in § 63.7575, you must conduct an initial fuel specification analyses according to § 63.7521(f) through (i) and according to the frequency listed in § 63.7540(c) and maintain records of the results of the testing as outlined in § 63.7555(g). For samples where the initial mercury specification has not been exceeded, you will include a signed certification with the Notification of Compliance Status that the initial fuel specification test meets the gas specification outlined in the definition of other gas 1 fuels.

- (h) If you own or operate a unit subject to emission limits in Table 1 or 2 or Tables 11 through 15 to this subpart, you must meet the work practice standard according to Table 3 to this subpart. During startup and shutdown, you must only follow the work practice standards according to items 5 and 6 of Table 3 to this subpart.
- (i) If you opt to comply with the alternative SO₂ CEMS operating limit in Tables 4 and 8 to this subpart, you may do so only if your affected boiler or process heater:
 - (1) Has a system using wet scrubber or dry sorbent injection and SO₂ CEMS installed on the unit; and
 - (2) At all times, you operate the wet scrubber or dry sorbent injection for acid gas control on the unit consistent with § 63.7500(a)(3); and
 - (3) You establish a unit-specific maximum SO₂ operating limit by collecting the maximum hourly SO₂ emission rate on the SO₂ CEMS during the paired 3-run test for HCl. The maximum SO₂ operating limit is equal to the highest hourly average SO₂ concentration measured during the HCl performance test.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7174, Jan. 31, 2013; 80 FR 72811, Nov. 20, 2015; 87 FR 60845, Oct. 6, 2022]

§ 63.7533 Can I use efficiency credits earned from implementation of energy conservation measures to comply with this subpart?

- (a) If you elect to comply with the alternative equivalent output-based emission limits, instead of the heat input-based limits listed in Table 2 or 15 to this subpart, and you want to take credit for implementing energy conservation measures identified in an energy assessment, you may demonstrate compliance using efficiency credits according to the procedures in this section. You may use this compliance approach for an existing affected boiler for demonstrating initial compliance according to § 63.7522(e) and for demonstrating monthly compliance according to § 63.7522(f). Owners or operators using this compliance approach must establish an emissions benchmark, calculate and document the efficiency credits, develop an Implementation Plan, comply with the general reporting requirements, and apply the efficiency credit according to the procedures in paragraphs (b) through (f) of this section. You cannot use this compliance approach for a new or reconstructed affected boiler. Additional guidance from the Department of Energy on efficiency credits is available at <https://www.epa.gov/ttn/atw/boiler/boilerpg.html>.
- (b) For each existing affected boiler for which you intend to apply emissions credits, establish a benchmark from which emission reduction credits may be generated by determining the actual annual fuel heat input to the affected boiler before initiation of an energy conservation activity to reduce energy demand (i.e., fuel usage) according to paragraphs (b)(1) through (4) of this section. The benchmark shall be expressed in trillion Btu per year heat input.
 - (1) The benchmark from which efficiency credits may be generated shall be determined by using the most representative, accurate, and reliable process available for the source. The benchmark shall be established for a one-year period before the date that an energy demand reduction occurs, unless it can be demonstrated that a different time period is more representative of historical operations.
 - (2) Determine the starting point from which to measure progress. Inventory all fuel purchased and generated on-site (off-gases, residues) in physical units (MMBtu, million cubic feet, etc.).
 - (3) Document all uses of energy from the affected boiler. Use the most recent data available.

- (4) Collect non-energy related facility and operational data to normalize, if necessary, the benchmark to current operations, such as building size, operating hours, etc. If possible, use actual data that are current and timely rather than estimated data.
- (c) Efficiency credits can be generated if the energy conservation measures were implemented after January 1, 2008 and if sufficient information is available to determine the appropriate value of credits.
 - (1) The following emission points cannot be used to generate efficiency credits:
 - (i) Energy conservation measures implemented on or before January 1, 2008, unless the level of energy demand reduction is increased after January 1, 2008, in which case credit will be allowed only for change in demand reduction achieved after January 1, 2008.
 - (ii) Efficiency credits on shut-down boilers. Boilers that are shut down cannot be used to generate credits unless the facility provides documentation linking the permanent shutdown to energy conservation measures identified in the energy assessment. In this case, the bench established for the affected boiler to which the credits from the shutdown will be applied must be revised to include the benchmark established for the shutdown boiler.
 - (2) For all points included in calculating emissions credits, the owner or operator shall:
 - (i) Calculate annual credits for all energy demand points. Use Equation 19 to calculate credits. Energy conservation measures that meet the criteria of paragraph (c)(1) of this section shall not be included, except as specified in paragraph (c)(1)(i) of this section.
 - (3) Credits are generated by the difference between the benchmark that is established for each affected boiler, and the actual energy demand reductions from energy conservation measures implemented after January 1, 2008. Credits shall be calculated using Equation 19 of this section as follows:
 - (i) The overall equation for calculating credits is:

$$ECredits = \left(\sum_{i=1}^n EIS_{iactual} \right) \div EI_{baseline} \quad (Eq. 19)$$

Where:

ECredits = Energy Input Savings for all energy conservation measures implemented for an affected boiler, expressed as a decimal fraction of the baseline energy input.

$EIS_{iactual}$ = Energy Input Savings for each energy conservation measure, i, implemented for an affected boiler, million Btu per year.

$EI_{baseline}$ = Energy Input baseline for the affected boiler, million Btu per year.

n = Number of energy conservation measures included in the efficiency credit for the affected boiler.

(ii) [Reserved]

- (d) The owner or operator shall develop, and submit for approval upon request by the Administrator, an Implementation Plan containing all of the information required in this paragraph for all boilers to be included in an efficiency credit approach. The Implementation Plan shall identify all existing affected

boilers to be included in applying the efficiency credits. The Implementation Plan shall include a description of the energy conservation measures implemented and the energy savings generated from each measure and an explanation of the criteria used for determining that savings. If requested, you must submit the implementation plan for efficiency credits to the Administrator for review and approval no later than 180 days before the date on which the facility intends to demonstrate compliance using the efficiency credit approach.

- (e) The emissions rate as calculated using Equation 20 in paragraph (f) of this section from each existing boiler participating in the efficiency credit option must be in compliance with the limits in Table 2 or 15 to this subpart at all times the affected unit is subject to numeric emission limits, following the compliance date specified in § 63.7495.
- (f) You must use Equation 20 of this paragraph (f) to demonstrate initial compliance by demonstrating that the emissions from the affected boiler participating in the efficiency credit compliance approach do not exceed the emission limits in Table 2 or 15 to this subpart.

Equation 20 to paragraph (f)

$$E_{adj} = E_m \times (1 - ECredits) \quad (Eq. 20)$$

Where:

E_{adj} = Emission level adjusted by applying the efficiency credits earned, lb per million Btu steam output (or lb per MWh) for the affected boiler.

E_m = Emissions measured during the performance test, lb per million Btu steam output (or lb per MWh) for the affected boiler.

ECredits = Efficiency credits from Equation 19 to paragraph (c)(3)(i) of this section for the affected boiler.

- (g) As part of each compliance report submitted as required under § 63.7550, you must include documentation that the energy conservation measures implemented continue to generate the credit for use in demonstrating compliance with the emission limits.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7178, Jan. 31, 2013; 80 FR 72812, Nov. 20, 2015; 87 FR 60845, Oct. 6, 2022]

CONTINUOUS COMPLIANCE REQUIREMENTS

§ 63.7535 Is there a minimum amount of monitoring data I must obtain?

- (a) You must monitor and collect data according to this section and the site-specific monitoring plan required by § 63.7505(d).
- (b) You must operate the monitoring system and collect data at all required intervals at all times that each boiler or process heater is operating and compliance is required, except for periods of monitoring system malfunctions or out of control periods (see § 63.8(c)(7) of this part), and required monitoring system quality assurance or control activities, including, as applicable, calibration checks, required zero and span

adjustments, and scheduled CMS maintenance as defined in your site-specific monitoring plan. A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. You are required to complete monitoring system repairs in response to monitoring system malfunctions or out-of-control periods and to return the monitoring system to operation as expeditiously as practicable.

- (c) You may not use data recorded during periods of startup and shutdown, monitoring system malfunctions or out-of-control periods, repairs associated with monitoring system malfunctions or out-of-control periods, or required monitoring system quality assurance or control activities in data averages and calculations used to report emissions or operating levels. You must record and make available upon request results of CMS performance audits and dates and duration of periods when the CMS is out of control to completion of the corrective actions necessary to return the CMS to operation consistent with your site-specific monitoring plan. You must use all the data collected during all other periods in assessing compliance and the operation of the control device and associated control system.
- (d) Except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, system accuracy audits, calibration checks, and required zero and span adjustments), failure to collect required data is a deviation of the monitoring requirements. In calculating monitoring results, do not use any data collected during periods of startup and shutdown, when the monitoring system is out of control as specified in your site-specific monitoring plan, while conducting repairs associated with periods when the monitoring system is out of control, or while conducting required monitoring system quality assurance or quality control activities. You must calculate monitoring results using all other monitoring data collected while the process is operating. You must report all periods when the monitoring system is out of control in your semi-annual report.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7179, Jan. 31, 2013; 80 FR 72812, Nov. 20, 2015]

§ 63.7540 How do I demonstrate continuous compliance with the emission limitations, fuel specifications and work practice standards?

- (a) You must demonstrate continuous compliance with each emission limit in Tables 1 and 2 or 11 through 15 to this subpart, the work practice standards in Table 3 to this subpart, and the operating limits in Table 4 to this subpart that applies to you according to the methods specified in Table 8 to this subpart and paragraphs (a)(1) through (19) of this section.
 - (1) Following the date on which the initial compliance demonstration is completed or is required to be completed under §§ 63.7 and 63.7510, whichever date comes first, operation above the established maximum or below the established minimum operating limits shall constitute a deviation of established operating limits listed in Table 4 of this subpart except during performance tests conducted to determine compliance with the emission limits or to establish new operating limits. Operating limits must be confirmed or reestablished during performance tests.
 - (2) As specified in § 63.7555(d), you must keep records of the type and amount of all fuels burned in each boiler or process heater during the reporting period to demonstrate that all fuel types and mixtures of fuels burned would result in either of the following:
 - (i) Equal to or lower emissions of HCl, mercury, and TSM than the applicable emission limit for each pollutant, if you demonstrate compliance through fuel analysis.

- (ii) Equal to or lower fuel input of chlorine, mercury, and TSM than the maximum values calculated during the last performance test, if you demonstrate compliance through performance testing.
- (3) If you demonstrate compliance with an applicable HCl emission limit through fuel analysis for a solid or liquid fuel and you plan to burn a new type of solid or liquid fuel, you must recalculate the HCl emission rate using Equation 16 of § 63.7530 according to paragraphs (a)(3)(i) through (iii) of this section. You are not required to conduct fuel analyses for the fuels described in § 63.7510(a)(2)(i) through (iii). You may exclude the fuels described in § 63.7510(a)(2)(i) through (iii) when recalculating the HCl emission rate.
 - (i) You must determine the chlorine concentration for any new fuel type in units of pounds per million Btu, based on supplier data or your own fuel analysis, according to the provisions in your site-specific fuel analysis plan developed according to § 63.7521(b).
 - (ii) You must determine the new mixture of fuels that will have the highest content of chlorine.
 - (iii) Recalculate the HCl emission rate from your boiler or process heater under these new conditions using Equation 16 of § 63.7530. The recalculated HCl emission rate must be less than the applicable emission limit.
- (4) If you demonstrate compliance with an applicable HCl emission limit through performance testing and you plan to burn a new type of fuel or a new mixture of fuels, you must recalculate the maximum chlorine input using Equation 7 of § 63.7530. If the results of recalculating the maximum chlorine input using Equation 7 of § 63.7530 are greater than the maximum chlorine input level established during the previous performance test, then you must conduct a new performance test within 60 days of burning the new fuel type or fuel mixture according to the procedures in § 63.7520 to demonstrate that the HCl emissions do not exceed the emission limit. You must also establish new operating limits based on this performance test according to the procedures in § 63.7530(b). In recalculating the maximum chlorine input and establishing the new operating limits, you are not required to conduct fuel analyses for and include the fuels described in § 63.7510(a)(2)(i) through (iii).
- (5) If you demonstrate compliance with an applicable mercury emission limit through fuel analysis, and you plan to burn a new type of fuel, you must recalculate the mercury emission rate using Equation 17 of § 63.7530 according to the procedures specified in paragraphs (a)(5)(i) through (iii) of this section. You are not required to conduct fuel analyses for the fuels described in § 63.7510(a)(2)(i) through (iii). You may exclude the fuels described in § 63.7510(a)(2)(i) through (iii) when recalculating the mercury emission rate.
 - (i) You must determine the mercury concentration for any new fuel type in units of pounds per million Btu, based on supplier data or your own fuel analysis, according to the provisions in your site-specific fuel analysis plan developed according to § 63.7521(b).
 - (ii) You must determine the new mixture of fuels that will have the highest content of mercury.
 - (iii) Recalculate the mercury emission rate from your boiler or process heater under these new conditions using Equation 17 of § 63.7530. The recalculated mercury emission rate must be less than the applicable emission limit.
- (6) If you demonstrate compliance with an applicable mercury emission limit through performance testing, and you plan to burn a new type of fuel or a new mixture of fuels, you must recalculate the maximum mercury input using Equation 8 of § 63.7530. If the results of recalculating the maximum mercury input using Equation 8 of § 63.7530 are higher than the maximum mercury input level

established during the previous performance test, then you must conduct a new performance test within 60 days of burning the new fuel type or fuel mixture according to the procedures in § 63.7520 to demonstrate that the mercury emissions do not exceed the emission limit. You must also establish new operating limits based on this performance test according to the procedures in § 63.7530(b). You are not required to conduct fuel analyses for the fuels described in § 63.7510(a)(2)(i) through (iii). You may exclude the fuels described in § 63.7510(a)(2)(i) through (iii) when recalculating the mercury emission rate.

- (7) If your unit is controlled with a fabric filter, and you demonstrate continuous compliance using a bag leak detection system, you must initiate corrective action within 1 hour of a bag leak detection system alert and complete corrective actions as soon as practical, and operate and maintain the fabric filter system such that the periods which would cause an alert are no more than 5 percent of the operating time during a 6-month period. You must also keep records of the date, time, and duration of each alert, the time corrective action was initiated and completed, and a brief description of the cause of the alert and the corrective action taken. You must also record the percent of the operating time during each 6-month period that the conditions exist for an alert. In calculating this operating time percentage, if inspection of the fabric filter demonstrates that no corrective action is required, no alert time is counted. If corrective action is required, each alert shall be counted as a minimum of 1 hour. If you take longer than 1 hour to initiate corrective action, the alert time shall be counted as the actual amount of time taken to initiate corrective action.
- (8) To demonstrate compliance with the applicable alternative CO CEMS emission limit listed in Table 1 or 2 or Tables 11 through 15 to this subpart, you must meet the requirements in paragraphs (a)(8)(i) through (iv) of this section.
 - (i) Continuously monitor CO according to §§ 63.7525(a) and 63.7535.
 - (ii) Maintain a CO emission level below or at your applicable alternative CO CEMS-based standard in Table 1 or 2 or Tables 11 through 15 to this subpart at all times the affected unit is subject to numeric emission limits.
 - (iii) Keep records of CO levels according to § 63.7555(b).
 - (iv) You must record and make available upon request results of CO CEMS performance audits, dates and duration of periods when the CO CEMS is out of control to completion of the corrective actions necessary to return the CO CEMS to operation consistent with your site-specific monitoring plan.
- (9) The owner or operator of a boiler or process heater using a PM CPMS or a PM CEMS to meet requirements of this subpart shall install, certify (PM CEMS only), operate, and maintain the PM CPMS or PM CEMS in accordance with your site-specific monitoring plan as required in § 63.7505(d).
- (10) If your boiler or process heater has a heat input capacity of 10 million Btu per hour or greater, you must conduct an annual tune-up of the boiler or process heater to demonstrate continuous compliance as specified in paragraphs (a)(10)(i) through (vi) of this section. You must conduct the tune-up while burning the type of fuel (or fuels in case of units that routinely burn a mixture) that provided the majority of the heat input to the boiler or process heater over the 12 months prior to the tune-up. This frequency does not apply to limited-use boilers and process heaters, as defined in § 63.7575, or units with continuous oxygen trim systems that maintain an optimum air to fuel ratio.

- (i) As applicable, inspect the burner, and clean or replace any components of the burner as necessary (you may perform the burner inspection any time prior to the tune-up or delay the burner inspection until the next scheduled unit shutdown). Units that produce electricity for sale may delay the burner inspection until the first outage, not to exceed 36 months from the previous inspection. At units where entry into a piece of process equipment or into a storage vessel is required to complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment;
- (ii) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available;
- (iii) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (you may delay the inspection until the next scheduled unit shutdown). Units that produce electricity for sale may delay the inspection until the first outage, not to exceed 36 months from the previous inspection;
- (iv) Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NO_x requirement to which the unit is subject;
- (v) Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer; and
- (vi) Maintain on-site and submit, if requested by the Administrator, a report containing the information in paragraphs (a)(10)(vi)(A) through (C) of this section,
 - (A) The concentrations of CO in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler or process heater;
 - (B) A description of any corrective actions taken as a part of the tune-up; and
 - (C) The type and amount of fuel used over the 12 months prior to the tune-up, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel used by each unit.
- (11) If your boiler or process heater has a heat input capacity of less than 10 million Btu per hour (except as specified in paragraph (a)(12) of this section), you must conduct a biennial tune-up of the boiler or process heater as specified in paragraphs (a)(10)(i) through (vi) of this section to demonstrate continuous compliance.
- (12) If your boiler or process heater has a continuous oxygen trim system that maintains an optimum air to fuel ratio, or a heat input capacity of less than or equal to 5 million Btu per hour and the unit is in the units designed to burn gas 1; units designed to burn gas 2 (other); or units designed to burn light liquid subcategories, or meets the definition of limited-use boiler or process heater in § 63.7575, you must conduct a tune-up of the boiler or process heater every 5 years as specified in paragraphs (a)(10)(i) through (vi) of this section to demonstrate continuous compliance. You may delay the burner inspection specified in paragraph (a)(10)(i) of this section until the next scheduled or unscheduled unit shutdown, but you must inspect each burner at least once every 72 months. If an

oxygen trim system is utilized on a unit without emission standards to reduce the tune-up frequency to once every 5 years, set the oxygen level no lower than the oxygen concentration measured during the most recent tune-up.

- (13) If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup.
- (14) If you are using a CEMS measuring mercury emissions to meet requirements of this subpart you must install, certify, operate, and maintain the mercury CEMS as specified in paragraphs (a)(14)(i) and (ii) of this section.
 - (i) Operate the mercury CEMS in accordance with performance specification 12A of 40 CFR part 60, appendix B or operate a sorbent trap based integrated monitor in accordance with performance specification 12B of 40 CFR part 60, appendix B. The duration of the performance test must be 30 operating days if you specified a 30 operating day basis in § 63.7545(e)(2)(iii) for mercury CEMS or it must be 720 hours if you specified a 720 hour basis in § 63.7545(e)(2)(iii) for mercury CEMS. For each day in which the unit operates, you must obtain hourly mercury concentration data, and stack gas volumetric flow rate data.
 - (ii) If you are using a mercury CEMS, you must install, operate, calibrate, and maintain an instrument for continuously measuring and recording the mercury mass emissions rate to the atmosphere according to the requirements of performance specifications 6 and 12A of 40 CFR part 60, appendix B, and quality assurance procedure 6 of 40 CFR part 60, appendix F.
- (15) If you are using a CEMS to measure HCl emissions to meet requirements of this subpart, you must install, certify, operate, and maintain the HCl CEMS as specified in paragraphs (a)(15)(i) and (ii) of this section. This option for an affected unit takes effect on the date of approval of a site-specific monitoring plan.
 - (i) Operate the continuous emissions monitoring system in accordance with the applicable performance specification in 40 CFR part 60, appendix B. The duration of the performance test must be 30 operating days if you specified a 30 operating day basis in § 63.7545(e)(2)(iii) for HCl CEMS or it must be 720 hours if you specified a 720 hour basis in § 63.7545(e)(2)(iii) for HCl CEMS. For each day in which the unit operates, you must obtain hourly HCl concentration data, and stack gas volumetric flow rate data.
 - (ii) If you are using a HCl CEMS, you must install, operate, calibrate, and maintain an instrument for continuously measuring and recording the HCl mass emissions rate to the atmosphere according to the requirements of the applicable performance specification of 40 CFR part 60, appendix B, and the quality assurance procedures of 40 CFR part 60, appendix F.
- (16) If you demonstrate compliance with an applicable TSM emission limit through performance testing, and you plan to burn a new type of fuel or a new mixture of fuels, you must recalculate the maximum TSM input using Equation 9 of § 63.7530. If the results of recalculating the maximum TSM input using Equation 9 of § 63.7530 are higher than the maximum total selected input level established during the previous performance test, then you must conduct a new performance test within 60 days of burning the new fuel type or fuel mixture according to the procedures in § 63.7520 to demonstrate that the TSM emissions do not exceed the emission limit. You must also establish new operating limits based on this performance test according to the procedures in § 63.7530(b). You are not required to conduct fuel analyses for the fuels described in § 63.7510(a)(2)(i) through (iii). You may exclude the fuels described in § 63.7510(a)(2)(i) through (iii) when recalculating the TSM emission rate.

- (17) If you demonstrate compliance with an applicable TSM emission limit through fuel analysis for solid or liquid fuels, and you plan to burn a new type of fuel, you must recalculate the TSM emission rate using Equation 18 of § 63.7530 according to the procedures specified in paragraphs (a)(5)(i) through (iii) of this section. You are not required to conduct fuel analyses for the fuels described in § 63.7510(a)(2)(i) through (iii). You may exclude the fuels described in § 63.7510(a)(2)(i) through (iii) when recalculating the TSM emission rate.
- (i) You must determine the TSM concentration for any new fuel type in units of pounds per million Btu, based on supplier data or your own fuel analysis, according to the provisions in your site-specific fuel analysis plan developed according to § 63.7521(b).
 - (ii) You must determine the new mixture of fuels that will have the highest content of TSM.
 - (iii) Recalculate the TSM emission rate from your boiler or process heater under these new conditions using Equation 18 of § 63.7530. The recalculated TSM emission rate must be less than the applicable emission limit.
- (18) If you demonstrate continuous PM emissions compliance with a PM CPMS you will use a PM CPMS to establish a site-specific operating limit corresponding to the results of the performance test demonstrating compliance with the PM limit. You will conduct your performance test using the test method criteria in Table 5 of this subpart. You will use the PM CPMS to demonstrate continuous compliance with this operating limit. You must repeat the performance test annually and reassess and adjust the site-specific operating limit in accordance with the results of the performance test.
- (i) To determine continuous compliance, you must record the PM CPMS output data for all periods when the process is operating and the PM CPMS is not out-of-control. You must demonstrate continuous compliance by using all quality-assured hourly average data collected by the PM CPMS for all operating hours to calculate the arithmetic average operating parameter in units of the operating limit (milliamps) on a 30-day rolling average basis.
 - (ii) For any deviation of the 30-day rolling PM CPMS average value from the established operating parameter limit, you must:
 - (A) Within 48 hours of the deviation, visually inspect the air pollution control device (APCD);
 - (B) If inspection of the APCD identifies the cause of the deviation, take corrective action as soon as possible and return the PM CPMS measurement to within the established value; and
 - (C) Within 30 days of the deviation or at the time of the annual compliance test, whichever comes first, conduct a PM emissions compliance test to determine compliance with the PM emissions limit and to verify or re-establish the CPMS operating limit. You are not required to conduct additional testing for any deviations that occur between the time of the original deviation and the PM emissions compliance test required under this paragraph.
 - (iii) PM CPMS deviations from the operating limit leading to more than four required performance tests in a 12-month operating period constitute a separate violation of this subpart.

- (19) If you choose to comply with the PM filterable emissions limit by using PM CEMS you must install, certify, operate, and maintain a PM CEMS and record the output of the PM CEMS as specified in paragraphs (a)(19)(i) through (vii) of this section. The compliance limit will be expressed as a 30-day rolling average of the numerical emissions limit value applicable for your unit in Table 1 or 2 or Tables 11 through 15 to this subpart.
- (i) Install and certify your PM CEMS according to the procedures and requirements in Performance Specification 11—Specifications and Test Procedures for Particulate Matter Continuous Emission Monitoring Systems at Stationary Sources in Appendix B to part 60 of this chapter, using test criteria outlined in Table V of this rule. The reportable measurement output from the PM CEMS must be expressed in units of the applicable emissions limit (e.g., lb/MMBtu, lb/MWh).
 - (ii) Operate and maintain your PM CEMS according to the procedures and requirements in Procedure 2— Quality Assurance Requirements for Particulate Matter Continuous Emission Monitoring Systems at Stationary Sources in Appendix F to part 60 of this chapter.
 - (A) You must conduct the relative response audit (RRA) for your PM CEMS at least once annually.
 - (B) You must conduct the relative correlation audit (RCA) for your PM CEMS at least once every 3 years.
 - (iii) Collect PM CEMS hourly average output data for all boiler operating hours except as indicated in paragraph (v) of this section.
 - (iv) Calculate the arithmetic 30-day rolling average of all of the hourly average PM CEMS output data collected during all nonexempt boiler or process heater operating hours.
 - (v) You must collect data using the PM CEMS at all times the unit is operating and at the intervals specified this paragraph (a), except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities.
 - (vi) You must use all the data collected during all boiler or process heater operating hours in assessing the compliance with your operating limit except:
 - (A) Any data collected during monitoring system malfunctions, repairs associated with monitoring system malfunctions, or required monitoring system quality assurance or control activities conducted during monitoring system malfunctions in calculations and report any such periods in your annual deviation report;
 - (B) Any data collected during periods when the monitoring system is out of control as specified in your site-specific monitoring plan, repairs associated with periods when the monitoring system is out of control, or required monitoring system quality assurance or control activities conducted during out of control periods in calculations used to report emissions or operating levels and report any such periods in your annual deviation report;
 - (C) Any data recorded during periods of startup or shutdown.

- (vii) You must record and make available upon request results of PM CEMS system performance audits, dates and duration of periods when the PM CEMS is out of control to completion of the corrective actions necessary to return the PM CEMS to operation consistent with your site-specific monitoring plan.
- (b) You must report each instance in which you did not meet each emission limit and operating limit in Tables 1 through 4 or 11 through 15 to this subpart that apply to you. These instances are deviations from the emission limits or operating limits, respectively, in this subpart. These deviations must be reported according to the requirements in § 63.7550.
- (c) If you elected to demonstrate that the unit meets the specification for mercury for the unit designed to burn gas 1 subcategory, you must follow the sampling frequency specified in paragraphs (c)(1) through (4) of this section and conduct this sampling according to the procedures in § 63.7521(f) through (i).
 - (1) If the initial mercury constituents in the gaseous fuels are measured to be equal to or less than half of the mercury specification as defined in § 63.7575, you do not need to conduct further sampling.
 - (2) If the initial mercury constituents are greater than half but equal to or less than 75 percent of the mercury specification as defined in § 63.7575, you will conduct semi-annual sampling. If 6 consecutive semi-annual fuel analyses demonstrate 50 percent or less of the mercury specification, you do not need to conduct further sampling. If any semi-annual sample exceeds 75 percent of the mercury specification, you must return to monthly sampling for that fuel, until 12 months of fuel analyses again are less than 75 percent of the compliance level.
 - (3) If the initial mercury constituents are greater than 75 percent of the mercury specification as defined in § 63.7575, you will conduct monthly sampling. If 12 consecutive monthly fuel analyses demonstrate 75 percent or less of the mercury specification, you may decrease the fuel analysis frequency to semi-annual for that fuel.
 - (4) If the initial sample exceeds the mercury specification as defined in § 63.7575, each affected boiler or process heater combusting this fuel is not part of the unit designed to burn gas 1 subcategory and must be in compliance with the emission and operating limits for the appropriate subcategory. You may elect to conduct additional monthly sampling while complying with these emissions and operating limits to demonstrate that the fuel qualifies as another gas 1 fuel. If 12 consecutive monthly fuel analyses samples are at or below the mercury specification as defined in § 63.7575, each affected boiler or process heater combusting the fuel can elect to switch back into the unit designed to burn gas 1 subcategory until the mercury specification is exceeded.
- (d) For startup and shutdown, you must meet the work practice standards according to items 5 and 6 of Table 3 of this subpart.

[78 FR 7179, Jan. 31, 2013, as amended at 80 FR 72813, Nov. 20, 2015; 87 FR 60846, Oct. 6, 2022]

§ 63.7541 How do I demonstrate continuous compliance under the emissions averaging provision?

- (a) Following the compliance date, the owner or operator must demonstrate compliance with this subpart on a continuous basis by meeting the requirements of paragraphs (a)(1) through (5) of this section.
 - (1) For each calendar month, demonstrate compliance with the average weighted emissions limit for the existing units participating in the emissions averaging option as determined in § 63.7522(f) and (g).

- (2) You must maintain the applicable opacity limit according to paragraphs (a)(2)(i) and (ii) of this section.
 - (i) For each existing unit participating in the emissions averaging option that is equipped with a dry control system and not vented to a common stack, maintain opacity at or below the applicable limit.
 - (ii) For each group of units participating in the emissions averaging option where each unit in the group is equipped with a dry control system and vented to a common stack that does not receive emissions from non-affected units, maintain opacity at or below the applicable limit at the common stack.
- (3) For each existing unit participating in the emissions averaging option that is equipped with a wet scrubber, maintain the 30-day rolling average parameter values at or above the operating limits established during the most recent performance test.
- (4) For each existing unit participating in the emissions averaging option that has an approved alternative operating parameter, maintain the 30-day rolling average parameter values consistent with the approved monitoring plan.
- (5) For each existing unit participating in the emissions averaging option venting to a common stack configuration containing affected units from other subcategories, maintain the appropriate operating limit for each unit as specified in Table 4 to this subpart that applies.
- (b) Any instance where the owner or operator fails to comply with the continuous monitoring requirements in paragraphs (a)(1) through (5) of this section is a deviation.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7182, Jan. 31, 2013]

NOTIFICATION, REPORTS, AND RECORDS

§ 63.7545 What notifications must I submit and when?

- (a) You must submit to the Administrator all of the notifications in §§ 63.7(b) and (c), 63.8(e), (f)(4) and (6), and 63.9(b) through (h) that apply to you by the dates specified.
- (b) As specified in § 63.9(b)(2), if you startup your affected source before January 31, 2013, you must submit an Initial Notification not later than 120 days after January 31, 2013, or no later than 120 days after the source becomes subject to this subpart, whichever is later.
- (c) As specified in § 63.9(b)(4) and (5), if you startup your new or reconstructed affected source on or after January 31, 2013, you must submit an Initial Notification not later than 15 days after the actual date of startup of the affected source. For a new or reconstructed affected source that has reclassified to major source status, you must submit an Initial Notification not later 120 days after the source becomes subject to this subpart.
- (d) If you are required to conduct a performance test you must submit a Notification of Intent to conduct a performance test at least 60 days before the performance test is scheduled to begin.
- (e) If you are required to conduct an initial compliance demonstration as specified in § 63.7530, you must submit a Notification of Compliance Status according to § 63.9(h)(2)(ii). For the initial compliance demonstration for each boiler or process heater, you must submit the Notification of Compliance Status, including all performance test results and fuel analyses, before the close of business on the 60th day

following the completion of all performance test and/or other initial compliance demonstrations for all boiler or process heaters at the facility according to § 63.10(d)(2). The Notification of Compliance Status report must contain all the information specified in paragraphs (e)(1) through (8) of this section, as applicable. If you are not required to conduct an initial compliance demonstration as specified in § 63.7530(a), the Notification of Compliance Status must only contain the information specified in paragraphs (e)(1) and (8) of this section and must be submitted within 60 days of the compliance date specified at § 63.7495(b).

- (1) A description of the affected unit(s) including identification of which subcategories the unit is in, the design heat input capacity of the unit, a description of the add-on controls used on the unit to comply with this subpart, description of the fuel(s) burned, including whether the fuel(s) were a secondary material determined by you or the EPA through a petition process to be a non-waste under § 241.3 of this chapter, whether the fuel(s) were a secondary material processed from discarded non-hazardous secondary materials within the meaning of § 241.3 of this chapter, and justification for the selection of fuel(s) burned during the compliance demonstration.
- (2) Summary of the results of all performance tests and fuel analyses, and calculations conducted to demonstrate initial compliance including all established operating limits, and including:
 - (i) Identification of whether you are complying with the PM emission limit or the alternative TSM emission limit.
 - (ii) Identification of whether you are complying with the output-based emission limits or the heat input-based (i.e., lb/MMBtu or ppm) emission limits,
 - (iii) Identification of whether you are complying the arithmetic mean of all valid hours of data from the previous 30 operating days or of the previous 720 hours. This identification shall be specified separately for each operating parameter.
- (3) A summary of the maximum CO emission levels recorded during the performance test to show that you have met any applicable emission standard in Table 1 or 2 or Tables 11 through 15 to this subpart, if you are not using a CO CEMS to demonstrate compliance.
- (4) Identification of whether you plan to demonstrate compliance with each applicable emission limit through performance testing, a CEMS, or fuel analysis.
- (5) Identification of whether you plan to demonstrate compliance by emissions averaging and identification of whether you plan to demonstrate compliance by using efficiency credits through energy conservation:
 - (i) If you plan to demonstrate compliance by emission averaging, report the emission level that was being achieved or the control technology employed on January 31, 2013.
 - (ii) [Reserved]
- (6) A signed certification that you have met all applicable emission limits and work practice standards.
- (7) If you had a deviation from any emission limit, work practice standard, or operating limit, you must also submit a description of the deviation, the duration of the deviation, and the corrective action taken in the Notification of Compliance Status report.
- (8) In addition to the information required in § 63.9(h)(2), your notification of compliance status must include the following certification(s) of compliance, as applicable, and signed by a responsible official:

- (i) "This facility completed the required initial tune-up for all of the boilers and process heaters covered by 40 CFR part 63 subpart DDDDD at this site according to the procedures in § 63.7540(a)(10)(i) through (vi)."
- (ii) "This facility has had an energy assessment performed according to § 63.7530(e)."
- (iii) Except for units that burn only natural gas, refinery gas, or other gas 1 fuel, or units that qualify for a statutory exemption as provided in section 129(g)(1) of the Clean Air Act, include the following: "No secondary materials that are solid waste were combusted in any affected unit."
- (f) If you operate a unit designed to burn natural gas, refinery gas, or other gas 1 fuels that is subject to this subpart, and you intend to use a fuel other than natural gas, refinery gas, gaseous fuel subject to another subpart of this part, part 60, 61, or 65, or other gas 1 fuel to fire the affected unit during a period of natural gas curtailment or supply interruption, as defined in § 63.7575, you must submit a notification of alternative fuel use within 48 hours of the declaration of each period of natural gas curtailment or supply interruption, as defined in § 63.7575. The notification must include the information specified in paragraphs (f)(1) through (5) of this section.
 - (1) Company name and address.
 - (2) Identification of the affected unit.
 - (3) Reason you are unable to use natural gas or equivalent fuel, including the date when the natural gas curtailment was declared or the natural gas supply interruption began.
 - (4) Type of alternative fuel that you intend to use.
 - (5) Dates when the alternative fuel use is expected to begin and end.
- (g) If you intend to commence or recommence combustion of solid waste, you must provide 30 days prior notice of the date upon which you will commence or recommence combustion of solid waste. The notification must identify:
 - (1) The name of the owner or operator of the affected source, as defined in § 63.7490, the location of the source, the boiler(s) or process heater(s) that will commence burning solid waste, and the date of the notice.
 - (2) The currently applicable subcategories under this subpart.
 - (3) The date on which you became subject to the currently applicable emission limits.
 - (4) The date upon which you will commence combusting solid waste.
- (h) If you have switched fuels or made a physical change to the boiler or process heater and the fuel switch or physical change resulted in the applicability of a different subcategory, you must provide notice of the date upon which you switched fuels or made the physical change within 30 days of the switch/change. The notification must identify:
 - (1) The name of the owner or operator of the affected source, as defined in § 63.7490, the location of the source, the boiler(s) and process heater(s) that have switched fuels, were physically changed, and the date of the notice.
 - (2) The currently applicable subcategory under this subpart.
 - (3) The date upon which the fuel switch or physical change occurred.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7183, Jan. 31, 2013; 80 FR 72814, Nov. 20, 2015; 85 FR 73913, Nov. 19, 2020; 85 FR 84262, Dec. 28, 2020; 87 FR 60846, Oct. 6, 2022]

§ 63.7550 What reports must I submit and when?

- (a) You must submit each report in Table 9 to this subpart that applies to you.
- (b) Unless the EPA Administrator has approved a different schedule for submission of reports under § 63.10(a), you must submit each report, according to paragraph (h) of this section, by the date in Table 9 to this subpart and according to the requirements in paragraphs (b)(1) through (4) of this section. For units that are subject only to a requirement to conduct subsequent annual, biennial, or 5-year tune-up according to § 63.7540(a)(10), (11), or (12), respectively, and not subject to emission limits or Table 4 operating limits, you may submit only an annual, biennial, or 5-year compliance report, as applicable, as specified in paragraphs (b)(1) through (4) of this section, instead of a semi-annual compliance report.
 - (1) The first semi-annual compliance report must cover the period beginning on the compliance date that is specified for each boiler or process heater in § 63.7495 and ending on June 30 or December 31, whichever date is the first date that occurs at least 180 days after the compliance date that is specified for your source in § 63.7495. If submitting an annual, biennial, or 5-year compliance report, the first compliance report must cover the period beginning on the compliance date that is specified for each boiler or process heater in § 63.7495 and ending on December 31 within 1, 2, or 5 years, as applicable, after the compliance date that is specified for your source in § 63.7495.
 - (2) The first semi-annual compliance report must be postmarked or submitted no later than July 31 or January 31, whichever date is the first date following the end of the first calendar half after the compliance date that is specified for each boiler or process heater in § 63.7495. The first annual, biennial, or 5-year compliance report must be postmarked or submitted no later than January 31.
 - (3) Each subsequent semi-annual compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31. Annual, biennial, and 5-year compliance reports must cover the applicable 1-, 2-, or 5-year periods from January 1 to December 31.
 - (4) Each subsequent semi-annual compliance report must be postmarked or submitted no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period. Annual, biennial, and 5-year compliance reports must be postmarked or submitted no later than January 31.
 - (5) For each affected source that is subject to permitting regulations pursuant to part 70 or part 71 of this chapter, and if the permitting authority has established dates for submitting semiannual reports pursuant to 70.6(a)(3)(iii)(A) or 71.6(a)(3)(iii)(A), you may submit the first and subsequent compliance reports according to the dates the permitting authority has established in the permit instead of according to the dates in paragraphs (b)(1) through (4) of this section.
- (c) A compliance report must contain the following information depending on how the facility chooses to comply with the limits set in this rule.
 - (1) If the facility is subject to the requirements of a tune up you must submit a compliance report with the information in paragraphs (c)(5)(i) through (iii) of this section, (xiv) and (xvii) of this section, and paragraph (c)(5)(iv) of this section for limited-use boiler or process heater.

- (2) If you are complying with the fuel analysis you must submit a compliance report with the information in paragraphs (c)(5)(i) through (iii), (vi), (x), (xi), (xiii), (xv), (xvii), (xviii) and paragraph (d) of this section.
- (3) If you are complying with the applicable emissions limit with performance testing you must submit a compliance report with the information in (c)(5)(i) through (iii), (vi), (vii), (viii), (ix), (xi), (xiii), (xv), (xvii), (xviii) and paragraph (d) of this section.
- (4) If you are complying with an emissions limit using a CMS the compliance report must contain the information required in paragraphs (c)(5)(i) through (iii), (v), (vi), (xi) through (xiii), (xv) through (xviii), and paragraph (e) of this section.
- (5)
 - (i) Company and Facility name and address.
 - (ii) Process unit information, emissions limitations, and operating parameter limitations.
 - (iii) Date of report and beginning and ending dates of the reporting period.
 - (iv) The total operating time during the reporting period.
 - (v) If you use a CMS, including CEMS, COMS, or CPMS, you must include the monitoring equipment manufacturer(s) and model numbers and the date of the last CMS certification or audit.
 - (vi) The total fuel use by each individual boiler or process heater subject to an emission limit within the reporting period, including, but not limited to, a description of the fuel, whether the fuel has received a non-waste determination by the EPA or your basis for concluding that the fuel is not a waste, and the total fuel usage amount with units of measure.
 - (vii) If you are conducting performance tests once every 3 years consistent with § 63.7515(b) or (c), the date of the last 2 performance tests and a statement as to whether there have been any operational changes since the last performance test that could increase emissions.
 - (viii) A statement indicating that you burned no new types of fuel in an individual boiler or process heater subject to an emission limit. Or, if you did burn a new type of fuel and are subject to a HCl emission limit, you must submit the calculation of chlorine input, using Equation 7 of § 63.7530, that demonstrates that your source is still within its maximum chlorine input level established during the previous performance testing (for sources that demonstrate compliance through performance testing) or you must submit the calculation of HCl emission rate using Equation 16 of § 63.7530 that demonstrates that your source is still meeting the emission limit for HCl emissions (for boilers or process heaters that demonstrate compliance through fuel analysis). If you burned a new type of fuel and are subject to a mercury emission limit, you must submit the calculation of mercury input, using Equation 8 of § 63.7530, that demonstrates that your source is still within its maximum mercury input level established during the previous performance testing (for sources that demonstrate compliance through performance testing), or you must submit the calculation of mercury emission rate using Equation 17 of § 63.7530 that demonstrates that your source is still meeting the emission limit for mercury emissions (for boilers or process heaters that demonstrate compliance through fuel analysis). If you burned a new type of fuel and are subject to a TSM emission limit, you must submit the calculation of TSM input, using Equation 9 of § 63.7530, that demonstrates that your source is still within its maximum TSM input level established during the previous performance testing (for sources that demonstrate compliance through performance testing), or you must submit

the calculation of TSM emission rate, using Equation 18 of § 63.7530, that demonstrates that your source is still meeting the emission limit for TSM emissions (for boilers or process heaters that demonstrate compliance through fuel analysis).

- (ix) If you wish to burn a new type of fuel in an individual boiler or process heater subject to an emission limit and you cannot demonstrate compliance with the maximum chlorine input operating limit using Equation 7 of § 63.7530 or the maximum mercury input operating limit using Equation 8 of § 63.7530, or the maximum TSM input operating limit using Equation 9 of § 63.7530 you must include in the compliance report a statement indicating the intent to conduct a new performance test within 60 days of starting to burn the new fuel.
- (x) A summary of any monthly fuel analyses conducted to demonstrate compliance according to §§ 63.7521 and 63.7530 for individual boilers or process heaters subject to emission limits, and any fuel specification analyses conducted according to §§ 63.7521(f) and 63.7530(g).
- (xi) If there are no deviations from any emission limits or operating limits in this subpart that apply to you, a statement that there were no deviations from the emission limits or operating limits during the reporting period.
- (xii) If there were no deviations from the monitoring requirements including no periods during which the CMSs, including CEMS, COMS, and CPMS, were out of control as specified in § 63.8(c)(7), a statement that there were no deviations and no periods during which the CMS were out of control during the reporting period.
- (xiii) If a malfunction occurred during the reporting period, the report must include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by you during a malfunction of a boiler, process heater, or associated air pollution control device or CMS to minimize emissions in accordance with § 63.7500(a)(3), including actions taken to correct the malfunction.
- (xiv) Include the date of the most recent tune-up for each unit subject to only the requirement to conduct an annual, biennial, or 5-year tune-up according to § 63.7540(a)(10), (11), or (12) respectively. Include the date of the most recent burner inspection if it was not done annually, biennially, or on a 5-year period and was delayed until the next scheduled or unscheduled unit shutdown.
- (xv) If you plan to demonstrate compliance by emission averaging, certify the emission level achieved or the control technology employed is no less stringent than the level or control technology contained in the notification of compliance status in § 63.7545(e)(5)(i).
- (xvi) For each reporting period, the compliance reports must include all of the calculated 30 day rolling average values for CEMS (CO, HCl, SO₂, and mercury), 10 day rolling average values for CO CEMS when the limit is expressed as a 10 day instead of 30 day rolling average, and the PM CPMS data.
- (xvii) Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.
- (xviii) For each instance of startup or shutdown include the information required to be monitored, collected, or recorded according to the requirements of § 63.7555(d).

- (d) For each deviation from an emission limit or operating limit in this subpart that occurs at an individual boiler or process heater where you are not using a CMS to comply with that emission limit or operating limit, or from the work practice standards for periods of startup and shutdown, the compliance report must additionally contain the information required in paragraphs (d)(1) through (3) of this section.
 - (1) A description of the deviation and which emission limit, operating limit, or work practice standard from which you deviated.
 - (2) Information on the number, duration, and cause of deviations (including unknown cause), as applicable, and the corrective action taken.
 - (3) If the deviation occurred during an annual performance test, provide the date the annual performance test was completed.
- (e) For each deviation from an emission limit, operating limit, and monitoring requirement in this subpart occurring at an individual boiler or process heater where you are using a CMS to comply with that emission limit or operating limit, the compliance report must additionally contain the information required in paragraphs (e)(1) through (9) of this section. This includes any deviations from your site-specific monitoring plan as required in § 63.7505(d).
 - (1) The date and time that each deviation started and stopped and description of the nature of the deviation (i.e., what you deviated from).
 - (2) The date and time that each CMS was inoperative, except for zero (low-level) and high-level checks.
 - (3) The date, time, and duration that each CMS was out of control, including the information in § 63.8(c)(8).
 - (4) The date and time that each deviation started and stopped.
 - (5) A summary of the total duration of the deviation during the reporting period and the total duration as a percent of the total source operating time during that reporting period.
 - (6) A characterization of the total duration of the deviations during the reporting period into those that are due to control equipment problems, process problems, other known causes, and other unknown causes.
 - (7) A summary of the total duration of CMS's downtime during the reporting period and the total duration of CMS downtime as a percent of the total source operating time during that reporting period.
 - (8) A brief description of the source for which there was a deviation.
 - (9) A description of any changes in CMSs, processes, or controls since the last reporting period for the source for which there was a deviation.
- (f)-(g) [Reserved]
- (h) You must submit the reports according to the procedures specified in paragraphs (h)(1) through (3) of this section.
 - (1) Within 60 days after the date of completing each performance test (as defined in § 63.2) required by this subpart, you must submit the results of the performance tests, including any fuel analyses, following the procedure specified in either paragraph (h)(1)(i) or (ii) of this section.

- (i) For data collected using test methods supported by the EPA's Electronic Reporting Tool (ERT) as listed on the EPA's ERT Web site (<http://www.epa.gov/ttn/chief/ert/index.html>), you must submit the results of the performance test to the EPA via the Compliance and Emissions Data Reporting Interface (CEDRI). (CEDRI can be accessed through the EPA's Central Data Exchange (CDX) (<https://cdx.epa.gov/>.) Performance test data must be submitted in a file format generated through use of the EPA's ERT or an electronic file format consistent with the extensible markup language (XML) schema listed on the EPA's ERT Web site. If you claim that some of the performance test information being submitted is confidential business information (CBI), you must submit a complete file generated through the use of the EPA's ERT or an alternate electronic file consistent with the XML schema listed on the EPA's ERT Web site, including information claimed to be CBI, on a compact disc, flash drive, or other commonly used electronic storage media to the EPA. The electronic media must be clearly marked as CBI and mailed to U.S. EPA/OAPQS/CORE CBI Office, Attention: Group Leader, Measurement Policy Group, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. The same ERT or alternate file with the CBI omitted must be submitted to the EPA via the EPA's CDX as described earlier in this paragraph.
 - (ii) For data collected using test methods that are not supported by the EPA's ERT as listed on the EPA's ERT Web site at the time of the test, you must submit the results of the performance test to the Administrator at the appropriate address listed in § 63.13.
- (2) Within 60 days after the date of completing each CEMS performance evaluation (as defined in 63.2), you must submit the results of the performance evaluation following the procedure specified in either paragraph (h)(2)(i) or (ii) of this section.
- (i) For performance evaluations of continuous monitoring systems measuring relative accuracy test audit (RATA) pollutants that are supported by the EPA's ERT as listed on the EPA's ERT Web site at the time of the evaluation, you must submit the results of the performance evaluation to the EPA via the CEDRI. (CEDRI can be accessed through the EPA's CDX.) Performance evaluation data must be submitted in a file format generated through the use of the EPA's ERT or an alternate file format consistent with the XML schema listed on the EPA's ERT Web site. If you claim that some of the performance evaluation information being transmitted is CBI, you must submit a complete file generated through the use of the EPA's ERT or an alternate electronic file consistent with the XML schema listed on the EPA's ERT Web site, including information claimed to be CBI, on a compact disc, flash drive, or other commonly used electronic storage media to the EPA. The electronic media must be clearly marked as CBI and mailed to U.S. EPA/OAPQS/CORE CBI Office, Attention: Group Leader, Measurement Policy Group, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. The same ERT or alternate file with the CBI omitted must be submitted to the EPA via the EPA's CDX as described earlier in this paragraph.
 - (ii) For any performance evaluations of continuous monitoring systems measuring RATA pollutants that are not supported by the EPA's ERT as listed on the ERT Web site at the time of the evaluation, you must submit the results of the performance evaluation to the Administrator at the appropriate address listed in § 63.13.
- (3) You must submit all reports required by Table 9 of this subpart electronically to the EPA via the CEDRI. (CEDRI can be accessed through the EPA's CDX.) You must use the appropriate electronic report in CEDRI for this subpart. Instead of using the electronic report in CEDRI for this subpart, you may submit an alternate electronic file consistent with the XML schema listed on the CEDRI Web site

(<http://www.epa.gov/ttn/chief/cedri/index.html>), once the XML schema is available. If the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, you must submit the report to the Administrator at the appropriate address listed in § 63.13. You must begin submitting reports via CEDRI no later than 90 days after the form becomes available in CEDRI.

[78 FR 7183, Jan. 31, 2013, as amended at 80 FR 72814, Nov. 20, 2015]

§ 63.7555 What records must I keep?

- (a) You must keep records according to paragraphs (a)(1) and (2) of this section.
 - (1) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status or semiannual compliance report that you submitted, according to the requirements in § 63.10(b)(2)(xiv).
 - (2) Records of performance tests, fuel analyses, or other compliance demonstrations and performance evaluations as required in § 63.10(b)(2)(viii).
 - (3) For units in the limited use subcategory, you must keep a copy of the federally enforceable permit that limits the annual capacity factor to less than or equal to 10 percent and fuel use records for the days the boiler or process heater was operating.
- (b) For each CEMS, COMS, and continuous monitoring system you must keep records according to paragraphs (b)(1) through (5) of this section.
 - (1) Records described in § 63.10(b)(2)(vii) through (xi).
 - (2) Monitoring data for continuous opacity monitoring system during a performance evaluation as required in § 63.6(h)(7)(i) and (ii).
 - (3) Previous (*i.e.*, superseded) versions of the performance evaluation plan as required in § 63.8(d)(3).
 - (4) Request for alternatives to relative accuracy test for CEMS as required in § 63.8(f)(6)(i).
 - (5) Records of the date and time that each deviation started and stopped.
- (c) You must keep the records required in Table 8 to this subpart including records of all monitoring data and calculated averages for applicable operating limits, such as opacity, pressure drop, pH, and operating load, to show continuous compliance with each emission limit and operating limit that applies to you.
- (d) For each boiler or process heater subject to an emission limit in Table 1 or 2 or Tables 11 through 15 to this subpart, you must also keep the applicable records in paragraphs (d)(1) through (11) of this section.
 - (1) You must keep records of monthly fuel use by each boiler or process heater, including the type(s) of fuel and amount(s) used.
 - (2) If you combust non-hazardous secondary materials that have been determined not to be solid waste pursuant to § 241.3(b)(1) and (2) of this chapter, you must keep a record that documents how the secondary material meets each of the legitimacy criteria under § 241.3(d)(1) of this chapter. If you combust a fuel that has been processed from a discarded non-hazardous secondary material pursuant to § 241.3(b)(4) of this chapter, you must keep records as to how the operations that produced the fuel satisfy the definition of processing in § 241.2 of this chapter. If the fuel received a non-waste determination pursuant to the petition process submitted under § 241.3(c) of this

chapter, you must keep a record that documents how the fuel satisfies the requirements of the petition process. For operating units that combust non-hazardous secondary materials as fuel per § 241.4 of this chapter, you must keep records documenting that the material is listed as a non-waste under § 241.4(a) of this chapter. Units exempt from the incinerator standards under section 129(g)(1) of the Clean Air Act because they are qualifying facilities burning a homogeneous waste stream do not need to maintain the records described in this paragraph (d)(2).

- (3) A copy of all calculations and supporting documentation of maximum chlorine fuel input, using Equation 7 of § 63.7530, that were done to demonstrate continuous compliance with the HCl emission limit, for sources that demonstrate compliance through performance testing. For sources that demonstrate compliance through fuel analysis, a copy of all calculations and supporting documentation of HCl emission rates, using Equation 16 of § 63.7530, that were done to demonstrate compliance with the HCl emission limit. Supporting documentation should include results of any fuel analyses and basis for the estimates of maximum chlorine fuel input or HCl emission rates. You can use the results from one fuel analysis for multiple boilers and process heaters provided they are all burning the same fuel type. However, you must calculate chlorine fuel input, or HCl emission rate, for each boiler and process heater.
- (4) A copy of all calculations and supporting documentation of maximum mercury fuel input, using Equation 8 of § 63.7530, that were done to demonstrate continuous compliance with the mercury emission limit for sources that demonstrate compliance through performance testing. For sources that demonstrate compliance through fuel analysis, a copy of all calculations and supporting documentation of mercury emission rates, using Equation 17 of § 63.7530, that were done to demonstrate compliance with the mercury emission limit. Supporting documentation should include results of any fuel analyses and basis for the estimates of maximum mercury fuel input or mercury emission rates. You can use the results from one fuel analysis for multiple boilers and process heaters provided they are all burning the same fuel type. However, you must calculate mercury fuel input, or mercury emission rates, for each boiler and process heater.
- (5) If, consistent with § 63.7515(b), you choose to stack test less frequently than annually, you must keep a record that documents that your emissions in the previous stack test(s) were less than 75 percent of the applicable emission limit (or, in specific instances noted in Tables 1 and 2 or 11 through 15 to this subpart, less than the applicable emission limit), and document that there was no change in source operations including fuel composition and operation of air pollution control equipment that would cause emissions of the relevant pollutant to increase within the past year.
- (6) Records of the occurrence and duration of each malfunction of the boiler or process heater, or of the associated air pollution control and monitoring equipment.
- (7) Records of actions taken during periods of malfunction to minimize emissions in accordance with the general duty to minimize emissions in § 63.7500(a)(3), including corrective actions to restore the malfunctioning boiler or process heater, air pollution control, or monitoring equipment to its normal or usual manner of operation.
- (8) A copy of all calculations and supporting documentation of maximum TSM fuel input, using Equation 9 of § 63.7530, that were done to demonstrate continuous compliance with the TSM emission limit for sources that demonstrate compliance through performance testing. For sources that demonstrate compliance through fuel analysis, a copy of all calculations and supporting documentation of TSM emission rates, using Equation 18 of § 63.7530, that were done to demonstrate compliance with the TSM emission limit. Supporting documentation should include results of any fuel analyses and basis for the estimates of maximum TSM fuel input or TSM

emission rates. You can use the results from one fuel analysis for multiple boilers and process heaters provided they are all burning the same fuel type. However, you must calculate TSM fuel input, or TSM emission rates, for each boiler and process heater.

- (9) You must maintain records of the calendar date, time, occurrence and duration of each startup and shutdown.
- (10) You must maintain records of the type(s) and amount(s) of fuels used during each startup and shutdown.
- (11) For each startup period, for units selecting paragraph (2) of the definition of "startup" in § 63.7575 you must maintain records of the time that clean fuel combustion begins; the time when you start feeding fuels that are not clean fuels; the time when useful thermal energy is first supplied; and the time when the PM controls are engaged.
- (12) If you choose to rely on paragraph (2) of the definition of "startup" in § 63.7575, for each startup period, you must maintain records of the hourly steam temperature, hourly steam pressure, hourly steam flow, hourly flue gas temperature, and all hourly average CMS data (e.g., CEMS, PM CPMS, COMS, ESP total secondary electric power input, scrubber pressure drop, scrubber liquid flow rate) collected during each startup period to confirm that the control devices are engaged. In addition, if compliance with the PM emission limit is demonstrated using a PM control device, you must maintain records as specified in paragraphs (d)(12)(i) through (iii) of this section.
 - (i) For a boiler or process heater with an electrostatic precipitator, record the number of fields in service, as well as each field's secondary voltage and secondary current during each hour of startup.
 - (ii) For a boiler or process heater with a fabric filter, record the number of compartments in service, as well as the differential pressure across the baghouse during each hour of startup.
 - (iii) For a boiler or process heater with a wet scrubber needed for filterable PM control, record the scrubber's liquid flow rate and the pressure drop during each hour of startup.
- (13) If you choose to use paragraph (2) of the definition of "startup" in § 63.7575 and you find that you are unable to safely engage and operate your PM control(s) within 1 hour of first firing of non-clean fuels, you may choose to rely on paragraph (1) of definition of "startup" in § 63.7575 or you may submit to the delegated permitting authority a request for a variance with the PM controls requirement, as described below.
 - (i) The request shall provide evidence of a documented manufacturer-identified safety issue.
 - (ii) The request shall provide information to document that the PM control device is adequately designed and sized to meet the applicable PM emission limit.
 - (iii) In addition, the request shall contain documentation that:
 - (A) The unit is using clean fuels to the maximum extent possible to bring the unit and PM control device up to the temperature necessary to alleviate or prevent the identified safety issues prior to the combustion of primary fuel;
 - (B) The unit has explicitly followed the manufacturer's procedures to alleviate or prevent the identified safety issue; and
 - (C) Identifies with specificity the details of the manufacturer's statement of concern.

- (iv) You must comply with all other work practice requirements, including but not limited to data collection, recordkeeping, and reporting requirements.
- (e) If you elect to average emissions consistent with § 63.7522, you must additionally keep a copy of the emission averaging implementation plan required in § 63.7522(g), all calculations required under § 63.7522, including monthly records of heat input or steam generation, as applicable, and monitoring records consistent with § 63.7541.
- (f) If you elect to use efficiency credits from energy conservation measures to demonstrate compliance according to § 63.7533, you must keep a copy of the Implementation Plan required in § 63.7533(d) and copies of all data and calculations used to establish credits according to § 63.7533(b), (c), and (f).
- (g) If you elected to demonstrate that the unit meets the specification for mercury for the unit designed to burn gas 1 subcategory, you must maintain monthly records (or at the frequency required by § 63.7540(c)) of the calculations and results of the fuel specification for mercury in Table 6.
- (h) If you operate a unit in the unit designed to burn gas 1 subcategory that is subject to this subpart, and you use an alternative fuel other than natural gas, refinery gas, gaseous fuel subject to another subpart under this part, other gas 1 fuel, or gaseous fuel subject to another subpart of this part or part 60, 61, or 65, you must keep records of the total hours per calendar year that alternative fuel is burned and the total hours per calendar year that the unit operated during periods of gas curtailment or gas supply emergencies.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7185, Jan. 31, 2013; 80 FR 72816, Nov. 20, 2015; 87 FR 60846, Oct. 6, 2022]

§ 63.7560 In what form and how long must I keep my records?

- (a) Your records must be in a form suitable and readily available for expeditious review, according to § 63.10(b)(1).
- (b) As specified in § 63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.
- (c) You must keep each record on site, or they must be accessible from on site (for example, through a computer network), for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to § 63.10(b)(1). You can keep the records off site for the remaining 3 years.

OTHER REQUIREMENTS AND INFORMATION

§ 63.7565 What parts of the General Provisions apply to me?

Table 10 to this subpart shows which parts of the General Provisions in §§ 63.1 through 63.15 apply to you.

§ 63.7570 Who implements and enforces this subpart?

- (a) This subpart can be implemented and enforced by the EPA, or an Administrator such as your state, local, or tribal agency. If the EPA Administrator has delegated authority to your state, local, or tribal agency, then that agency (as well as the EPA) has the authority to implement and enforce this subpart. You should contact your EPA Regional Office to find out if this subpart is delegated to your state, local, or tribal agency.

- (b) In delegating implementation and enforcement authority of this subpart to a state, local, or tribal agency under 40 CFR part 63, subpart E, the authorities listed in paragraphs (b)(1) through (4) of this section are retained by the EPA Administrator and are not transferred to the state, local, or tribal agency, however, the EPA retains oversight of this subpart and can take enforcement actions, as appropriate.
 - (1) Approval of alternatives to the emission limits and work practice standards in § 63.7500(a) and (b) under § 63.6(g), except as specified in § 63.7555(d)(13).
 - (2) Approval of major change to test methods in Table 5 to this subpart under § 63.7(e)(2)(ii) and (f) and as defined in § 63.90, and alternative analytical methods requested under § 63.7521(b)(2).
 - (3) Approval of major change to monitoring under § 63.8(f) and as defined in § 63.90, and approval of alternative operating parameters under §§ 63.7500(a)(2) and 63.7522(g)(2).
 - (4) Approval of major change to recordkeeping and reporting under § 63.10(e) and as defined in § 63.90.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7186, Jan. 31, 2013; 80 FR 72817, Nov. 20, 2015]

§ 63.7575 What definitions apply to this subpart?

Terms used in this subpart are defined in the Clean Air Act, in § 63.2 (the General Provisions), and in this section as follows:

10-day rolling average means the arithmetic mean of the previous 240 hours of valid operating data. Valid data excludes hours during startup and shutdown, data collected during periods when the monitoring system is out of control as specified in your site-specific monitoring plan, while conducting repairs associated with periods when the monitoring system is out of control, or while conducting required monitoring system quality assurance or quality control activities, and periods when this unit is not operating. The 240 hours should be consecutive, but not necessarily continuous if operations were intermittent.

12-month rolling average means the arithmetic mean of the previous 12 months of valid fuel analysis data. The 12 months should be consecutive, but not necessarily continuous if operations were intermittent.

30-day rolling average means the arithmetic mean of the previous 720 hours of valid CO CEMS data. The 720 hours should be consecutive, but not necessarily continuous if operations were intermittent. For parameters other than CO, 30-day rolling average means either the arithmetic mean of all valid hours of data from 30 successive operating days or the arithmetic mean of the previous 720 hours of valid operating data. Valid data excludes hours during startup and shutdown, data collected during periods when the monitoring system is out of control as specified in your site-specific monitoring plan, while conducting repairs associated with periods when the monitoring system is out of control, or while conducting required monitoring system quality assurance or quality control activities, and periods when this unit is not operating.

Annual capacity factor means the ratio between the actual heat input to a boiler or process heater from the fuels burned during a calendar year and the potential heat input to the boiler or process heater had it been operated for 8,760 hours during a year at the maximum steady state design heat input capacity.

Annual heat input means the heat input for the 12 months preceding the compliance demonstration.

Average annual heat input rate means total heat input divided by the hours of operation for the 12 months preceding the compliance demonstration.

Bag leak detection system means a group of instruments that are capable of monitoring particulate matter loadings in the exhaust of a fabric filter (i.e., baghouse) in order to detect bag failures. A bag leak detection system includes, but is not limited to, an instrument that operates on electrodynamic, triboelectric, light scattering, light transmittance, or other principle to monitor relative particulate matter loadings.

Benchmark means the fuel heat input for a boiler or process heater for the one-year period before the date that an energy demand reduction occurs, unless it can be demonstrated that a different time period is more representative of historical operations.

Biodiesel means a mono-alkyl ester derived from biomass and conforming to ASTM D6751-11b, Standard Specification for Biodiesel Fuel Blend Stock (B100) for Middle Distillate Fuels (incorporated by reference, see § 63.14).

Biomass or bio-based solid fuel means any biomass-based solid fuel that is not a solid waste. This includes, but is not limited to, wood residue; wood products (e.g., trees, tree stumps, tree limbs, bark, lumber, sawdust, sander dust, chips, scraps, slabs, millings, and shavings); animal manure, including litter and other bedding materials; vegetative agricultural and silvicultural materials, such as logging residues (slash), nut and grain hulls and chaff (e.g., almond, walnut, peanut, rice, and wheat), bagasse, orchard prunings, corn stalks, coffee bean hulls and grounds. This definition of biomass is not intended to suggest that these materials are or are not solid waste.

Blast furnace gas fuel-fired boiler or process heater means an industrial/commercial/institutional boiler or process heater that receives 90 percent or more of its total annual gas volume from blast furnace gas.

Boiler means an enclosed device using controlled flame combustion and having the primary purpose of recovering thermal energy in the form of steam or hot water. Controlled flame combustion refers to a steady-state, or near steady-state, process wherein fuel and/or oxidizer feed rates are controlled. A device combusting solid waste, as defined in § 241.3 of this chapter, is not a boiler unless the device is exempt from the definition of a solid waste incineration unit as provided in section 129(g)(1) of the Clean Air Act. Waste heat boilers are excluded from this definition.

Boiler system means the boiler and associated components, such as, the feed water system, the combustion air system, the fuel system (including burners), blowdown system, combustion control systems, steam systems, and condensate return systems.

Calendar year means the period between January 1 and December 31, inclusive, for a given year.

Clean dry biomass means any biomass-based solid fuel that have not been painted, pigment-stained, or pressure treated, does not contain contaminants at concentrations not normally associated with virgin biomass materials and has a moisture content of less than 20 percent and is not a solid waste.

Coal means all solid fuels classifiable as anthracite, bituminous, sub-bituminous, or lignite by ASTM D388 (incorporated by reference, see § 63.14), coal refuse, and petroleum coke. For the purposes of this subpart, this definition of “coal” includes synthetic fuels derived from coal, including but not limited to, solvent-refined coal, coal-oil mixtures, and coal-water mixtures. Coal derived gases are excluded from this definition.

Coal refuse means any by-product of coal mining or coal cleaning operations with an ash content greater than 50 percent (by weight) and a heating value less than 13,900 kilojoules per kilogram (6,000 Btu per pound) on a dry basis.

Commercial/institutional boiler means a boiler used in commercial establishments or institutional establishments such as medical centers, nursing homes, research centers, institutions of higher education, elementary and secondary schools, libraries, religious establishments, governmental buildings, hotels, restaurants, and laundries to provide electricity, steam, and/or hot water.

Common stack means the exhaust of emissions from two or more affected units through a single flue. Affected units with a common stack may each have separate air pollution control systems located before the common stack, or may have a single air pollution control system located after the exhausts come together in a single flue.

Cost-effective energy conservation measure means a measure that is implemented to improve the energy efficiency of the boiler or facility that has a payback (return of investment) period of 2 years or less.

Daily block average means the arithmetic mean of all valid emission concentrations or parameter levels recorded when a unit is operating measured over the 24-hour period from 12 a.m. (midnight) to 12 a.m. (midnight), except for periods of startup and shutdown or downtime.

Deviation.

- (1) **Deviation** means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:
 - (i) Fails to meet any applicable requirement or obligation established by this subpart including, but not limited to, any emission limit, operating limit, or work practice standard; or
 - (ii) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit.
- (2) A deviation is not always a violation.

Dioxins/furans means tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans.

Distillate oil means fuel oils that contain 0.05 weight percent nitrogen or less and comply with the specifications for fuel oil numbers 1 and 2, as defined by the American Society of Testing and Materials in ASTM D396 (incorporated by reference, see § 63.14) or diesel fuel oil numbers 1 and 2, as defined by the American Society for Testing and Materials in ASTM D975 (incorporated by reference, see § 63.14), kerosene, and biodiesel as defined by the American Society of Testing and Materials in ASTM D6751-11b (incorporated by reference, see § 60.14).

Dry scrubber means an add-on air pollution control system that injects dry alkaline sorbent (dry injection) or sprays an alkaline sorbent (spray dryer) to react with and neutralize acid gas in the exhaust stream forming a dry powder material. Sorbent injection systems used as control devices in fluidized bed boilers and process heaters are included in this definition. A dry scrubber is a dry control system.

Dutch oven means a unit having a refractory-walled cell connected to a conventional boiler setting. Fuel materials are introduced through an opening in the roof of the dutch oven and burn in a pile on its floor. Fluidized bed boilers are not part of the dutch oven design category.

Efficiency credit means emission reductions above those required by this subpart. Efficiency credits generated may be used to comply with the emissions limits. Credits may come from pollution prevention projects that result in reduced fuel use by affected units. Boilers that are shut down cannot be used to generate credits unless the facility provides documentation linking the permanent shutdown to implementation of the energy conservation measures identified in the energy assessment.

Electric utility steam generating unit (EGU) means a fossil fuel-fired combustion unit of more than 25 megawatts electric (MWe) that serves a generator that produces electricity for sale. A fossil fuel-fired unit that cogenerates steam and electricity and supplies more than one-third of its potential electric output capacity and more than 25 MWe output to any utility power distribution system for sale is considered an electric utility steam generating unit. To be "capable of combusting" fossil fuels, an EGU would need to have these fuels allowed in their operating permits and have the appropriate fuel handling facilities on-site or otherwise available (e.g., coal handling equipment, including coal storage area, belts and conveyers, pulverizers, etc.; oil storage facilities). In addition, fossil fuel-fired EGU means any EGU that fired fossil fuel for more than 10.0 percent of the average annual heat input in any 3 consecutive calendar years or for more than 15.0 percent of the annual heat input during any one calendar year after April 16, 2012.

Electrostatic precipitator (ESP) means an add-on air pollution control device used to capture particulate matter by charging the particles using an electrostatic field, collecting the particles using a grounded collecting surface, and transporting the particles into a hopper. An electrostatic precipitator is usually a dry control system.

Energy assessment means the following for the emission units covered by this subpart:

- (1) The energy assessment for facilities with affected boilers and process heaters with a combined heat input capacity of less than 0.3 trillion Btu (TBtu) per year will be 8 on-site technical labor hours in length maximum, but may be longer at the discretion of the owner or operator of the affected source. The boiler system(s), process heater(s), and any on-site energy use system(s) accounting for at least 50 percent of the affected boiler(s) energy (e.g., steam, hot water, process heat, or electricity) production, as applicable, will be evaluated to identify energy savings opportunities, within the limit of performing an 8-hour on-site energy assessment.
- (2) The energy assessment for facilities with affected boilers and process heaters with a combined heat input capacity of 0.3 to 1.0 TBtu/year will be 24 on-site technical labor hours in length maximum, but may be longer at the discretion of the owner or operator of the affected source. The boiler system(s), process heater(s), and any on-site energy use system(s) accounting for at least 33 percent of the energy (e.g., steam, hot water, process heat, or electricity) production, as applicable, will be evaluated to identify energy savings opportunities, within the limit of performing a 24-hour on-site energy assessment.
- (3) The energy assessment for facilities with affected boilers and process heaters with a combined heat input capacity greater than 1.0 TBtu/year will be up to 24 on-site technical labor hours in length for the first TBtu/yr plus 8 on-site technical labor hours for every additional 1.0 TBtu/yr not to exceed 160 on-site technical hours, but may be longer at the discretion of the owner or operator of the affected source. The boiler system(s), process heater(s), and any on-site energy use system(s) accounting for at least 20 percent of the energy (e.g., steam, process heat, hot water, or electricity) production, as applicable, will be evaluated to identify energy savings opportunities.
- (4) The on-site energy use systems serving as the basis for the percent of affected boiler(s) and process heater(s) energy production in paragraphs (1), (2), and (3) of this definition may be segmented by production area or energy use area as most logical and applicable to the specific facility being assessed (e.g., product X manufacturing area; product Y drying area; Building Z).

Energy management practices means the set of practices and procedures designed to manage energy use that are demonstrated by the facility's energy policies, a facility energy manager and other staffing responsibilities, energy performance measurement and tracking methods, an energy saving goal, action plans, operating procedures, internal reporting requirements, and periodic review intervals used at the facility.

Energy management program means a program that includes a set of practices and procedures designed to manage energy use that are demonstrated by the facility's energy policies, a facility energy manager and other staffing responsibilities, energy performance measurement and tracking methods, an energy saving goal, action plans, operating procedures, internal reporting requirements, and periodic review intervals used at the facility. Facilities may establish their program through energy management systems compatible with ISO 50001.

Energy use system includes the following systems located on-site that use energy (steam, hot water, or electricity) provided by the affected boiler or process heater: process heating; compressed air systems; machine drive (motors, pumps, fans); process cooling; facility heating, ventilation, and air-conditioning systems; hot water systems; building envelop; and lighting; or other systems that use steam, hot water, process heat, or electricity provided by the affected boiler or process heater. Energy use systems are only those systems using energy clearly produced by affected boilers and process heaters.

Equivalent means the following only as this term is used in Table 6 to this subpart:

- (1) An equivalent sample collection procedure means a published voluntary consensus standard or practice (VCS) or EPA method that includes collection of a minimum of three composite fuel samples, with each composite consisting of a minimum of three increments collected at approximately equal intervals over the test period.
- (2) An equivalent sample compositing procedure means a published VCS or EPA method to systematically mix and obtain a representative subsample (part) of the composite sample.
- (3) An equivalent sample preparation procedure means a published VCS or EPA method that: Clearly states that the standard, practice or method is appropriate for the pollutant and the fuel matrix; or is cited as an appropriate sample preparation standard, practice or method for the pollutant in the chosen VCS or EPA determinative or analytical method.
- (4) An equivalent procedure for determining heat content means a published VCS or EPA method to obtain gross calorific (or higher heating) value.
- (5) An equivalent procedure for determining fuel moisture content means a published VCS or EPA method to obtain moisture content. If the sample analysis plan calls for determining metals (especially the mercury, selenium, or arsenic) using an aliquot of the dried sample, then the drying temperature must be modified to prevent vaporizing these metals. On the other hand, if metals analysis is done on an “as received” basis, a separate aliquot can be dried to determine moisture content and the metals concentration mathematically adjusted to a dry basis.
- (6) An equivalent pollutant (mercury, HCl) determinative or analytical procedure means a published VCS or EPA method that clearly states that the standard, practice, or method is appropriate for the pollutant and the fuel matrix and has a published detection limit equal or lower than the methods listed in Table 6 to this subpart for the same purpose.

Fabric filter means an add-on air pollution control device used to capture particulate matter by filtering gas streams through filter media, also known as a baghouse. A fabric filter is a dry control system.

Federally enforceable means all limitations and conditions that are enforceable by the EPA Administrator, including, but not limited to, the requirements of 40 CFR parts 60, 61, 63, and 65, requirements within any applicable state implementation plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 40 CFR 51.24.

Fluidized bed boiler means a boiler utilizing a fluidized bed combustion process that is not a pulverized coal boiler.

Fluidized bed boiler with an integrated fluidized bed heat exchanger means a boiler utilizing a fluidized bed combustion where the entire tube surface area is located outside of the furnace section at the exit of the cyclone section and exposed to the flue gas stream for conductive heat transfer. This design applies only to boilers in the unit designed to burn coal/solid fossil fuel subcategory that fire coal refuse.

Fluidized bed combustion means a process where a fuel is burned in a bed of granulated particles, which are maintained in a mobile suspension by the forward flow of air and combustion products.

Fossil fuel means natural gas, oil, coal, and any form of solid, liquid, or gaseous fuel derived from such material.

Fuel cell means a boiler type in which the fuel is dropped onto suspended fixed grates and is fired in a pile. The refractory-lined fuel cell uses combustion air preheating and positioning of secondary and tertiary air injection ports to improve boiler efficiency. Fluidized bed, dutch oven, pile burner, hybrid suspension grate, and suspension burners are not part of the fuel cell subcategory.

Fuel type means each category of fuels that share a common name or classification. Examples include, but are not limited to, bituminous coal, sub-bituminous coal, lignite, anthracite, biomass, distillate oil, residual oil. Individual fuel types received from different suppliers are not considered new fuel types.

Gaseous fuel includes, but is not limited to, natural gas, process gas, landfill gas, coal derived gas, refinery gas, and biogas. Blast furnace gas and process gases that are regulated under another subpart of this part, or part 60, part 61, or part 65 of this chapter, are exempted from this definition.

Heat input means heat derived from combustion of fuel in a boiler or process heater and does not include the heat input from preheated combustion air, recirculated flue gases, returned condensate, or exhaust gases from other sources such as gas turbines, internal combustion engines, kilns, etc.

Heavy liquid includes residual oil and any other liquid fuel not classified as a light liquid.

Hourly average means the arithmetic average of at least four CMS data values representing the four 15-minute periods in an hour, or at least two 15-minute data values during an hour when CMS calibration, quality assurance, or maintenance activities are being performed.

Hot water heater means a closed vessel with a capacity of no more than 120 U.S. gallons in which water is heated by combustion of gaseous, liquid, or biomass/bio-based solid fuel and is withdrawn for use external to the vessel. Hot water boilers (i.e., not generating steam) combusting gaseous, liquid, or biomass fuel with a heat input capacity of less than 1.6 million Btu per hour are included in this definition. The 120 U.S. gallon capacity threshold to be considered a hot water heater is independent of the 1.6 MMBtu/hr heat input capacity threshold for hot water boilers. Hot water heater also means a tankless unit that provides on demand hot water.

Hybrid suspension grate boiler means a boiler designed with air distributors to spread the fuel material over the entire width and depth of the boiler combustion zone. The biomass fuel combusted in these units exceeds a moisture content of 40 percent on an as-fired annual heat input basis as demonstrated by

monthly fuel analysis. The drying and much of the combustion of the fuel takes place in suspension, and the combustion is completed on the grate or floor of the boiler. Fluidized bed, dutch oven, and pile burner designs are not part of the hybrid suspension grate boiler design category.

Industrial boiler means a boiler used in manufacturing, processing, mining, and refining or any other industry to provide steam, hot water, and/or electricity.

Light liquid includes distillate oil, biodiesel, or vegetable oil.

Limited-use boiler or process heater means any boiler or process heater that burns any amount of solid, liquid, or gaseous fuels and has a federally enforceable annual capacity factor of no more than 10 percent.

Liquid fuel includes, but is not limited to, light liquid, heavy liquid, any form of liquid fuel derived from petroleum, used oil, liquid biofuels, biodiesel, and vegetable oil.

Load fraction means the actual heat input of a boiler or process heater divided by heat input during the performance test that established the minimum sorbent injection rate or minimum activated carbon injection rate, expressed as a fraction (e.g., for 50 percent load the load fraction is 0.5). For boilers and process heaters that co-fire natural gas or refinery gas with a solid or liquid fuel, the load fraction is determined by the actual heat input of the solid or liquid fuel divided by heat input of the solid or liquid fuel fired during the performance test (e.g., if the performance test was conducted at 100 percent solid fuel firing, for 100 percent load firing 50 percent solid fuel and 50 percent natural gas the load fraction is 0.5).

Major source for oil and natural gas production facilities, as used in this subpart, shall have the same meaning as in § 63.2, except that:

- (1) Emissions from any oil or gas exploration or production well (with its associated equipment, as defined in this section), and emissions from any pipeline compressor station or pump station shall not be aggregated with emissions from other similar units to determine whether such emission points or stations are major sources, even when emission points are in a contiguous area or under common control;
- (2) Emissions from processes, operations, or equipment that are not part of the same facility, as defined in this section, shall not be aggregated; and
- (3) For facilities that are production field facilities, only HAP emissions from glycol dehydration units and storage vessels with the potential for flash emissions shall be aggregated for a major source determination. For facilities that are not production field facilities, HAP emissions from all HAP emission units shall be aggregated for a major source determination.

Metal process furnaces are a subcategory of process heaters, as defined in this subpart, which include natural gas-fired annealing furnaces, preheat furnaces, reheat furnaces, aging furnaces, heat treat furnaces, and homogenizing furnaces.

Million Btu (MMBtu) means one million British thermal units.

Minimum activated carbon injection rate means load fraction multiplied by the lowest hourly average activated carbon injection rate measured according to Table 7 to this subpart during the most recent performance test demonstrating compliance with the applicable emission limit.

Minimum oxygen level means the lowest hourly average oxygen level measured according to Table 7 to this subpart during the most recent performance test demonstrating compliance with the applicable emission limit.

Minimum pressure drop means the lowest hourly average pressure drop measured according to Table 7 to this subpart during the most recent performance test demonstrating compliance with the applicable emission limit.

Minimum scrubber effluent pH means the lowest hourly average sorbent liquid pH measured at the inlet to the wet scrubber according to Table 7 to this subpart during the most recent performance test demonstrating compliance with the applicable hydrogen chloride emission limit.

Minimum scrubber liquid flow rate means the lowest hourly average liquid flow rate (e.g., to the PM scrubber or to the acid gas scrubber) measured according to Table 7 to this subpart during the most recent performance stack test demonstrating compliance with the applicable emission limit.

Minimum scrubber pressure drop means the lowest hourly average scrubber pressure drop measured according to Table 7 to this subpart during the most recent performance test demonstrating compliance with the applicable emission limit.

Minimum sorbent injection rate means:

- (1) The load fraction multiplied by the lowest hourly average sorbent injection rate for each sorbent measured according to Table 7 to this subpart during the most recent performance test demonstrating compliance with the applicable emission limits; or
- (2) For fluidized bed combustion not using an acid gas wet scrubber or dry sorbent injection control technology to comply with the HCl emission limit, the lowest average ratio of sorbent to sulfur measured during the most recent performance test.

Minimum total secondary electric power means the lowest hourly average total secondary electric power determined from the values of secondary voltage and secondary current to the electrostatic precipitator measured according to Table 7 to this subpart during the most recent performance test demonstrating compliance with the applicable emission limits.

Natural gas means:

- (1) A naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane; or
- (2) Liquefied petroleum gas, as defined in ASTM D1835 (incorporated by reference, see § 63.14); or
- (3) A mixture of hydrocarbons that maintains a gaseous state at ISO conditions. Additionally, natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 35 and 41 megajoules (MJ) per dry standard cubic meter (950 and 1,100 Btu per dry standard cubic foot); or
- (4) Propane or propane derived synthetic natural gas. Propane means a colorless gas derived from petroleum and natural gas, with the molecular structure C₃H₈.

Opacity means the degree to which emissions reduce the transmission of light and obscure the view of an object in the background.

Operating day means a 24-hour period between 12 midnight and the following midnight during which any fuel is combusted at any time in the boiler or process heater unit. It is not necessary for fuel to be combusted for the entire 24-hour period. For calculating rolling average emissions, an operating day does not include the hours of operation during startup or shutdown.

Other combustor means a unit designed to burn solid fuel that is not classified as a dutch oven, fluidized bed, fuel cell, hybrid suspension grate boiler, pulverized coal boiler, stoker, sloped grate, or suspension boiler as defined in this subpart.

Other gas 1 fuel means a gaseous fuel that is not natural gas or refinery gas and does not exceed a maximum mercury concentration of 40 micrograms/cubic meters of gas.

Oxygen analyzer system means all equipment required to determine the oxygen content of a gas stream and used to monitor oxygen in the boiler or process heater flue gas, boiler or process heater, firebox, or other appropriate location. This definition includes oxygen trim systems. The source owner or operator must install, calibrate, maintain, and operate the oxygen analyzer system in accordance with the manufacturer's recommendations.

Oxygen trim system means a system of monitors that is used to maintain excess air at the desired level in a combustion device over its operating load range. A typical system consists of a flue gas oxygen and/or CO monitor that automatically provides a feedback signal to the combustion air controller or draft controller.

Particulate matter (PM) means any finely divided solid or liquid material, other than uncombined water, as measured by the test methods specified under this subpart, or an approved alternative method.

Period of gas curtailment or supply interruption means a period of time during which the supply of gaseous fuel to an affected boiler or process heater is restricted or halted for reasons beyond the control of the facility. The act of entering into a contractual agreement with a supplier of natural gas established for curtailment purposes does not constitute a reason that is under the control of a facility for the purposes of this definition. An increase in the cost or unit price of natural gas due to normal market fluctuations not during periods of supplier delivery restriction does not constitute a period of natural gas curtailment or supply interruption. On-site gaseous fuel system emergencies or equipment failures qualify as periods of supply interruption when the emergency or failure is beyond the control of the facility.

Pile burner means a boiler design incorporating a design where the anticipated biomass fuel has a high relative moisture content. Grates serve to support the fuel, and underfire air flowing up through the grates provides oxygen for combustion, cools the grates, promotes turbulence in the fuel bed, and fires the fuel. The most common form of pile burning is the dutch oven.

Process heater means an enclosed device using controlled flame, and the unit's primary purpose is to transfer heat indirectly to a process material (liquid, gas, or solid) or to a heat transfer material (e.g., glycol or a mixture of glycol and water) for use in a process unit, instead of generating steam. Process heaters are devices in which the combustion gases do not come into direct contact with process materials. A device combusting solid waste, as defined in § 241.3 of this chapter, is not a process heater unless the device is exempt from the definition of a solid waste incineration unit as provided in section 129(g)(1) of the Clean Air Act. Process heaters do not include units used for comfort heat or space heat, food preparation for on-site consumption, or autoclaves. Waste heat process heaters are excluded from this definition.

Pulverized coal boiler means a boiler in which pulverized coal or other solid fossil fuel is introduced into an air stream that carries the coal to the combustion chamber of the boiler where it is fired in suspension.

Qualified energy assessor means:

- (1) Someone who has demonstrated capabilities to evaluate energy savings opportunities for steam generation and major energy using systems, including, but not limited to:
 - (i) Boiler combustion management.

- (ii) Boiler thermal energy recovery, including
 - (A) Conventional feed water economizer,
 - (B) Conventional combustion air preheater, and
 - (C) Condensing economizer.
 - (iii) Boiler blowdown thermal energy recovery.
 - (iv) Primary energy resource selection, including
 - (A) Fuel (primary energy source) switching, and
 - (B) Applied steam energy versus direct-fired energy versus electricity.
 - (v) Insulation issues.
 - (vi) Steam trap and steam leak management.
 - (vi) Condensate recovery.
 - (viii) Steam end-use management.
- (2) Capabilities and knowledge includes, but is not limited to:
- (i) Background, experience, and recognized abilities to perform the assessment activities, data analysis, and report preparation.
 - (ii) Familiarity with operating and maintenance practices for steam or process heating systems.
 - (iii) Additional potential steam system improvement opportunities including improving steam turbine operations and reducing steam demand.
 - (iv) Additional process heating system opportunities including effective utilization of waste heat and use of proper process heating methods.
 - (v) Boiler-steam turbine cogeneration systems.
 - (vi) Industry specific steam end-use systems.

Refinery gas means any gas that is generated at a petroleum refinery and is combusted. Refinery gas includes natural gas when the natural gas is combined and combusted in any proportion with a gas generated at a refinery. Refinery gas includes gases generated from other facilities when that gas is combined and combusted in any proportion with gas generated at a refinery.

Regulated gas stream means an offgas stream that is routed to a boiler or process heater for the purpose of achieving compliance with a standard under another subpart of this part or part 60, part 61, or part 65 of this chapter.

Residential boiler means a boiler used to provide heat and/or hot water and/or as part of a residential combined heat and power system. This definition includes boilers located at an institutional facility (e.g., university campus, military base, church grounds) or commercial/industrial facility (e.g., farm) used primarily to provide heat and/or hot water for:

- (1) A dwelling containing four or fewer families; or
- (2) A single unit residence dwelling that has since been converted or subdivided into condominiums or apartments.

Residual oil means crude oil, fuel oil that does not comply with the specifications under the definition of distillate oil, and all fuel oil numbers 4, 5, and 6, as defined by the American Society of Testing and Materials in ASTM D396-10 (incorporated by reference, see § 63.14(b)).

Responsible official means responsible official as defined in § 70.2.

Rolling average means the average of all data collected during the applicable averaging period. For demonstration of compliance with a CO CEMS-based emission limit based on CO concentration a 30-day (10-day) rolling average is comprised of the average of all the hourly average concentrations over the previous 720 (240) operating hours calculated each operating day. To demonstrate compliance on a 30-day rolling average basis for parameters other than CO, you must indicate the basis of the 30-day rolling average period you are using for compliance, as discussed in § 63.7545(e)(2)(iii). If you indicate the 30 operating day basis, you must calculate a new average value each operating day and shall include the measured hourly values for the preceding 30 operating days. If you select the 720 operating hours basis, you must average of all the hourly average concentrations over the previous 720 operating hours calculated each operating day.

Secondary material means the material as defined in § 241.2 of this chapter.

Shutdown means the period in which cessation of operation of a boiler or process heater is initiated for any purpose. Shutdown begins when the boiler or process heater no longer supplies useful thermal energy (such as heat or steam) for heating, cooling, or process purposes and/or generates electricity or when no fuel is being fed to the boiler or process heater, whichever is earlier. Shutdown ends when the boiler or process heater no longer supplies useful thermal energy (such as steam or heat) for heating, cooling, or process purposes and/or generates electricity, and no fuel is being combusted in the boiler or process heater.

Sloped grate means a unit where the solid fuel is fed to the top of the grate from where it slides downwards; while sliding the fuel first dries and then ignites and burns. The ash is deposited at the bottom of the grate. Fluidized bed, dutch oven, pile burner, hybrid suspension grate, suspension burners, and fuel cells are not considered to be a sloped grate design.

Solid fossil fuel includes, but is not limited to, coal, coke, petroleum coke, and tire derived fuel.

Solid fuel means any solid fossil fuel or biomass or bio-based solid fuel.

Startup means:

- (1) Either the first-ever firing of fuel in a boiler or process heater for the purpose of supplying useful thermal energy for heating and/or producing electricity, or for any other purpose, or the firing of fuel in a boiler after a shutdown event for any purpose. Startup ends when any of the useful thermal energy from the boiler or process heater is supplied for heating, and/or producing electricity, or for any other purpose, or
- (2) The period in which operation of a boiler or process heater is initiated for any purpose. Startup begins with either the first-ever firing of fuel in a boiler or process heater for the purpose of supplying useful thermal energy (such as steam or heat) for heating, cooling or process purposes, or producing electricity, or the firing of fuel in a boiler or process heater for any purpose after a shutdown event. Startup ends four hours after when the boiler or process heater supplies useful thermal energy (such as heat or steam) for heating, cooling, or process purposes, or generates electricity, whichever is earlier.

Steam output means:

- (1) For a boiler that produces steam for process or heating only (no power generation), the energy content in terms of MMBtu of the boiler steam output,
- (2) For a boiler that cogenerates process steam and electricity (also known as combined heat and power), the total energy output, which is the sum of the energy content of the steam exiting the turbine and sent to process in MMBtu and the energy of the electricity generated converted to MMBtu at a rate of 10,000 Btu per kilowatt-hour generated (10 MMBtu per megawatt-hour), and
- (3) For a boiler that generates only electricity, the alternate output-based emission limits would be the appropriate emission limit from Table 1, 2, 14, or 15 to this subpart in units of pounds per million Btu heat input (lb per MWh).
- (4) For a boiler that performs multiple functions and produces steam to be used for any combination of paragraphs (1), (2), and (3) of this definition that includes electricity generation of paragraph (3) of this definition, the total energy output, in terms of MMBtu of steam output, is the sum of the energy content of steam sent directly to the process and/or used for heating (S_1), the energy content of turbine steam sent to process plus energy in electricity according to paragraph (2) of this definition (S_2), and the energy content of electricity generated by a electricity only turbine as paragraph (3) of this definition ($MW_{(3)}$) and would be calculated using Equation 1 to this definition. In the case of boilers supplying steam to one or more common headers, S_1 , S_2 , and $MW_{(3)}$ for each boiler would be calculated based on its (steam energy) contribution (fraction of total steam energy) to the common header.

Equation 1 to the definition *Steam Output*

$$SO_M = S_1 + S_2 + (MW_{(3)} \times CFn) \quad (\text{Eq. 1})$$

Where:

SO_M = Total steam output for multi-function boiler, MMBtu.

S_1 = Energy content of steam sent directly to the process and/or used for heating, MMBtu.

S_2 = Energy content of turbine steam sent to the process plus energy in electricity according to paragraph (2) of this definition, MMBtu.

$MW_{(3)}$ = Electricity generated according to paragraph (3) of this definition, MWh.

CFn = Conversion factor for the appropriate subcategory for converting electricity generated according to paragraph (3) of this definition to equivalent steam energy, MMBtu/MWh.

CFn for emission limits for boilers in the unit designed to burn solid fuel subcategory = 10.8.

CFn PM and CO emission limits for boilers in one of the subcategories of units designed to burn coal = 11.7.

CFn PM and CO emission limits for boilers in one of the subcategories of units designed to burn biomass = 12.1.

CFn for emission limits for boilers in one of the subcategories of units designed to burn liquid fuel = 11.2.

CFn for emission limits for boilers in the unit designed to burn gas 2 (other) subcategory = 6.2.

Stoker means a unit consisting of a mechanically operated fuel feeding mechanism, a stationary or moving grate to support the burning of fuel and admit under-grate air to the fuel, an overfire air system to complete combustion, and an ash discharge system. This definition of stoker includes air swept stokers. There are two general types of stokers: Underfeed and overfeed. Overfeed stokers include mass feed and spreader stokers. Fluidized bed, dutch oven, pile burner, hybrid suspension grate, suspension burners, and fuel cells are not considered to be a stoker design.

Stoker/sloped grate/other unit designed to burn kiln dried biomass means the unit is in the units designed to burn biomass/bio-based solid subcategory that is either a stoker, sloped grate, or other combustor design and is not in the stoker/sloped grate/other units designed to burn wet biomass subcategory.

Stoker/sloped grate/other unit designed to burn wet biomass means the unit is in the units designed to burn biomass/bio-based solid subcategory that is either a stoker, sloped grate, or other combustor design and any of the biomass/bio-based solid fuel combusted in the unit exceeds 20 percent moisture on an annual heat input basis.

Suspension burner means a unit designed to fire dry biomass/biobased solid particles in suspension that are conveyed in an airstream to the furnace like pulverized coal. The combustion of the fuel material is completed on a grate or floor below. The biomass/biobased fuel combusted in the unit shall not exceed 20 percent moisture on an annual heat input basis. Fluidized bed, dutch oven, pile burner, and hybrid suspension grate units are not part of the suspension burner subcategory.

Temporary boiler means any gaseous or liquid fuel boiler or process heater that is designed to, and is capable of, being carried or moved from one location to another by means of, for example, wheels, skids, carrying handles, dollies, trailers, or platforms. A boiler or process heater is not a temporary boiler or process heater if any one of the following conditions exists:

- (1) The equipment is attached to a foundation.
- (2) The boiler or process heater or a replacement remains at a location within the facility and performs the same or similar function for more than 12 consecutive months, unless the regulatory agency approves an extension. An extension may be granted by the regulating agency upon petition by the owner or operator of a unit specifying the basis for such a request. Any temporary boiler or process heater that replaces a temporary boiler or process heater at a location and performs the same or similar function will be included in calculating the consecutive time period.
- (3) The equipment is located at a seasonal facility and operates during the full annual operating period of the seasonal facility, remains at the facility for at least 2 years, and operates at that facility for at least 3 months each year.
- (4) The equipment is moved from one location to another within the facility but continues to perform the same or similar function and serve the same electricity, process heat, steam, and/or hot water system in an attempt to circumvent the residence time requirements of this definition.

Total selected metals (TSM) means the sum of the following metallic hazardous air pollutants: arsenic, beryllium, cadmium, chromium, lead, manganese, nickel and selenium.

Traditional fuel means the fuel as defined in § 241.2 of this chapter.

Tune-up means adjustments made to a boiler or process heater in accordance with the procedures outlined in § 63.7540(a)(10).

Ultra low sulfur liquid fuel means a distillate oil that has less than or equal to 15 ppm sulfur.

Unit designed to burn biomass/bio-based solid subcategory includes any boiler or process heater that burns at least 10 percent biomass or bio-based solids on an annual heat input basis in combination with solid fossil fuels, liquid fuels, or gaseous fuels.

Unit designed to burn coal/solid fossil fuel subcategory includes any boiler or process heater that burns any coal or other solid fossil fuel alone or at least 10 percent coal or other solid fossil fuel on an annual heat input basis in combination with liquid fuels, gaseous fuels, or less than 10 percent biomass and bio-based solids on an annual heat input basis.

Unit designed to burn gas 1 subcategory includes any boiler or process heater that burns only natural gas, refinery gas, and/or other gas 1 fuels. Gaseous fuel boilers and process heaters that burn liquid fuel for periodic testing of liquid fuel, maintenance, or operator training, not to exceed a combined total of 48 hours during any calendar year, are included in this definition. Gaseous fuel boilers and process heaters that burn liquid fuel during periods of gas curtailment or gas supply interruptions of any duration are also included in this definition.

Unit designed to burn gas 2 (other) subcategory includes any boiler or process heater that is not in the unit designed to burn gas 1 subcategory and burns any gaseous fuels either alone or in combination with less than 10 percent coal/solid fossil fuel, and less than 10 percent biomass/bio-based solid fuel on an annual heat input basis, and no liquid fuels. Gaseous fuel boilers and process heaters that are not in the unit designed to burn gas 1 subcategory and that burn liquid fuel for periodic testing of liquid fuel, maintenance, or operator training, not to exceed a combined total of 48 hours during any calendar year, are included in this definition. Gaseous fuel boilers and process heaters that are not in the unit designed to burn gas 1 subcategory and that burn liquid fuel during periods of gas curtailment or gas supply interruption of any duration are also included in this definition.

Unit designed to burn heavy liquid subcategory means a unit in the unit designed to burn liquid subcategory where at least 10 percent of the heat input from liquid fuels on an annual heat input basis comes from heavy liquids.

Unit designed to burn light liquid subcategory means a unit in the unit designed to burn liquid subcategory that is not part of the unit designed to burn heavy liquid subcategory.

Unit designed to burn liquid subcategory includes any boiler or process heater that burns any liquid fuel, but less than 10 percent coal/solid fossil fuel and less than 10 percent biomass/bio-based solid fuel on an annual heat input basis, either alone or in combination with gaseous fuels. Units in the unit design to burn gas 1 or unit designed to burn gas 2 (other) subcategories that burn liquid fuel for periodic testing of liquid fuel, maintenance, or operator training, not to exceed a combined total of 48 hours during any calendar year are not included in this definition. Units in the unit design to burn gas 1 or unit designed to burn gas 2 (other) subcategories during periods of gas curtailment or gas supply interruption of any duration are also not included in this definition.

Unit designed to burn liquid fuel that is a non-continental unit means an industrial, commercial, or institutional boiler or process heater meeting the definition of the unit designed to burn liquid subcategory located in the State of Hawaii, the Virgin Islands, Guam, American Samoa, the Commonwealth of Puerto Rico, or the Northern Mariana Islands.

Unit designed to burn solid fuel subcategory means any boiler or process heater that burns only solid fuels or at least 10 percent solid fuel on an annual heat input basis in combination with liquid fuels or gaseous fuels.

Useful thermal energy means energy (i.e., steam, hot water, or process heat) that meets the minimum operating temperature, flow, and/or pressure required by any energy use system that uses energy provided by the affected boiler or process heater.

Vegetable oil means oils extracted from vegetation.

Voluntary Consensus Standards or VCS mean technical standards (e.g., materials specifications, test methods, sampling procedures, business practices) developed or adopted by one or more voluntary consensus bodies. EPA/Office of Air Quality Planning and Standards, by precedent, has only used VCS that are written in English. Examples of VCS bodies are: American Society of Testing and Materials (ASTM 100 Barr Harbor Drive, P.O. Box CB700, West Conshohocken, Pennsylvania 19428-B2959, (800) 262-1373, <http://www.astm.org>), American Society of Mechanical Engineers (ASME ASME, Three Park Avenue, New York, NY 10016-5990, (800) 843-2763, <http://www.asme.org>), International Standards Organization (ISO 1, ch. de la Voie-Creuse, Case postale 56, CH-1211 Geneva 20, Switzerland, + 41 22 749 01 11, <http://www.iso.org/iso/home.htm>), Standards Australia (AS Level 10, The Exchange Centre, 20 Bridge Street, Sydney, GPO Box 476, Sydney NSW 2001, + 61 2 9237 6171 <http://www.stadards.org.au>), British Standards Institution (BSI, 389 Chiswick High Road, London, W4 4AL, United Kingdom, + 44 (0)20 8996 9001, <http://www.bsigroup.com>), Canadian Standards Association (CSA 5060 Spectrum Way, Suite 100, Mississauga, Ontario L4W 5N6, Canada, 800-463-6727, <http://www.csa.ca>), European Committee for Standardization (CEN CENELEC Management Centre Avenue Marnix 17 B-1000 Brussels, Belgium + 32 2 550 08 11, <http://www.cen.eu/cen>), and German Engineering Standards (VDI VDI Guidelines Department, P.O. Box 10 11 39 40002, Duesseldorf, Germany, + 49 211 6214-230, <http://www.vdi.eu>). The types of standards that are not considered VCS are standards developed by: The United States, e.g., California (CARB) and Texas (TCEQ); industry groups, such as American Petroleum Institute (API), Gas Processors Association (GPA), and Gas Research Institute (GRI); and other branches of the U.S. government, e.g., Department of Defense (DOD) and Department of Transportation (DOT). This does not preclude EPA from using standards developed by groups that are not VCS bodies within their rule. When this occurs, EPA has done searches and reviews for VCS equivalent to these non-EPA methods.

Waste heat boiler means a device that recovers normally unused energy (i.e., hot exhaust gas) and converts it to usable heat. Waste heat boilers are also referred to as heat recovery steam generators. Waste heat boilers are heat exchangers generating steam from incoming hot exhaust gas from an industrial (e.g., thermal oxidizer, kiln, furnace) or power (e.g., combustion turbine, engine) equipment. Duct burners are sometimes used to increase the temperature of the incoming hot exhaust gas.

Waste heat process heater means an enclosed device that recovers normally unused energy (i.e., hot exhaust gas) and converts it to usable heat. Waste heat process heaters are also referred to as recuperative process heaters. This definition includes both fired and unfired waste heat process heaters.

Wet scrubber means any add-on air pollution control device that mixes an aqueous stream or slurry with the exhaust gases from a boiler or process heater to control emissions of particulate matter or to absorb and neutralize acid gases, such as hydrogen chloride. A wet scrubber creates an aqueous stream or slurry as a byproduct of the emissions control process.

Work practice standard means any design, equipment, work practice, or operational standard, or combination thereof, that is promulgated pursuant to section 112(h) of the Clean Air Act.

[78 FR 15664, Mar. 21, 2011, as amended at 78 FR 7163, Jan. 31, 2013; 80 FR 72817, Nov. 20, 2015; 87 FR 60846, Oct. 6, 2022]

Table 1 to Subpart DDDDD of Part 63—Emission Limits for New or Reconstructed Boilers and Process Heaters ^c

As stated in § 63.7500, you must comply with the following applicable emission limits:

TABLE 1 TO SUBPART DDDDD OF PART 63—EMISSION LIMITS FOR NEW OR RECONSTRUCTED BOILERS AND PROCESS HEATERS ^c
[UNITS WITH HEAT INPUT CAPACITY OF 10 MILLION BTU PER HOUR OR GREATER]

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling
1. Units in all subcategories designed to burn solid fuel	a. HCl	2.1E-04 ^a lb per MMBtu of heat input	2.9E-04 ^a lb per MMBtu of steam output or 2.7E-03 ^a lb per MWh	For M26A, collect a minimum of 1 dscm per run; for M26 collect a minimum of 120 liters per run.
	b.	8.0E-07 ^a lb per MMBtu	8.7E-07 ^a lb per	For M29, collect a

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote "a", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before April 1, 2013, you may comply with the emission limits in Table 11, 12, or 13 to this subpart until January 31, 2016. On and after January 31, 2016, but before October 6, 2025 you may comply with the emission limits in Table 14 to this subpart. On and after October 6, 2025 you must comply with the emission limits in this Table 1.

^d An owner or operator may determine compliance with the carbon monoxide emissions limit using CO₂ as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit and must also take into account that the 3-percent oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling
	Mercury	of heat input	MMBtu of steam output or 1.1E-05 ^a lb per MWh	minimum of 4 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 ^b collect a minimum of 4 dscm.
2. Units designed to burn coal/solid fossil fuel	a. Filterable PM (or TSM)	1.1E-03 lb per MMBtu of heat input; or (2.3E-05 lb per MMBtu of heat input)	1.1E-03 lb per MMBtu of steam output or 1.4E-02 lb per MWh; or (2.7E-05 lb per MMBtu of steam output or 2.9E-04 lb per MWh)	Collect a minimum of 3 dscm per run.
3. Pulverized	a. Carbon	130 ppm by volume on a	0.11 lb per	1 hr minimum sampling

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote “a”, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before April 1, 2013, you may comply with the emission limits in Table 11, 12, or 13 to this subpart until January 31, 2016. On and after January 31, 2016, but before October 6, 2025 you may comply with the emission limits in Table 14 to this subpart. On and after October 6, 2025 you must comply with the emission limits in this Table 1.

^d An owner or operator may determine compliance with the carbon monoxide emissions limit using CO₂ as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit and must also take into account that the 3-percent oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling
coal boilers designed to burn coal/ solid fossil fuel	monoxide (CO) (or CEMS)	dry basis corrected to 3-percent oxygen, 3-run average; or (320 ppm by volume on a dry basis corrected to 3-percent oxygen, ^d 30-day rolling average)	MMBtu of steam output or 1.4 lb per MWh; 3-run average	time.
4. Stokers/ others designed to burn coal/ solid fossil fuel	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (340 ppm by volume on a dry basis corrected to 3-percent oxygen ^d , 30-day rolling average)	0.12 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average	1 hr minimum sampling time.
5. Fluidized	a. CO (or	130 ppm by volume on a	0.11 lb per	1 hr minimum sampling

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote “a”, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before April 1, 2013, you may comply with the emission limits in Table 11, 12, or 13 to this subpart until January 31, 2016. On and after January 31, 2016, but before October 6, 2025 you may comply with the emission limits in Table 14 to this subpart. On and after October 6, 2025 you must comply with the emission limits in this Table 1.

^d An owner or operator may determine compliance with the carbon monoxide emissions limit using CO₂ as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit and must also take into account that the 3-percent oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling
bed units designed to burn coal/ solid fossil fuel	CEMS)	dry basis corrected to 3-percent oxygen, 3-run average; or (230 ppm by volume on a dry basis corrected to 3-percent oxygen, ^d 30-day rolling average)	MMBtu of steam output or 1.4 lb per MWh; 3-run average	time.
6. Fluidized bed units with an integrated heat exchanger designed to burn coal/ solid fossil fuel	a. CO (or CEMS)	140 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (150 ppm by volume on a dry basis corrected to 3-percent oxygen, ^d 30-day rolling average)	1.2E-01 lb per MMBtu of steam output or 1.5 lb per MWh; 3-run average	1 hr minimum sampling time.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote "a", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before April 1, 2013, you may comply with the emission limits in Table 11, 12, or 13 to this subpart until January 31, 2016. On and after January 31, 2016, but before October 6, 2025 you may comply with the emission limits in Table 14 to this subpart. On and after October 6, 2025 you must comply with the emission limits in this Table 1.

^d An owner or operator may determine compliance with the carbon monoxide emissions limit using CO₂ as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit and must also take into account that the 3-percent oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling
7. Stokers/sloped grate/others designed to burn wet biomass fuel	a. CO (or CEMS)	590 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (390 ppm by volume on a dry basis corrected to 3-percent oxygen, ^d 30-day rolling average)	6.1E-01 lb per MMBtu of steam output or 6.5 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	1.3E-02 lb per MMBtu of heat input; or (2.6E-05 lb per MMBtu of heat input)	1.4E-02 lb per MMBtu of steam output or 1.9E-01 lb per MWh; or (2.7E-05 lb per MMBtu of steam output or 3.7E-04 lb per MWh)	Collect a minimum of 2 dscm per run.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote "a", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before April 1, 2013, you may comply with the emission limits in Table 11, 12, or 13 to this subpart until January 31, 2016. On and after January 31, 2016, but before October 6, 2025 you may comply with the emission limits in Table 14 to this subpart. On and after October 6, 2025 you must comply with the emission limits in this Table 1.

^d An owner or operator may determine compliance with the carbon monoxide emissions limit using CO₂ as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit and must also take into account that the 3-percent oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling
8. Stokers/sloped grate/others designed to burn kiln-dried biomass fuel	a. CO	460 ppm by volume on a dry basis corrected to 3-percent oxygen	4.3E-01 lb per MMBtu of steam output or 5.1 lb per MWh	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	3.0E-02 lb per MMBtu of heat input; or (5.0E-03 lb per MMBtu of heat input)	3.5E-02 lb per MMBtu of steam output or 4.2E-01 lb per MWh; or (5.2E-03 lb per MMBtu of steam output or 7.0E-02 lb per MWh)	Collect a minimum of 2 dscm per run.
9. Fluidized bed units	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to	1.3E-01 lb per MMBtu of steam	1 hr minimum sampling time.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote "a", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before April 1, 2013, you may comply with the emission limits in Table 11, 12, or 13 to this subpart until January 31, 2016. On and after January 31, 2016, but before October 6, 2025 you may comply with the emission limits in Table 14 to this subpart. On and after October 6, 2025 you must comply with the emission limits in this Table 1.

^d An owner or operator may determine compliance with the carbon monoxide emissions limit using CO₂ as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit and must also take into account that the 3-percent oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling
designed to burn biomass/bio-based solids	b. Filterable PM (or TSM)	3-percent oxygen, 3-run average; or (310 ppm by volume on a dry basis corrected to 3-percent oxygen, ^d 30-day rolling average) 4.1E-03 lb per MMBtu of heat input; or (8.4E-06 ^a lb per MMBtu of heat input)	output or 1.5 lb per MWh; 3-run average 5.0E-03 lb per MMBtu of steam output or 5.8E-02 lb per MWh; or (1.1E-05 ^a lb per MMBtu of steam output or 1.2E-04 ^a lb per MWh)	Collect a minimum of 3 dscm per run.
10. Suspension	a. CO (or CEMS)	220 ppm by volume on a dry basis corrected to	0.18 lb per MMBtu of steam	1 hr minimum sampling time.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote "a", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before April 1, 2013, you may comply with the emission limits in Table 11, 12, or 13 to this subpart until January 31, 2016. On and after January 31, 2016, but before October 6, 2025 you may comply with the emission limits in Table 14 to this subpart. On and after October 6, 2025 you must comply with the emission limits in this Table 1.

^d An owner or operator may determine compliance with the carbon monoxide emissions limit using CO₂ as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit and must also take into account that the 3-percent oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling
burners designed to burn biomass/bio-based solids	b. Filterable PM (or TSM)	3-percent oxygen, 3-run average; or (2,000 ppm by volume on a dry basis corrected to 3-percent oxygen, ^d 10-day rolling average) 3.0E-02 lb per MMBtu of heat input; or (8.0E-03 lb per MMBtu of heat input)	output or 2.5 lb per MWh; 3-run average 3.1E-02 lb per MMBtu of steam output or 4.2E-01 lb per MWh; or (8.1E-03 lb per MMBtu of steam output or 1.2E-01 lb per MWh)	Collect a minimum of 2 dscm per run.
11. Dutch Ovens/Pile	a. CO (or CEMS)	330 ppm by volume on a dry basis corrected to	3.5E-01 lb per MMBtu of steam	1 hr minimum sampling time.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote “a”, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before April 1, 2013, you may comply with the emission limits in Table 11, 12, or 13 to this subpart until January 31, 2016. On and after January 31, 2016, but before October 6, 2025 you may comply with the emission limits in Table 14 to this subpart. On and after October 6, 2025 you must comply with the emission limits in this Table 1.

^d An owner or operator may determine compliance with the carbon monoxide emissions limit using CO₂ as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit and must also take into account that the 3-percent oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling
burners designed to burn biomass/bio-based solids	b. Filterable PM (or TSM)	3-percent oxygen, 3-run average; or (520 ppm by volume on a dry basis corrected to 3-percent oxygen, ^d 10-day rolling average) 2.5E-03 lb per MMBtu of heat input; or (3.9E-05 lb per MMBtu of heat input)	output or 3.6 lb per MWh; 3-run average 3.4E-03 lb per MMBtu of steam output or 3.5E-02 lb per MWh; or (5.2E-05 lb per MMBtu of steam output or 5.5E-04 lb per MWh)	Collect a minimum of 3 dscm per run.
12. Fuel cell units	a. CO	910 ppm by volume on a dry basis corrected to	1.1 lb per MMBtu of steam output	1 hr minimum sampling time.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote “a”, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before April 1, 2013, you may comply with the emission limits in Table 11, 12, or 13 to this subpart until January 31, 2016. On and after January 31, 2016, but before October 6, 2025 you may comply with the emission limits in Table 14 to this subpart. On and after October 6, 2025 you must comply with the emission limits in this Table 1.

^d An owner or operator may determine compliance with the carbon monoxide emissions limit using CO₂ as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit and must also take into account that the 3-percent oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling
designed to burn biomass/bio-based solids	b. Filterable PM (or TSM)	3-percent oxygen 1.1E-02 lb per MMBtu of heat input; or (2.9E-05 lb per MMBtu of heat input)	or 1.0E+01 lb per MWh 2.0E-02 lb per MMBtu of steam output or 1.6E-01 lb per MWh; or (5.1E-05 lb per MMBtu of steam output or 4.1E-04 lb per MWh)	Collect a minimum of 2 dscm per run.
13. Hybrid suspension grate boiler designed to	a. CO (or CEMS)	180 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (900 ppm by	0.22 lb per MMBtu of steam output or 2.0 lb per MWh; 3-run	1 hr minimum sampling time.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote “a”, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before April 1, 2013, you may comply with the emission limits in Table 11, 12, or 13 to this subpart until January 31, 2016. On and after January 31, 2016, but before October 6, 2025 you may comply with the emission limits in Table 14 to this subpart. On and after October 6, 2025 you must comply with the emission limits in this Table 1.

^d An owner or operator may determine compliance with the carbon monoxide emissions limit using CO₂ as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit and must also take into account that the 3-percent oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling
burn biomass/bio-based solids	b. Filterable PM (or TSM)	volume on a dry basis corrected to 3-percent oxygen ^d , 30-day rolling average) 2.6E-02 lb per MMBtu of heat input; or (4.4E-04 lb per MMBtu of heat input)	average 3.3E-02 lb per MMBtu of steam output or 3.7E-01 lb per MWh; or (5.5E-04 lb per MMBtu of steam output or 6.2E-03 lb per MWh)	Collect a minimum of 3 dscm per run.
14. Units designed to burn liquid fuel	a. HCl	1.5E-04 ^a lb per MMBtu of heat input	1.7E-04 ^a lb per MMBtu of steam output or 2.1E-03 ^a lb per MWh	For M26A: Collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote “a”, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before April 1, 2013, you may comply with the emission limits in Table 11, 12, or 13 to this subpart until January 31, 2016. On and after January 31, 2016, but before October 6, 2025 you may comply with the emission limits in Table 14 to this subpart. On and after October 6, 2025 you must comply with the emission limits in this Table 1.

^d An owner or operator may determine compliance with the carbon monoxide emissions limit using CO₂ as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit and must also take into account that the 3-percent oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling
15. Units designed to burn heavy liquid fuel	b. Mercury	4.8E-07 ^a lb per MMBtu of heat input	5.3E-07 ^a lb per MMBtu of steam output or 6.7E-06 ^a lb per MWh	per run. For M29, collect a minimum of 4 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 ^b collect a minimum of 4 dscm.
	a. CO	130 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average	0.13 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable	1.9E-03 lb per MMBtu of heat input; or (6.1E-06 ^a	2.1E-03 lb per MMBtu of steam	Collect a minimum of 3 dscm per run.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote "a", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before April 1, 2013, you may comply with the emission limits in Table 11, 12, or 13 to this subpart until January 31, 2016. On and after January 31, 2016, but before October 6, 2025 you may comply with the emission limits in Table 14 to this subpart. On and after October 6, 2025 you must comply with the emission limits in this Table 1.

^d An owner or operator may determine compliance with the carbon monoxide emissions limit using CO₂ as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit and must also take into account that the 3-percent oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling
16. Units designed to burn light liquid fuel	PM (or TSM)	lb per MMBtu of heat input)	output or 2.7E-02 lb per MWh; or (6.7E-6 ^a lb per MMBtu of steam output or 8.5E-5 ^a lb per MWh)	1 hr minimum sampling time. Collect a minimum of 3 dscm per run.
	a. CO	130 ppm by volume on a dry basis corrected to 3-percent oxygen	0.13 lb per MMBtu of steam output or 1.4 lb per MWh	
	b. Filterable PM (or TSM)	1.1E-03 ^a lb per MMBtu of heat input; or (2.9E-05 lb per MMBtu of heat input)	1.2E-03 ^a lb per MMBtu of steam output or 1.6E-02 ^a lb per MWh; or (3.2E-05 lb per MMBtu of steam	

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote "a", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before April 1, 2013, you may comply with the emission limits in Table 11, 12, or 13 to this subpart until January 31, 2016. On and after January 31, 2016, but before October 6, 2025 you may comply with the emission limits in Table 14 to this subpart. On and after October 6, 2025 you must comply with the emission limits in this Table 1.

^d An owner or operator may determine compliance with the carbon monoxide emissions limit using CO₂ as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit and must also take into account that the 3-percent oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling
17. Units designed to burn liquid fuel that are non-continental units	a. CO	130 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average based on stack test	output or 4.0E-04 lb per MWh) 0.13 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.3E-02 lb per MMBtu of heat input; or (8.6E-04 lb per MMBtu of heat input)	2.5E-02 lb per MMBtu of steam output or 3.2E-01 lb per MWh; or (9.4E-04 lb per MMBtu of steam output or 1.2E-02	Collect a minimum of 4 dscm per run.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote “a”, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before April 1, 2013, you may comply with the emission limits in Table 11, 12, or 13 to this subpart until January 31, 2016. On and after January 31, 2016, but before October 6, 2025 you may comply with the emission limits in Table 14 to this subpart. On and after October 6, 2025 you must comply with the emission limits in this Table 1.

^d An owner or operator may determine compliance with the carbon monoxide emissions limit using CO₂ as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit and must also take into account that the 3-percent oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling
18. Units designed to burn gas 2 (other) gases	a. CO	130 ppm by volume on a dry basis corrected to 3-percent oxygen	lb per MWh) 0.16 lb per MMBtu of steam output or 1.0 lb per MWh	1 hr minimum sampling time.
	b. HCl	1.7E-03 lb per MMBtu of heat input	2.9E-03 lb per MMBtu of steam output or 1.8E-02 lb per MWh	For M26A, collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.
	c. Mercury	7.9E-06 lb per MMBtu of heat input	1.4E-05 lb per MMBtu of steam output or 8.3E-05 lb per MWh	For M29, collect a minimum of 3 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote "a", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before April 1, 2013, you may comply with the emission limits in Table 11, 12, or 13 to this subpart until January 31, 2016. On and after January 31, 2016, but before October 6, 2025 you may comply with the emission limits in Table 14 to this subpart. On and after October 6, 2025 you must comply with the emission limits in this Table 1.

^d An owner or operator may determine compliance with the carbon monoxide emissions limit using CO₂ as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit and must also take into account that the 3-percent oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling
	d. Filterable PM (or TSM)	7.3E-03 lb per MMBtu of heat input; or (2.1E-04 lb per MMBtu of heat input)	1.3E-02 lb per MMBtu of steam output or 7.6E-02 lb per MWh; or (3.5E-04 lb per MMBtu of steam output or 2.2E-03 lb per MWh)	D6784 ^b collect a minimum of 3 dscm. Collect a minimum of 3 dscm per run.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote “a”, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before April 1, 2013, you may comply with the emission limits in Table 11, 12, or 13 to this subpart until January 31, 2016. On and after January 31, 2016, but before October 6, 2025 you may comply with the emission limits in Table 14 to this subpart. On and after October 6, 2025 you must comply with the emission limits in this Table 1.

^d An owner or operator may determine compliance with the carbon monoxide emissions limit using CO₂ as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit and must also take into account that the 3-percent oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

[87 FR 60847, Oct. 6, 2022]

Table 2 to Subpart DDDDD of Part 63—Emission Limits for Existing Boilers and Process Heaters
d

As stated in § 63.7500, you must comply with the following applicable emission limits:

[UNITS WITH HEAT INPUT CAPACITY OF 10 MILLION BTU PER HOUR OR GREATER]

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
1. Units in all subcategories designed to burn solid fuel	a. HCl	2.0E-02 lb per MMBtu of heat input	2.3E-02 lb per MMBtu of steam output or 0.26 lb per MWh	For M26A, collect a minimum of 1 dscm per run; for M26, collect a minimum of 120 liters per run.
	b. Mercury	5.4E-06 lb per MMBtu of heat input	6.2E-06 lb per MMBtu of steam output or 6.9E-05 lb per MWh	For M29, collect a minimum of 3 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote a, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit be determined using CO₂ as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit and must also take into account that the 3-percent oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

^d Before October 6, 2025 you may comply with the emission limits in Table 15 to this subpart. On and after October 6, 2025], you must comply with the emission limits in this Table 2.

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
2. Units design to burn coal/solid fossil fuel	a. Filterable PM (or TSM)	3.9E-02 lb per MMBtu of heat input; or (5.3E-05 lb per MMBtu of heat input)	4.1E-02 lb per MMBtu of steam output or 4.8E-01 lb per MWh; or (5.6E-05 lb per MMBtu of steam output or 6.5E-04 lb per MWh)	D6784 ^b collect a minimum of 3 dscm. Collect a minimum of 2 dscm per run.
3. Pulverized coal boilers designed to burn coal/solid fossil fuel	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (320 ppm by volume on a dry basis corrected to 3-percent oxygen, ^c 30-day rolling average)	0.11 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average	1 hr minimum sampling time.
4. Stokers/	a. CO (or	150 ppm by volume on a	0.14 lb per	1 hr minimum sampling

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote a, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit be determined using CO₂ as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit and must also take into account that the 3-percent oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

^d Before October 6, 2025 you may comply with the emission limits in Table 15 to this subpart. On and after October 6, 2025, you must comply with the emission limits in this Table 2.

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
others designed to burn coal/solid fossil fuel	CEMS)	dry basis corrected to 3-percent oxygen, 3-run average; or (340 ppm by volume on a dry basis corrected to 3-percent oxygen, ^c 30-day rolling average)	MMBtu of steam output or 1.6 lb per MWh; 3-run average	time.
5. Fluidized bed units designed to burn coal/solid fossil fuel	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (230 ppm by volume on a dry basis corrected to 3-percent oxygen, ^c 30-day rolling average)	0.12 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average	1 hr minimum sampling time.
6. Fluidized bed units with an integrated heat	a. CO (or CEMS)	140 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (150 ppm by	1.3E-01 lb per MMBtu of steam output or 1.5 lb per MWh; 3-run	1 hr minimum sampling time.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote a, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit be determined using CO₂ as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit and must also take into account that the 3-percent oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

^d Before October 6, 2025 you may comply with the emission limits in Table 15 to this subpart. On and after October 6, 2025], you must comply with the emission limits in this Table 2.

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
exchanger designed to burn coal/ solid fossil fuel		volume on a dry basis corrected to 3-percent oxygen, ^c 30-day rolling average)	average	
7. Stokers/ sloped grate/ others designed to burn wet biomass fuel	a. CO (or CEMS)	1,100 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (720 ppm by volume on a dry basis corrected to 3-percent oxygen, ^c 30-day rolling average)	1.1 lb per MMBtu of steam output or 13 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	3.4E-02 lb per MMBtu of heat input; or (2.0E-04 lb per MMBtu of heat input)	4.0E-02 lb per MMBtu of steam output or 4.8E-01 lb per MWh; or (2.4E-04 lb per MMBtu of steam	Collect a minimum of 2 dscm per run.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote a, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit be determined using CO₂ as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit and must also take into account that the 3-percent oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

^d Before October 6, 2025 you may comply with the emission limits in Table 15 to this subpart. On and after October 6, 2025], you must comply with the emission limits in this Table 2.

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
8. Stokers/sloped grate/others designed to burn kiln-dried biomass fuel	a. CO	460 ppm by volume on a dry basis corrected to 3-percent oxygen	output or 2.8E-03 lb per MWh) 4.2E-01 lb per MMBtu of steam output or 5.1 lb per MWh	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	3.2E-01 lb per MMBtu of heat input; or (5.0E-03 lb per MMBtu of heat input)	3.7E-01 lb per MMBtu of steam output or 4.5 lb per MWh; or (5.9E-03 lb per MMBtu of steam output or 7.0E-02 lb per MWh)	Collect a minimum of 1 dscm per run.
9. Fluidized bed units designed to	a. CO (or CEMS)	210 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run	2.1E-01 lb per MMBtu of steam output or 2.3 lb	1 hr minimum sampling time.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote a, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit be determined using CO₂ as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit and must also take into account that the 3-percent oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

^d Before October 6, 2025 you may comply with the emission limits in Table 15 to this subpart. On and after October 6, 2025], you must comply with the emission limits in this Table 2.

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
burn biomass/bio-based solid	b. Filterable PM (or TSM)	average; or (310 ppm by volume on a dry basis corrected to 3-percent oxygen, ^c 30-day rolling average) 7.4E-03 lb per MMBtu of heat input; or (6.4E-05 lb per MMBtu of heat input)	per MWh; 3-run average 9.2E-03 lb per MMBtu of steam output or 0.11 lb per MWh; or (8.0E-05 lb per MMBtu of steam output or 9.0E-04 lb per MWh)	Collect a minimum of 1 dscm per run.
10. Suspension burners designed to burn biomass/bio-	a. CO (or CEMS)	2,400 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (2,000 ppm by volume on a dry basis corrected to 3-percent	1.9 lb per MMBtu of steam output or 27 lb per MWh; 3-run average	1 hr minimum sampling time.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote a, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit be determined using CO₂ as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit and must also take into account that the 3-percent oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

^d Before October 6, 2025 you may comply with the emission limits in Table 15 to this subpart. On and after October 6, 2025], you must comply with the emission limits in this Table 2.

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
based solid	b. Filterable PM (or TSM)	oxygen, ^c 10-day rolling average) 4.1E-02 lb per MMBtu of heat input; or (8.0E-03 lb per MMBtu of heat input)	4.2E-02 lb per MMBtu of steam output or 5.8E-01 lb per MWh; or (8.1E-03 lb per MMBtu of steam output or 0.12 lb per MWh)	Collect a minimum of 2 dscm per run.
11. Dutch Ovens/Pile burners designed to burn biomass/bio-based solid	a. CO (or CEMS)	770 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (520 ppm by volume on a dry basis corrected to 3-percent oxygen, ^c 10-day rolling average)	8.4E-01 lb per MMBtu of steam output or 8.4 lb per MWh; 3-run average	1 hr minimum sampling time.
	b.	1.8E-01 lb per MMBtu of	2.5E-01 lb per	Collect a minimum of 1

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote a, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit be determined using CO₂ as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit and must also take into account that the 3-percent oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

^d Before October 6, 2025 you may comply with the emission limits in Table 15 to this subpart. On and after October 6, 2025], you must comply with the emission limits in this Table 2.

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
12. Fuel cell units designed to burn biomass/bio-based solid	Filterable PM (or TSM)	heat input; or (2.0E-03 lb per MMBtu of heat input)	MMBtu of steam output or 2.6 lb per MWh; or (2.8E-03 lb per MMBtu of steam output or 2.8E-02 lb per MWh)	dscm per run.
	a. CO	1,100 ppm by volume on a dry basis corrected to 3-percent oxygen	2.4 lb per MMBtu of steam output or 12 lb per MWh	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.0E-02 lb per MMBtu of heat input; or (5.8E-03 lb per MMBtu of heat input)	5.5E-02 lb per MMBtu of steam output or 2.8E-01 lb per MWh; or (1.6E-02 lb per MMBtu of steam	Collect a minimum of 2 dscm per run.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote a, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit be determined using CO₂ as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit and must also take into account that the 3-percent oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

^d Before October 6, 2025 you may comply with the emission limits in Table 15 to this subpart. On and after October 6, 2025], you must comply with the emission limits in this Table 2.

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
13. Hybrid suspension grate units designed to burn biomass/bio-based solid	a. CO (or CEMS)	3,500 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (900 ppm by volume on a dry basis corrected to 3-percent oxygen, ^c 30-day rolling average)	output or 8.1E-02 lb per MWh) 3.5 lb per MMBtu of steam output or 39 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	4.4E-01 lb per MMBtu of heat input; or (4.5E-04 lb per MMBtu of heat input)	5.5E-01 lb per MMBtu of steam output or 6.2 lb per MWh; or (5.7E-04 lb per MMBtu of steam output or 6.3E-03 lb per MWh)	Collect a minimum of 1 dscm per run.
14. Units	a. HCl	1.1E-03 lb per MMBtu of	1.4E-03 lb per	For M26A, collect a

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote a, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit be determined using CO₂ as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit and must also take into account that the 3-percent oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

^d Before October 6, 2025 you may comply with the emission limits in Table 15 to this subpart. On and after October 6, 2025], you must comply with the emission limits in this Table 2.

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
designed to burn liquid fuel	b.	heat input	MMBtu of steam output or 1.6E-02 lb per MWh	minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.
	Mercury	7.3E-07 lb per MMBtu of heat input	8.8E-07 lb per MMBtu of steam output or 1.1E-05 lb per MWh	For M29, collect a minimum of 3 dscm per run; for M30A or M30B collect a minimum sample as specified in the method, for ASTM D6784 ^b collect a minimum of 2 dscm.
15. Units designed to burn heavy liquid fuel	a. CO	130 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average	0.13 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable	5.9E-02 lb per MMBtu of heat input; or (2.0E-04 lb	7.2E-02 lb per MMBtu of steam	Collect a minimum of 1 dscm per run.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote a, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit be determined using CO₂ as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit and must also take into account that the 3-percent oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

^d Before October 6, 2025 you may comply with the emission limits in Table 15 to this subpart. On and after October 6, 2025], you must comply with the emission limits in this Table 2.

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
16. Units designed to burn light liquid fuel	PM (or TSM)	per MMBtu of heat input)	output or 8.2E-01 lb per MWh; or (2.5E-04 lb per MMBtu of steam output or 2.8E-03 lb per MWh)	1 hr minimum sampling time. Collect a minimum of 3 dscm per run.
	a. CO	130 ppm by volume on a dry basis corrected to 3-percent oxygen	0.13 lb per MMBtu of steam output or 1.4 lb per MWh	
	b. Filterable PM (or TSM)	7.9E-03 lb per MMBtu of heat input; or (6.2E-05 lb per MMBtu of heat input)	9.6E-03 lb per MMBtu of steam output or 1.1E-01 lb per MWh; or (7.5E-05 lb per MMBtu of steam output or 8.6E-04 lb per MWh)	
17. Units	a. CO	130 ppm by volume on a	0.13 lb per	1 hr minimum sampling

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote a, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit be determined using CO₂ as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit and must also take into account that the 3-percent oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

^d Before October 6, 2025 you may comply with the emission limits in Table 15 to this subpart. On and after October 6, 2025], you must comply with the emission limits in this Table 2.

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
designed to burn liquid fuel that are non-continental units	b.	dry basis corrected to 3-percent oxygen, 3-run average based on stack test	MMBtu of steam output or 1.4 lb per MWh; 3-run average	time.
	Filterable PM (or TSM)	2.2E-01 lb per MMBtu of heat input; or (8.6E-04 lb per MMBtu of heat input)	2.7E-01 lb per MMBtu of steam output or 3.1 lb per MWh; or (1.1E-03 lb per MMBtu of steam output or 1.2E-02 lb per MWh)	Collect a minimum of 2 dscm per run.
18. Units designed to burn gas 2 (other) gases	a. CO	130 ppm by volume on a dry basis corrected to 3-percent oxygen	0.16 lb per MMBtu of steam output or 1.0 lb per MWh	1 hr minimum sampling time.
	b. HCl	1.7E-03 lb per MMBtu of	2.9E-03 lb per	For M26A, collect a

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote a, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit be determined using CO₂ as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit and must also take into account that the 3-percent oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

^d Before October 6, 2025 you may comply with the emission limits in Table 15 to this subpart. On and after October 6, 2025], you must comply with the emission limits in this Table 2.

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
	c. Mercury	heat input 7.9E-06 lb per MMBtu of heat input	MMBtu of steam output or 1.8E-02 lb per MWh 1.4E-05 lb per MMBtu of steam output or 8.3E-05 lb per MWh	minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run. For M29, collect a minimum of 3 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 ^b collect a minimum of 2 dscm.
	d. Filterable PM (or TSM)	7.3E-03 lb per MMBtu of heat input or (2.1E-04 lb per MMBtu of heat input)	1.3E-02 lb per MMBtu of steam output or 7.6E-02 lb per MWh; or (3.5E-04 lb per MMBtu of steam output or 2.2E-03	Collect a minimum of 3 dscm per run.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote a, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit be determined using CO₂ as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit and must also take into account that the 3-percent oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

^d Before October 6, 2025 you may comply with the emission limits in Table 15 to this subpart. On and after October 6, 2025], you must comply with the emission limits in this Table 2.

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
			lb per MWh)	

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote a, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit be determined using CO₂ as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit and must also take into account that the 3-percent oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

^d Before October 6, 2025 you may comply with the emission limits in Table 15 to this subpart. On and after October 6, 2025], you must comply with the emission limits in this Table 2.

[87 FR 60849, Oct. 6, 2022]

Table 3 to Subpart DDDDD of Part 63—Work Practice Standards

As stated in § 63.7500, you must comply with the following applicable work practice standards:

If your unit is . . .	You must meet the following . . .
1. A new or existing boiler or process heater with a continuous oxygen trim system that maintains an optimum air to fuel ratio, or a heat input capacity of less than or equal to 5 million Btu per hour in any of the following subcategories: unit designed to burn gas 1; unit designed to burn gas 2 (other); or unit designed to burn light liquid, or a limited use boiler or process heater	Conduct a tune-up of the boiler or process heater every 5 years as specified in § 63.7540.
2. A new or existing boiler or process heater without a continuous oxygen trim system and with heat input capacity of less than 10 million Btu per hour in the unit designed to burn heavy liquid or unit designed to burn solid fuel subcategories; or a new or existing boiler or process heater with heat input capacity of less than 10 million Btu per hour, but greater than 5 million Btu per hour, in any of the following subcategories: unit designed to burn gas 1; unit designed to burn gas 2 (other); or unit designed to burn light liquid	Conduct a tune-up of the boiler or process heater biennially as specified in § 63.7540.
3. A new or existing boiler or process heater without a continuous oxygen trim system and with heat input capacity of 10 million Btu per hour or greater	Conduct a tune-up of the boiler or process heater annually as specified in § 63.7540. Units in either the Gas 1 or Metal Process Furnace subcategories will conduct this tune-up as a work practice for all regulated emissions under this subpart. Units in all other subcategories will conduct this tune-up as a work practice for dioxins/furans.
4. An existing boiler or process heater	Must have a one-time energy assessment performed by a
^a As specified in § 63.7555(d)(13), the source may request an alternative timeframe with the PM controls requirement to the permitting authority (state, local, or tribal agency) that has been delegated authority for this subpart by EPA. The source must provide evidence that (1) it is unable to safely engage and operate the PM control(s) to meet the “fuel firing + 1 hour” requirement and (2) the PM control device is appropriately designed and sized to meet the filterable PM emission limit. It is acknowledged that there may be another control device that has been installed other than ESP that provides additional PM control (e.g., scrubber).	

If your unit is . . .	You must meet the following . . .
located at a major source facility, not including limited use units	qualified energy assessor. An energy assessment completed on or after January 1, 2008, that meets or is amended to meet the energy assessment requirements in this table, satisfies the energy assessment requirement. A facility that operated under an energy management program developed according to the ENERGY STAR guidelines for energy management or compatible with ISO 50001 for at least one year between January 1, 2008 and the compliance date specified in § 63.7495 that includes the affected units also satisfies the energy assessment requirement. The energy assessment must include the following with extent of the evaluation for items a. to e. appropriate for the on-site technical hours listed in § 63.7575: a. A visual inspection of the boiler or process heater system. b. An evaluation of operating characteristics of the boiler or process heater systems, specifications of energy using systems, operating and maintenance procedures, and unusual operating constraints. c. An inventory of major energy use systems consuming energy from affected boilers and process heaters and which are under the control of the boiler/process heater owner/operator. d. A review of available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage. e. A review of the facility's energy management program and provide recommendations for improvements consistent with the definition of energy management program, if identified. f. A list of cost-effective energy conservation measures that are within the facility's control. g. A list of the energy savings potential of the energy conservation measures identified. h. A comprehensive report detailing the ways to improve

^a As specified in § 63.7555(d)(13), the source may request an alternative timeframe with the PM controls requirement to the permitting authority (state, local, or tribal agency) that has been delegated authority for this subpart by EPA. The source must provide evidence that (1) it is unable to safely engage and operate the PM control(s) to meet the “fuel firing + 1 hour” requirement and (2) the PM control device is appropriately designed and sized to meet the filterable PM emission limit. It is acknowledged that there may be another control device that has been installed other than ESP that provides additional PM control (e.g., scrubber).

If your unit is . . .	You must meet the following . . .
5. An existing or new boiler or process heater subject to emission limits in Table 1 or 2 or 11 through 15 to this subpart during startup	efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments. a. You must operate all CMS during startup. b. For startup of a boiler or process heater, you must use one or a combination of the following clean fuels: natural gas, synthetic natural gas, propane, other Gas 1 fuels, distillate oil, syngas, ultra-low sulfur diesel, fuel oil-soaked rags, kerosene, hydrogen, paper, cardboard, refinery gas, liquefied petroleum gas, clean dry biomass, and any fuels meeting the appropriate HCl, mercury and TSM emission standards by fuel analysis. c. You have the option of complying using either of the following work practice standards. (1) If you choose to comply using paragraph (1) of the definition of “startup” in § 63.7575, once you start firing fuels that are not clean fuels you must vent emissions to the main stack(s) and engage all of the applicable control devices except limestone injection in fluidized bed combustion (FBC) boilers, dry scrubber, fabric filter, and selective catalytic reduction (SCR). You must start your limestone injection in FBC boilers, dry scrubber, fabric filter, and SCR systems as expeditiously as possible. Startup ends when steam or heat is supplied for any purpose, OR (2) If you choose to comply using paragraph (2) of the definition of “startup” in § 63.7575, once you start to feed fuels that are not clean fuels, you must vent emissions to the main stack(s) and engage all of the applicable control devices so as to comply with the emission limits within 4 hours of start of supplying useful thermal energy. You must engage and operate PM control within one hour of first feeding fuels that are not clean fuels ^a. You must start all applicable control devices as expeditiously as possible, but, in any case, when necessary to comply with other standards applicable to the source by a permit limit or a rule other than this subpart that require operation of the control devices. You must develop and implement a written startup and shutdown plan, as specified in § 63.7505(e).

^a As specified in § 63.7555(d)(13), the source may request an alternative timeframe with the PM controls requirement to the permitting authority (state, local, or tribal agency) that has been delegated authority for this subpart by EPA. The source must provide evidence that (1) it is unable to safely engage and operate the PM control(s) to meet the “fuel firing + 1 hour” requirement and (2) the PM control device is appropriately designed and sized to meet the filterable PM emission limit. It is acknowledged that there may be another control device that has been installed other than ESP that provides additional PM control (e.g., scrubber).

If your unit is . . .	You must meet the following . . .
6. An existing or new boiler or process heater subject to emission limits in Table 1 or 2 or Tables 11 through 15 to this subpart during shutdown	d. You must comply with all applicable emission limits at all times except during startup and shutdown periods at which time you must meet this work practice. You must collect monitoring data during periods of startup, as specified in § 63.7535(b). You must keep records during periods of startup. You must provide reports concerning activities and periods of startup, as specified in § 63.7555. You must operate all CMS during shutdown. While firing fuels that are not clean fuels during shutdown, you must vent emissions to the main stack(s) and operate all applicable control devices, except limestone injection in FBC boilers, dry scrubber, fabric filter, and SCR but, in any case, when necessary to comply with other standards applicable to the source that require operation of the control device. If, in addition to the fuel used prior to initiation of shutdown, another fuel must be used to support the shutdown process, that additional fuel must be one or a combination of the following clean fuels: Natural gas, synthetic natural gas, propane, other Gas 1 fuels, distillate oil, syngas, ultra-low sulfur diesel, refinery gas, and liquefied petroleum gas. You must comply with all applicable emissions limits at all times except for startup or shutdown periods conforming with this work practice. You must collect monitoring data during periods of shutdown, as specified in § 63.7535(b). You must keep records during periods of shutdown. You must provide reports concerning activities and periods of shutdown, as specified in § 63.7555.

^a As specified in § 63.7555(d)(13), the source may request an alternative timeframe with the PM controls requirement to the permitting authority (state, local, or tribal agency) that has been delegated authority for this subpart by EPA. The source must provide evidence that (1) it is unable to safely engage and operate the PM control(s) to meet the “fuel firing + 1 hour” requirement and (2) the PM control device is appropriately designed and sized to meet the filterable PM emission limit. It is acknowledged that there may be another control device that has been installed other than ESP that provides additional PM control (e.g., scrubber).

[87 FR 60852, Oct. 6, 2022]

Table 4 to Subpart DDDDD of Part 63—Operating Limits for Boilers and Process Heaters

As stated in § 63.7500, you must comply with the applicable operating limits:

TABLE 4 TO SUBPART DDDDD OF PART 63—OPERATING LIMITS FOR BOILERS AND PROCESS HEATERS

When complying with a numerical emission limit under Table 1, 2, 11, 12, 13, 14, or 15 of this subpart using . . .	You must meet these operating limits. . .
1. Wet PM scrubber control on a boiler or process heater not using a PM CPMS	Maintain the 30-day rolling average pressure drop and the 30-day rolling average liquid flow rate at or above the lowest one-hour average pressure drop and the lowest one-hour average liquid flow rate, respectively, measured during the performance test demonstrating compliance with the PM emission limitation according to § 63.7530(b) and Table 7 to this subpart.
2. Wet acid gas (HCl) scrubber ^a control on a boiler or process heater not using a HCl CEMS	Maintain the 30-day rolling average effluent pH at or above the lowest one-hour average pH and the 30-day rolling average liquid flow rate at or above the lowest one-hour average liquid flow rate measured during the performance test demonstrating compliance with the HCl emission limitation according to § 63.7530(b) and Table 7 to this subpart.
3. Fabric filter control on a boiler or process heater not using a PM CPMS	a. Maintain opacity to less than or equal to 10 percent opacity or the highest hourly average opacity reading measured during the performance test run demonstrating compliance with the PM (or TSM) emission limitation (daily block average); or b. Install and operate a bag leak detection system according to § 63.7525 and operate the fabric filter such that the bag leak detection system alert is not activated more than 5 percent of the operating time during each 6-month period.
4. Electrostatic precipitator control on a boiler or process heater not using a PM CPMS	a. This option is for boilers and process heaters that operate dry control systems (i.e., an ESP without a wet scrubber). Existing and new boilers and process heaters must maintain opacity to less than or equal to 10 percent opacity or the highest hourly average opacity reading measured during the performance test run demonstrating compliance with the PM (or TSM) emission limitation (daily block average).

^a A wet acid gas scrubber is a control device that removes acid gases by contacting the combustion gas with an alkaline slurry or solution. Alkaline reagents include, but not limited to, lime, limestone and sodium.

When complying with a numerical emission limit under Table 1, 2, 11, 12, 13, 14, or 15 of this subpart using . .	You must meet these operating limits. . .
5. Dry scrubber or carbon injection control on a boiler or process heater not using a mercury CEMS	b. This option is only for boilers and process heaters not subject to PM CPMS or continuous compliance with an opacity limit (<i>i.e.</i>, dry ESP). Maintain the 30-day rolling average total secondary electric power input of the electrostatic precipitator at or above the operating limits established during the performance test according to § 63.7530(b) and Table 7 to this subpart. Maintain the minimum sorbent or carbon injection rate as defined in § 63.7575 of this subpart.
6. Any other add-on air pollution control type on a boiler or process heater not using a PM CPMS	This option is for boilers and process heaters that operate dry control systems. Existing and new boilers and process heaters must maintain opacity to less than or equal to 10 percent opacity or the highest hourly average opacity reading measured during the performance test run demonstrating compliance with the PM (or TSM) emission limitation (daily block average).
7. Performance testing	For boilers and process heaters that demonstrate compliance with a performance test, maintain the 30-day rolling average operating load of each unit such that it does not exceed 110 percent of the highest hourly average operating load recorded during the performance test.
8. Oxygen analyzer system	For boilers and process heaters subject to a CO emission limit that demonstrate compliance with an O ₂ analyzer system as specified in § 63.7525(a), maintain the 30-day rolling average oxygen content at or above the lowest hourly average oxygen concentration measured during the CO performance test, as specified in Table 8. This requirement does not apply to units that install an oxygen trim system since these units will set the trim system to the level specified in § 63.7525(a).
9. SO ₂ CEMS	For boilers or process heaters subject to an HCl emission limit that demonstrate compliance with an SO ₂ CEMS, maintain the 30-day rolling average SO ₂ emission rate at or below the highest hourly average SO ₂ concentration
^a A wet acid gas scrubber is a control device that removes acid gases by contacting the combustion gas with an alkaline slurry or solution. Alkaline reagents include, but not limited to, lime, limestone and sodium.	

When complying with a numerical emission limit under Table 1, 2, 11, 12, 13, 14, or 15 of this subpart using . .	You must meet these operating limits. . .
measured during the HCl performance test, as specified in Table 8.	
^a A wet acid gas scrubber is a control device that removes acid gases by contacting the combustion gas with an alkaline slurry or solution. Alkaline reagents include, but not limited to, lime, limestone and sodium.	

[80 FR 72874, Nov. 20, 2015, as amended at 87 FR 60853, Oct. 6, 2022]

Table 5 to Subpart DDDDD of Part 63—Performance Testing Requirements

As stated in § 63.7520, you must comply with the following requirements for performance testing for existing, new or reconstructed affected sources:

To conduct a performance test for the following pollutant . . .	You must. . .	Using, as appropriate . . .
1. Filterable PM	a. Select sampling ports location and the number of traverse points b. Determine velocity and volumetric flow-rate of the stack gas c. Determine oxygen or carbon dioxide concentration of the stack gas d. Measure the moisture content of the stack gas e. Measure the PM emission	Method 1 at 40 CFR part 60, appendix A-1 of this chapter. Method 2, 2F, or 2G at 40 CFR part 60, appendix A-1 or A-2 to part 60 of this chapter. Method 3A or 3B at 40 CFR part 60, appendix A-2 to part 60 of this chapter, or ANSI/ASME PTC 19.10-1981.^a Method 4 at 40 CFR part 60, appendix A-3 of this chapter. Method 5 or 17 (positive pressure fabric filters must use Method 5D) at 40 CFR part 60, appendix A-3 or A-6 of

^a Incorporated by reference, see § 63.14.

To conduct a performance test for the following pollutant . . .	You must. . .	Using, as appropriate . . .
2. TSM	concentration f. Convert emissions concentration to lb per MMBtu emission rates a. Select sampling ports location and the number of traverse points b. Determine velocity and volumetric flow-rate of the stack gas c. Determine oxygen or carbon dioxide concentration of the stack gas d. Measure the moisture content of the stack gas e. Measure the TSM emission concentration f. Convert emissions concentration to lb per MMBtu emission rates	this chapter. Method 19 F-factor methodology at 40 CFR part 60, appendix A-7 of this chapter. Method 1 at 40 CFR part 60, appendix A-1 of this chapter. Method 2, 2F, or 2G at 40 CFR part 60, appendix A-1 or A-2 of this chapter. Method 3A or 3B at 40 CFR part 60, appendix A-1 of this chapter, or ANSI/ASME PTC 19.10-1981.^a Method 4 at 40 CFR part 60, appendix A-3 of this chapter. Method 29 at 40 CFR part 60, appendix A-8 of this chapter Method 19 F-factor methodology at 40 CFR part 60, appendix A-7 of this chapter.
3. Hydrogen chloride	a. Select sampling ports location and the number of traverse points b. Determine velocity and volumetric flow-rate of the stack gas c. Determine oxygen or carbon dioxide concentration of the stack gas d. Measure the moisture content of	Method 1 at 40 CFR part 60, appendix A-1 of this chapter. Method 2, 2F, or 2G at 40 CFR part 60, appendix A-2 of this chapter. Method 3A or 3B at 40 CFR part 60, appendix A-2 of this chapter, or ANSI/ASME PTC 19.10-1981.^a Method 4 at 40 CFR part 60, appendix A-3 of this chapter.

^a Incorporated by reference, see § 63.14.

To conduct a performance test for the following pollutant . . .	You must. . .	Using, as appropriate . . .
4. Mercury	the stack gas	
	e. Measure the hydrogen chloride emission concentration	Method 26 or 26A (M26 or M26A) at 40 CFR part 60, appendix A-8 of this chapter.
	f. Convert emissions concentration to lb per MMBtu emission rates	Method 19 F-factor methodology at 40 CFR part 60, appendix A-7 of this chapter.
	a. Select sampling ports location and the number of traverse points	Method 1 at 40 CFR part 60, appendix A-1 of this chapter.
	b. Determine velocity and volumetric flow-rate of the stack gas	Method 2, 2F, or 2G at 40 CFR part 60, appendix A-1 or A-2 of this chapter.
	c. Determine oxygen or carbon dioxide concentration of the stack gas	Method 3A or 3B at 40 CFR part 60, appendix A-1 of this chapter, or ANSI/ASME PTC 19.10-1981. ^a
5. CO	d. Measure the moisture content of the stack gas	Method 4 at 40 CFR part 60, appendix A-3 of this chapter.
	e. Measure the mercury emission concentration	Method 29, 30A, or 30B (M29, M30A, or M30B) at 40 CFR part 60, appendix A-8 of this chapter or Method 101A at 40 CFR part 61, appendix B of this chapter, or ASTM Method D6784. ^a
	f. Convert emissions concentration to lb per MMBtu emission rates	Method 19 F-factor methodology at 40 CFR part 60, appendix A-7 of this chapter.
	a. Select the sampling ports location and the number of traverse points	Method 1 at 40 CFR part 60, appendix A-1 of this chapter.
	b. Determine oxygen concentration of the stack gas	Method 3A or 3B at 40 CFR part 60, appendix A-3 of this chapter, or ASTM D6522-00 (Reapproved 2005), or ANSI/ASME PTC 19.10-1981. ^a

^a Incorporated by reference, see § 63.14.

To conduct a performance test for the following pollutant . . .	You must . . .	Using, as appropriate . . .
	c. Measure the moisture content of the stack gas	Method 4 at 40 CFR part 60, appendix A-3 of this chapter.
	d. Measure the CO emission concentration	Method 10 at 40 CFR part 60, appendix A-4 of this chapter. Use a measurement span value of 2 times the concentration of the applicable emission limit.

^a Incorporated by reference, see § 63.14.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7200, Jan. 31, 2013; 80 FR 72825, Nov. 20, 2015]

Table 6 to Subpart DDDDD of Part 63—Fuel Analysis Requirements

As stated in § 63.7521, you must comply with the following requirements for fuel analysis testing for existing, new or reconstructed affected sources. However, equivalent methods (as defined in § 63.7575) may be used in lieu of the prescribed methods at the discretion of the source owner or operator:

To conduct a fuel analysis for the following pollutant . . .	You must . . .	Using . . .
1. Mercury	a. Collect fuel samples	Procedure in § 63.7521(c) or ASTM D5192 ^a , or ASTM D7430 ^a , or ASTM D6883 ^a , or ASTM D2234/D2234M ^a (for coal) or EPA 1631 or EPA 1631E or ASTM D6323 ^a (for solid), or EPA 821-R-01-013 (for liquid or solid), or ASTM D4177 ^a (for liquid), or ASTM D4057 ^a (for liquid), or equivalent.
	b. Composite fuel samples	Procedure in § 63.7521(d) or equivalent.
	c. Prepare composited fuel samples	EPA SW-846-3050B ^a (for solid samples), ASTM D2013/D2013M ^a (for coal), ASTM D5198 ^a (for biomass), or EPA 3050 ^a (for solid fuel), or EPA 821-R-01-013 ^a (for liquid or solid), or equivalent.
	d. Determine heat content of the fuel type	ASTM D5865 ^a (for coal) or ASTM E711 ^a (for biomass), or ASTM D5864 ^a for liquids and other solids, or ASTM D240 ^a or equivalent.

^a Incorporated by reference, see § 63.14.

To conduct a fuel analysis for the following pollutant . . .	You must . . .	Using . . .
2. HCl	e. Determine moisture content of the fuel type	ASTM D3173 ^a , ASTM E871 ^a , or ASTM D5864 ^a , or ASTM D240 ^a , or ASTM D95 ^a (for liquid fuels), or ASTM D4006 ^a (for liquid fuels), or equivalent.
	f. Measure mercury concentration in fuel sample	ASTM D6722 ^a (for coal), EPA SW-846-7471B ^a or EPA 1631 or EPA 1631E ^a (for solid samples), or EPA SW-846-7470A ^a or EPA SW-846-7471B ^a (for liquid samples), or EPA 821-R-01-013 ^a (for liquid or solid), or equivalent.
	g. Convert concentration into units of pounds of mercury per MMBtu of heat content	For fuel mixtures use Equation 8 in § 63.7530.
	a. Collect fuel samples	Procedure in § 63.7521(c) or ASTM D5192 ^a , or ASTM D7430 ^a , or ASTM D6883 ^a , or ASTM D2234/D2234M ^a (for coal) or ASTM D6323 ^a (for coal or biomass), ASTM D4177 ^a (for liquid fuels) or ASTM D4057 ^a (for liquid fuels), or equivalent.
	b. Composite fuel samples	Procedure in § 63.7521(d) or equivalent.
	c. Prepare composited fuel samples	EPA SW-846-3050B ^a (for solid samples), ASTM D2013/D2013M ^a (for coal), or ASTM D5198 ^a (for biomass), or EPA 3050 ^a or equivalent.
	d. Determine heat content of the fuel type	ASTM D5865 ^a (for coal) or ASTM E711 ^a (for biomass), ASTM D5864 ^a , ASTM D240 ^a or equivalent.
	e. Determine moisture content of the fuel type	ASTM D3173 ^a or ASTM E871 ^a , or D5864 ^a , or ASTM D240 ^a , or ASTM D95 ^a (for liquid fuels), or ASTM D4006 ^a (for liquid fuels), or equivalent.
	f. Measure chlorine concentration in fuel sample	EPA SW-846-9250 ^a , ASTM D6721 ^a , ASTM D4208 ^a (for coal), or EPA SW-846-5050 ^a or ASTM E776 ^a (for solid fuel), or EPA SW-846-9056 ^a or SW-846-9076 ^a (for solids or liquids) or equivalent.
3. Mercury Fuel Specification	g. Convert concentrations into units of pounds of HCl per MMBtu of heat content	For fuel mixtures use Equation 7 in § 63.7530 and convert from chlorine to HCl by multiplying by 1.028.
	a. Measure mercury concentration in the fuel sample and convert to	Method 30B (M30B) at 40 CFR part 60, appendix A-8 of this chapter or ASTM D5954 ^a , ASTM D6350 ^a , ISO 6978-1:2003(E) ^a , or ISO 6978-2:2003(E) ^a , or EPA-1631 ^a or

^a Incorporated by reference, see § 63.14.

To conduct a fuel analysis for the following pollutant . . .	You must . . .	Using . . .
for other gas 1 fuels	units of micrograms per cubic meter, or	equivalent.
	b. Measure mercury concentration in the exhaust gas when firing only the other gas 1 fuel is fired in the boiler or process heater	Method 29, 30A, or 30B (M29, M30A, or M30B) at 40 CFR part 60, appendix A-8 of this chapter or Method 101A or Method 102 at 40 CFR part 61, appendix B of this chapter, or ASTM Method D6784 ^a or equivalent.
4. TSM	a. Collect fuel samples	Procedure in § 63.7521(c) or ASTM D5192 ^a , or ASTM D7430 ^a , or ASTM D6883 ^a , or ASTM D2234/D2234M ^a (for coal) or ASTM D6323 ^a (for coal or biomass), or ASTM D4177 ^a , (for liquid fuels), or ASTM D4057 ^a (for liquid fuels), or equivalent.
	b. Composite fuel samples	Procedure in § 63.7521(d) or equivalent.
	c. Prepare composited fuel samples	EPA SW-846-3050B ^a (for solid samples), ASTM D2013/D2013M ^a (for coal), ASTM D5198 ^a or TAPPI T266 ^a (for biomass), or EPA 3050 ^a or equivalent.
	d. Determine heat content of the fuel type	ASTM D5865 ^a (for coal) or ASTM E711 ^a (for biomass), or ASTM D5864 ^a for liquids and other solids, or ASTM D240 ^a or equivalent.
	e. Determine moisture content of the fuel type	ASTM D3173 ^a or ASTM E871 ^a , or D5864 ^a , or ASTM D240 ^a , or ASTM D95 ^a (for liquid fuels), or ASTM D4006 ^a (for liquid fuels), or ASTM D4177 ^a (for liquid fuels) or ASTM D4057 ^a (for liquid fuels), or equivalent.
	f. Measure TSM concentration in fuel sample	ASTM D3683 ^a , or ASTM D4606 ^a , or ASTM D6357 ^a or EPA 200.8 ^a or EPA SW-846-6020 ^a , or EPA SW-846-6020A ^a , or EPA SW-846-6010C ^a , EPA 7060 ^a or EPA 7060A ^a (for arsenic only), or EPA SW-846-7740 ^a (for selenium only).
	g. Convert concentrations into units of pounds of TSM per MMBtu of heat content	For fuel mixtures use Equation 9 in § 63.7530.

^a Incorporated by reference, see § 63.14.

[83 FR 56725, Nov. 14, 2018]

Table 7 to Subpart DDDDD of Part 63—Establishing Operating Limits^{ab}

As stated in § 63.7520, you must comply with the following requirements for establishing operating limits:

TABLE 7 TO SUBPART DDDDD OF PART 63—ESTABLISHING OPERATING LIMITS^{a b}

If you have an applicable emission limit for . . .	And your operating limits are based on . . .	You must . . .	Using . . .	According to the following requirements
1. PM, TSM, or mercury	a. Wet scrubber operating parameters	i. Establish a site-specific minimum scrubber pressure drop and minimum flow rate operating limit according to § 63.7530(b)	(1) Data from the scrubber pressure drop and liquid flow rate monitors and the PM, TSM, or mercury performance test	(a) You must collect scrubber pressure drop and liquid flow rate data every 15 minutes during the entire period of the performance tests. (b) Determine the lowest hourly average scrubber pressure drop and liquid flow rate by computing the hourly averages using all of the 15-minute readings taken during each performance test.
	b. Electrostatic precipitator operating parameters (option only)	i. Establish a site-specific minimum total secondary electric power input according to § 63.7530(b)	(1) Data from the voltage and secondary amperage monitors	(a) You must collect secondary voltage and secondary amperage for each ESP cell and calculate total secondary electric power input data every 15

^a Operating limits must be confirmed or reestablished during performance tests.

^b If you conduct multiple performance tests, you must set the minimum liquid flow rate and pressure drop operating limits at the higher of the minimum values established during the performance tests. For a minimum oxygen level, if you conduct multiple performance tests, you must set the minimum oxygen level at the lower of the minimum values established during the performance tests. For maximum operating load, if you conduct multiple performance tests, you must set the maximum operating load at the lower of the maximum values established during the performance tests.

If you have an applicable emission limit for . . .	And your operating limits are based on . . .	You must . . .	Using . . .	According to the following requirements
	for units that operate wet scrubbers)		during the PM or mercury performance test	minutes during the entire period of the performance tests.
	c. Opacity	i. Establish a site-specific maximum opacity level	(1) Data from the opacity monitoring system during the PM performance test	(b) Determine the average total secondary electric power input by computing the hourly averages using all of the 15-minute readings taken during each performance test. (a) You must collect opacity readings every 15 minutes during the entire period of the performance tests. (b) Determine the average hourly opacity reading by computing the hourly averages using all of the 15-minute readings taken during each performance test. (c) Determine the highest hourly average opacity reading measured during the test run demonstrating compliance with the PM (or

^a Operating limits must be confirmed or reestablished during performance tests.

^b If you conduct multiple performance tests, you must set the minimum liquid flow rate and pressure drop operating limits at the higher of the minimum values established during the performance tests. For a minimum oxygen level, if you conduct multiple performance tests, you must set the minimum oxygen level at the lower of the minimum values established during the performance tests. For maximum operating load, if you conduct multiple performance tests, you must set the maximum operating load at the lower of the maximum values established during the performance tests.

If you have an applicable emission limit for . . .	And your operating limits are based on . . .	You must . . .	Using . . .	According to the following requirements
2. HCl	a. Wet scrubber operating parameters	i. Establish site-specific minimum effluent pH and flow rate operating limits according to § 63.7530(b)	(1) Data from the pH and liquid flow-rate monitors and the HCl performance test	TSM) emission limitation. (a) You must collect pH and liquid flow-rate data every 15 minutes during the entire period of the performance tests. (b) Determine the hourly average pH and liquid flow rate by computing the hourly averages using all of the 15-minute readings taken during each performance test.
	b. Dry scrubber operating parameters	i. Establish a site-specific minimum sorbent injection rate operating limit according to § 63.7530(b). If different acid gas sorbents are used during the HCl performance test, the average value for each sorbent becomes the site-specific operating limit for that sorbent	(1) Data from the sorbent injection rate monitors and HCl or mercury performance test	(a) You must collect sorbent injection rate data every 15 minutes during the entire period of the performance tests. (b) Determine the hourly average sorbent injection rate by computing the hourly averages using all of

^a Operating limits must be confirmed or reestablished during performance tests.

^b If you conduct multiple performance tests, you must set the minimum liquid flow rate and pressure drop operating limits at the higher of the minimum values established during the performance tests. For a minimum oxygen level, if you conduct multiple performance tests, you must set the minimum oxygen level at the lower of the minimum values established during the performance tests. For maximum operating load, if you conduct multiple performance tests, you must set the maximum operating load at the lower of the maximum values established during the performance tests.

If you have an applicable emission limit for . . .	And your operating limits are based on . . .	You must . . .	Using . . .	According to the following requirements
				the 15-minute readings taken during each performance test. (c) Determine the lowest hourly average of the three test run averages established during the performance test as your operating limit. When your unit operates at lower loads, multiply your sorbent injection rate by the load fraction, as defined in § 63.7575, to determine the required injection rate.
	c. Alternative Maximum SO ₂ emission rate	i. Establish a site-specific maximum SO ₂ emission rate operating limit according to § 63.7530(b)	(1) Data from SO ₂ CEMS and the HCl performance test	(a) You must collect the SO ₂ emissions data according to § 63.7525(m) during the most recent HCl performance tests. (b) The maximum SO ₂ emission rate is equal to the highest hourly average SO ₂ emission rate measured during the most recent HCl performance tests.
3. Mercury	a. Activated carbon injection	i. Establish a site-specific minimum activated carbon injection rate operating limit according to §	(1) Data from the activated carbon rate monitors	(a) You must collect activated carbon injection rate data every 15 minutes during the entire period of the performance tests.

^a Operating limits must be confirmed or reestablished during performance tests.

^b If you conduct multiple performance tests, you must set the minimum liquid flow rate and pressure drop operating limits at the higher of the minimum values established during the performance tests. For a minimum oxygen level, if you conduct multiple performance tests, you must set the minimum oxygen level at the lower of the minimum values established during the performance tests. For maximum operating load, if you conduct multiple performance tests, you must set the maximum operating load at the lower of the maximum values established during the performance tests.

If you have an applicable emission limit for . . .	And your operating limits are based on . . .	You must . . .	Using . . .	According to the following requirements
		63.7530(b)	and mercury performance test	(b) Determine the hourly average activated carbon injection rate by computing the hourly averages using all of the 15-minute readings taken during each performance test. (c) Determine the lowest hourly average established during the performance test as your operating limit. When your unit operates at lower loads, multiply your activated carbon injection rate by the load fraction, as defined in § 63.7575, to determine the required injection rate.
4. Carbon monoxide for which compliance is demonstrated by a performance test	a. Oxygen	i. Establish a unit-specific limit for minimum oxygen level according to § 63.7530(b)	(1) Data from the oxygen analyzer system specified in § 63.7525(a)	(a) You must collect oxygen data every 15 minutes during the entire period of the performance tests. (b) Determine the hourly average oxygen concentration by computing the hourly

^a Operating limits must be confirmed or reestablished during performance tests.

^b If you conduct multiple performance tests, you must set the minimum liquid flow rate and pressure drop operating limits at the higher of the minimum values established during the performance tests. For a minimum oxygen level, if you conduct multiple performance tests, you must set the minimum oxygen level at the lower of the minimum values established during the performance tests. For maximum operating load, if you conduct multiple performance tests, you must set the maximum operating load at the lower of the maximum values established during the performance tests.

If you have an applicable emission limit for . . .	And your operating limits are based on . . .	You must . . .	Using . . .	According to the following requirements
5. Any pollutant for which compliance is demonstrated by a performance test	a. Boiler or process heater operating load	i. Establish a unit specific limit for maximum operating load according to § 63.7520(c)	(1) Data from the operating load monitors or from steam generation monitors	averages using all of the 15-minute readings taken during each performance test. (c) Determine the lowest hourly average established during the performance test as your minimum operating limit. (a) You must collect operating load or steam generation data every 15 minutes during the entire period of the performance test. (b) Determine the average operating load by computing the hourly averages using all of the 15-minute readings taken during each performance test. (c) Determine the highest hourly average of the three test run averages during the performance test, and multiply this by 1.1 (110 percent) as your operating limit.

^a Operating limits must be confirmed or reestablished during performance tests.

^b If you conduct multiple performance tests, you must set the minimum liquid flow rate and pressure drop operating limits at the higher of the minimum values established during the performance tests. For a minimum oxygen level, if you conduct multiple performance tests, you must set the minimum oxygen level at the lower of the minimum values established during the performance tests. For maximum operating load, if you conduct multiple performance tests, you must set the maximum operating load at the lower of the maximum values established during the performance tests.

[87 FR 60853, Oct. 6, 2022]

Table 8 to Subpart DDDDD of Part 63—Demonstrating Continuous Compliance

As stated in § 63.7540, you must show continuous compliance with the emission limitations for each boiler or process heater according to the following:

If you must meet the following operating limits or work practice standards . . .	You must demonstrate continuous compliance by . . .
1. Opacity	a. Collecting the opacity monitoring system data according to § 63.7525(c) and § 63.7535; and b. Reducing the opacity monitoring data to 6-minute averages; and c. Maintaining daily block average opacity to less than or equal to 10 percent or the highest hourly average opacity reading measured during the performance test run demonstrating compliance with the PM (or TSM) emission limitation.
2. PM CPMS	a. Collecting the PM CPMS output data according to § 63.7525; b. Reducing the data to 30-day rolling averages; and c. Maintaining the 30-day rolling average PM CPMS output data to less than the operating limit established during the performance test according to § 63.7530(b)(4).
3. Fabric Filter Bag Leak Detection Operation	Installing and operating a bag leak detection system according to § 63.7525 and operating the fabric filter such that the requirements in § 63.7540(a)(7) are met.
4. Wet Scrubber Pressure Drop and Liquid Flow-rate	a. Collecting the pressure drop and liquid flow rate monitoring system data according to §§ 63.7525 and 63.7535; and b. Reducing the data to 30-day rolling averages; and c. Maintaining the 30-day rolling average pressure drop and liquid flow-rate at or above the operating limits established during the performance test according to § 63.7530(b).
5. Wet Scrubber pH	a. Collecting the pH monitoring system data according to §§ 63.7525 and 63.7535; and b. Reducing the data to 30-day rolling averages; and c. Maintaining the 30-day rolling average pH at or above the operating limit established during the performance test according to § 63.7530(b).
6. Dry Scrubber Sorbent or Carbon Injection Rate	a. Collecting the sorbent or carbon injection rate monitoring system data for the dry scrubber according to §§ 63.7525 and 63.7535; and b. Reducing the data to 30-day rolling averages; and c. Maintaining the 30-day rolling average sorbent or carbon injection rate at or above the minimum sorbent or carbon injection rate as defined in § 63.7575.

If you must meet the following operating limits or work practice standards . .	You must demonstrate continuous compliance by . . .
7. Electrostatic Precipitator Total Secondary Electric Power Input	a. Collecting the total secondary electric power input monitoring system data for the electrostatic precipitator according to §§ 63.7525 and 63.7535; and b. Reducing the data to 30-day rolling averages; and c. Maintaining the 30-day rolling average total secondary electric power input at or above the operating limits established during the performance test according to § 63.7530(b).
8. Emission limits using fuel analysis	a. Conduct monthly fuel analysis for HCl or mercury or TSM according to Table 6 to this subpart; and b. Reduce the data to 12-month rolling averages; and c. Maintain the 12-month rolling average at or below the applicable emission limit for HCl or mercury or TSM in Tables 1 and 2 or 11 through 15 to this subpart. d. Calculate the HCl, mercury, and/or TSM emission rate from the boiler or process heater in units of lb/MMBtu using Equation 15 and Equations 16, 17, and/or 18 in § 63.7530.
9. Oxygen content	a. Continuously monitor the oxygen content using an oxygen analyzer system according to § 63.7525(a). This requirement does not apply to units that install an oxygen trim system since these units will set the trim system to the level specified in § 63.7525(a)(7). b. Reducing the data to 30-day rolling averages; and c. Maintain the 30-day rolling average oxygen content at or above the lowest hourly average oxygen level measured during the CO performance test.
10. Boiler or process heater operating load	a. Collecting operating load data or steam generation data every 15 minutes. b. Reducing the data to 30-day rolling averages; and c. Maintaining the 30-day rolling average operating load such that it does not exceed 110 percent of the highest hourly average operating load recorded during the performance test according to § 63.7520(c).
11. SO ₂ emissions using SO ₂ CEMS	a. Collecting the SO₂ CEMS output data according to § 63.7525; b. Reducing the data to 30-day rolling averages; and c. Maintaining the 30-day rolling average SO₂ CEMS emission rate to a level at or below the highest hourly SO₂ rate measured during the HCl performance test according to § 63.7530.

Table 9 to Subpart DDDDD of Part 63—Reporting Requirements

As stated in § 63.7550, you must comply with the following requirements for reports:

You must submit a(n)	The report must contain . . .	You must submit the report . . .
1. Compliance report	a. Information required in § 63.7550(c)(1) through (5); and b. If there are no deviations from any emission limitation (emission limit and operating limit) that applies to you and there are no deviations from the requirements for work practice standards for periods of startup and shutdown in Table 3 to this subpart that apply to you, a statement that there were no deviations from the emission limitations and work practice standards during the reporting period. If there were no periods during which the CMSs, including continuous emissions monitoring system, continuous opacity monitoring system, and operating parameter monitoring systems, were out-of-control as specified in § 63.8(c)(7), a statement that there were no periods during which the CMSs were out-of-control during the reporting period; and c. If you have a deviation from any emission limitation (emission limit and operating limit) where you are not using a CMS to comply with that emission limit or operating limit, or a deviation from a work practice standard for periods of startup and shutdown, during the reporting period, the report must contain the information in § 63.7550(d); and d. If there were periods during which the CMSs, including continuous emissions monitoring system, continuous opacity monitoring system, and operating parameter monitoring systems, were out-of-control as specified in § 63.8(c)(7), or otherwise not operating, the report must contain the information in § 63.7550(e)	Semiannually, annually, biennially, or every 5 years according to the requirements in § 63.7550(b).

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7205, Jan. 31, 2013; 80 FR 72830, Nov. 20, 2015]

Table 10 to Subpart DDDDD of Part 63—Applicability of General Provisions to Subpart DDDDD

As stated in § 63.7565, you must comply with the applicable General Provisions according to the following:

Citation	Subject	Applies to subpart DDDDD
§ 63.1	Applicability	Yes.
§ 63.2	Definitions	Yes. Additional terms defined in § 63.7575
§ 63.3	Units and Abbreviations	Yes.
§ 63.4	Prohibited Activities and Circumvention	Yes.
§ 63.5	Preconstruction Review and Notification Requirements	Yes.
§ 63.6(a), (b)(1)-(b)(5), (b)(7), (c)	Compliance with Standards and Maintenance Requirements	Yes.
§ 63.6(e)(1)(i)	General duty to minimize emissions.	No. See § 63.7500(a)(3) for the general duty requirement.
§ 63.6(e)(1)(ii)	Requirement to correct malfunctions as soon as practicable.	No.
§ 63.6(e)(3)	Startup, shutdown, and malfunction plan requirements.	No.
§ 63.6(f)(1)	Startup, shutdown, and malfunction exemptions for compliance with non-opacity emission standards.	No.
§ 63.6(f)(2) and (3)	Compliance with non-opacity emission standards.	Yes.
§ 63.6(g)	Use of alternative standards	Yes, except § 63.7555(d)(13) specifies the procedure for application and approval of an

Citation	Subject	Applies to subpart DDDDD
§ 63.6(h)(1)	Startup, shutdown, and malfunction exemptions to opacity standards.	alternative timeframe with the PM controls requirement in the startup work practice (2). No. See § 63.7500(a).
§ 63.6(h)(2) to (h)(9)	Determining compliance with opacity emission standards	No. Subpart DDDDD specifies opacity as an operating limit not an emission standard.
§ 63.6(i)	Extension of compliance	Yes. Note: Facilities may also request extensions of compliance for the installation of combined heat and power, waste heat recovery, or gas pipeline or fuel feeding infrastructure as a means of complying with this subpart.
§ 63.6(j)	Presidential exemption.	Yes.
§ 63.7(a), (b), (c), and (d)	Performance Testing Requirements	Yes.
§ 63.7(e)(1)	Conditions for conducting performance tests	No. Subpart DDDDD specifies conditions for conducting performance tests at § 63.7520(a) to (c).
§ 63.7(e)(2)-(e)(9), (f), (g), and (h)	Performance Testing Requirements	Yes.
§ 63.8(a) and (b)	Applicability and Conduct of Monitoring	Yes.
§ 63.8(c)(1)	Operation and maintenance of CMS	Yes.
§ 63.8(c)(1)(i)	General duty to minimize emissions and CMS operation	No. See § 63.7500(a)(3).
§ 63.8(c)(1)(ii)	Operation and maintenance of CMS	Yes.
§ 63.8(c)(1)(iii)	Startup, shutdown, and malfunction plans for CMS	No.

Citation	Subject	Applies to subpart DDDDD
§ 63.8(c)(2) to (c)(9)	Operation and maintenance of CMS	Yes.
§ 63.8(d)(1) and (2)	Monitoring Requirements, Quality Control Program	Yes.
§ 63.8(d)(3)	Written procedures for CMS	Yes, except for the last sentence, which refers to a startup, shutdown, and malfunction plan. Startup, shutdown, and malfunction plans are not required.
§ 63.8(e)	Performance evaluation of a CMS	Yes.
§ 63.8(f)	Use of an alternative monitoring method.	Yes.
§ 63.8(g)	Reduction of monitoring data	Yes.
§ 63.9	Notification Requirements	Yes.
§ 63.10(a), (b)(1)	Recordkeeping and Reporting Requirements	Yes.
§ 63.10(b)(2)(i)	Recordkeeping of occurrence and duration of startups or shutdowns	Yes.
§ 63.10(b)(2)(ii)	Recordkeeping of malfunctions	No. See § 63.7555(d)(7) for recordkeeping of occurrence and duration and § 63.7555(d)(8) for actions taken during malfunctions.
§ 63.10(b)(2)(iii)	Maintenance records	Yes.
§ 63.10(b)(2)(iv) and (v)	Actions taken to minimize emissions during startup, shutdown, or malfunction	No.
§ 63.10(b)(2)(vi)	Recordkeeping for CMS malfunctions	Yes.

Citation	Subject	Applies to subpart DDDDD
§ 63.10(b)(2)(vii) to (xiv)	Other CMS requirements	Yes.
§ 63.10(b)(3)	Recordkeeping requirements for applicability determinations	No.
§ 63.10(c)(1) to (9)	Recordkeeping for sources with CMS	Yes.
§ 63.10(c)(10) and (11)	Recording nature and cause of malfunctions, and corrective actions	No. See § 63.7555(d)(7) for recordkeeping of occurrence and duration and § 63.7555(d)(8) for actions taken during malfunctions.
§ 63.10(c)(12) and (13)	Recordkeeping for sources with CMS	Yes.
§ 63.10(c)(15)	Use of startup, shutdown, and malfunction plan	No.
§ 63.10(d)(1) and (2)	General reporting requirements	Yes.
§ 63.10(d)(3)	Reporting opacity or visible emission observation results	No.
§ 63.10(d)(4)	Progress reports under an extension of compliance	Yes.
§ 63.10(d)(5)	Startup, shutdown, and malfunction reports	No. See § 63.7550(c)(11) for malfunction reporting requirements.
§ 63.10(e)	Additional reporting requirements for sources with CMS	Yes.
§ 63.10(f)	Waiver of recordkeeping or reporting requirements	Yes.
§ 63.11	Control Device Requirements	No.
§ 63.12	State Authority and Delegation	Yes.
§ 63.13-63.16	Addresses, Incorporation by Reference,	Yes.

Citation	Subject	Applies to subpart DDDDD
§ 63.1(a)(5),(a)(7)-(a)(9), (b)(2), (c)(3)-(4), (d), 63.6(b)(6), (c)(3), (c)(4), (d), (e)(2), (e)(3)(ii), (h)(3), (h)(5)(iv), 63.8(a)(3), 63.9(b)(3), (h)(4), 63.10(c)(2)-(4), (c)(9).	Availability of Information, Performance Track Provisions Reserved	No.

[76 FR 15664, Mar. 21, 2011, as amended at 78 FR 7205, Jan. 31, 2013; 80 FR 72830, Nov. 20, 2015]

Table 11 to Subpart DDDDD of Part 63—Alternative Emission Limits for New or Reconstructed Boilers and Process Heaters That Commenced Construction or Reconstruction After June 4, 2010, and Before May 20, 2011

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during periods of startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
1. Units in all subcategories designed to burn solid fuel	a. HCl	0.022 lb per MMBtu of heat input	For M26A, collect a minimum of 1 dscm per run; for M26 collect a

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provision of § 63.7515 are met. For all other pollutants that do not contain a footnote “a”, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during periods of startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
2. Units in all subcategories designed to burn solid fuel that combust at least 10 percent biomass/bio-based solids on an annual heat input basis and less than 10 percent coal/solid fossil fuels on an annual heat input basis	a. Mercury	8.0E-07 ^a lb per MMBtu of heat input	minimum of 120 liters per run. For M29, collect a minimum of 4 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 ^b collect a minimum of 4 dscm.
3. Units in all subcategories designed to burn solid fuel that combust at least 10 percent coal/solid fossil fuels on an annual heat input basis and less than 10 percent biomass/bio-based solids on an annual heat input basis	a. Mercury	2.0E-06 lb per MMBtu of heat input	For M29, collect a minimum of 4 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 ^b collect a minimum of 4 dscm.
4. Units design to burn coal/solid fossil fuel	a. Filterable PM (or TSM)	1.1E-03 lb per MMBtu of heat input; or (2.3E-05 lb per MMBtu of heat input)	Collect a minimum of 3 dscm per run.
5. Pulverized coal boilers designed to burn coal/solid fossil fuel	a. Carbon monoxide (CO) (or	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run	1 hr minimum sampling time.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provision of § 63.7515 are met. For all other pollutants that do not contain a footnote “a”, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during periods of startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
6. Stokers designed to burn coal/solid fossil fuel	CEMS) a. CO (or CEMS).	average; or (320 ppm by volume on a dry basis corrected to 3 percent oxygen, ^c 30-day rolling average) 130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (340 ppm by volume on a dry basis corrected to 3 percent oxygen, ^c 10-day rolling average)	1 hr minimum sampling time.
7. Fluidized bed units designed to burn coal/solid fossil fuel	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (230 ppm by volume on a dry basis corrected to 3 percent oxygen, ^c 30-day rolling average)	1 hr minimum sampling time.
8. Fluidized bed units with an integrated heat exchanger designed to burn coal/solid fossil fuel	a. CO (or CEMS)	140 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (150 ppm by	1 hr minimum sampling time.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provision of § 63.7515 are met. For all other pollutants that do not contain a footnote "a", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during periods of startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
9. Stokers/sloped grate/others designed to burn wet biomass fuel	a. CO (or CEMS)	volume on a dry basis corrected to 3 percent oxygen, ^c 30-day rolling average) 620 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (390 ppm by volume on a dry basis corrected to 3 percent oxygen, ^c 30-day rolling average)	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	3.0E-02 lb per MMBtu of heat input; or (2.6E-05 lb per MMBtu of heat input)	Collect a minimum of 2 dscm per run.
10. Stokers/sloped grate/others designed to burn kiln-dried biomass fuel	a. CO	560 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	3.0E-02 lb per MMBtu of heat input; or (4.0E-03 lb per MMBtu of heat input)	Collect a minimum of 2 dscm per run
11. Fluidized bed units designed to burn biomass/bio-based	a. CO (or CEMS)	230 ppm by volume on a dry basis corrected to 3	1 hr minimum sampling time.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provision of § 63.7515 are met. For all other pollutants that do not contain a footnote "a", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during periods of startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
solids		percent oxygen, 3-run average; or (310 ppm by volume on a dry basis corrected to 3 percent oxygen, ^c 30-day rolling average)	
12. Suspension burners designed to burn biomass/bio-based solids	b. Filterable PM (or TSM) a. CO (or CEMS)	9.8E-03 lb per MMBtu of heat input; or (8.3E-05 ^a lb per MMBtu of heat input) 2,400 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (2,000 ppm by volume on a dry basis corrected to 3 percent oxygen ^c 10-day rolling average)	Collect a minimum of 3 dscm per run 1 hr minimum sampling time.
13. Dutch Ovens/Pile burners designed to burn biomass/bio-based solids	b. Filterable PM (or TSM) a. CO (or CEMS)	3.0E-02 lb per MMBtu of heat input; or (6.5E-03 lb per MMBtu of heat input) 1,010 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run	Collect a minimum of 2 dscm per run. 1 hr minimum sampling time.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provision of § 63.7515 are met. For all other pollutants that do not contain a footnote "a", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during periods of startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
14. Fuel cell units designed to burn biomass/bio-based solids	b. Filterable PM (or TSM)	average; or (520 ppm by volume on a dry basis corrected to 3 percent oxygen ^c 10-day rolling average)	Collect a minimum of 3 dscm per run.
	a. CO	8.0E-03 lb per MMBtu of heat input; or (3.9E-05 lb per MMBtu of heat input)	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	910 ppm by volume on a dry basis corrected to 3 percent oxygen	Collect a minimum of 2 dscm per run.
	a. CO	2.0E-02 lb per MMBtu of heat input; or (2.9E-05 lb per MMBtu of heat input)	1 hr minimum sampling time.
15. Hybrid suspension grate boiler designed to burn biomass/bio-based solids	a. CO (or CEMS)	1,100 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (900 ppm by volume on a dry basis corrected to 3 percent oxygen, ^c 30-day rolling average)	Collect a minimum of 3
	b.	2.6E-02 lb per MMBtu of	

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provision of § 63.7515 are met. For all other pollutants that do not contain a footnote "a", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during periods of startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
16. Units designed to burn liquid fuel	Filterable PM (or TSM) a. HCl b. Mercury.	heat input; or (4.4E-04 lb per MMBtu of heat input) 4.4E-04 lb per MMBtu of heat input 4.8E-07 ^a lb per MMBtu of heat input	dscm per run For M26A: Collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run For M29, collect a minimum of 4 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 ^b collect a minimum of 4 dscm.
17. Units designed to burn heavy liquid fuel	a. CO b. Filterable PM (or TSM)	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average 1.3E-02 lb per MMBtu of heat input; or (7.5E-05 lb per MMBtu of heat input)	1 hr minimum sampling time. Collect a minimum of 3 dscm per run.
18. Units designed to burn light	a. CO	130 ppm by volume on a	1 hr minimum sampling

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provision of § 63.7515 are met. For all other pollutants that do not contain a footnote "a", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during periods of startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
liquid fuel		dry basis corrected to 3 percent oxygen	time.
	b. Filterable PM (or TSM)	2.0E-03 ^a lb per MMBtu of heat input; or (2.9E-05 lb per MMBtu of heat input)	Collect a minimum of 3 dscm per run
19. Units designed to burn liquid fuel that are non-continental units	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average based on stack test	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.3E-02 lb per MMBtu of heat input; or (8.6E-04 lb per MMBtu of heat input)	Collect a minimum of 4 dscm per run
20. Units designed to burn gas 2 (other) gases	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
	b. HCl	1.7E-03 lb per MMBtu of heat input	For M26A, Collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.
	c.	7.9E-06 lb per MMBtu of	For M29, collect a

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provision of § 63.7515 are met. For all other pollutants that do not contain a footnote "a", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during periods of startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
	Mercury	heat input	minimum of 3 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 ^b collect a minimum of 3 dscm.
	d. Filterable PM (or TSM)	6.7E-03 lb per MMBtu of heat input; or (2.1E-04 lb per MMBtu of heat input)	Collect a minimum of 3 dscm per run.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provision of § 63.7515 are met. For all other pollutants that do not contain a footnote “a”, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

[87 FR 60855, Oct. 6, 2022]

Table 12 to Subpart DDDDD of Part 63—Alternative Emission Limits for New or Reconstructed Boilers and Process Heaters That Commenced Construction or Reconstruction After May 20, 2011, and Before December 23, 2011

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during periods of startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
1. Units in all subcategories designed to burn solid fuel	a. HCl	0.022 lb per MMBtu of heat input	For M26A, collect a minimum of 1 dscm per run; for M26 collect a minimum of 120 liters per run.
	b. Mercury	3.5E-06 ^a lb per MMBtu of heat input	For M29, collect a minimum of 3 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 ^b collect a minimum of 3 dscm.
2. Units design to burn coal/ solid fossil fuel	a. Filterable PM (or TSM)	1.1E-03 lb per MMBtu of heat input; or (2.3E-05 lb per MMBtu of heat input)	Collect a minimum of 3 dscm per run.
3. Pulverized coal boilers designed to burn coal/solid fossil fuel	a. Carbon monoxide (CO) (or CEMS)	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (320 ppm by volume on a dry basis corrected to 3 percent oxygen, ^c 30-day rolling average)	1 hr minimum sampling time.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provision of § 63.7515 are met. For all other pollutants that do not contain a footnote “a”, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during periods of startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
4. Stokers designed to burn coal/solid fossil fuel	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (340 ppm by volume on a dry basis corrected to 3 percent oxygen, ^c 10-day rolling average)	1 hr minimum sampling time.
5. Fluidized bed units designed to burn coal/solid fossil fuel	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (230 ppm by volume on a dry basis corrected to 3 percent oxygen, ^c 30-day rolling average)	1 hr minimum sampling time.
6. Fluidized bed units with an integrated heat exchanger designed to burn coal/solid fossil fuel	a. CO (or CEMS)	140 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (150 ppm by volume on a dry basis corrected to 3 percent oxygen, ^c 30-day rolling average)	1 hr minimum sampling time.
7. Stokers/sloped grate/others designed to burn wet biomass fuel	a. CO (or CEMS)	620 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (390 ppm by volume on a dry basis corrected to 3 percent oxygen, ^c 30-day rolling average)	1 hr minimum sampling time.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provision of § 63.7515 are met. For all other pollutants that do not contain a footnote "a", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during periods of startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
8. Stokers/ sloped grate/ others designed to burn kiln-dried biomass fuel	b. Filterable PM (or TSM)	3.0E-02 lb per MMBtu of heat input; or (2.6E-05 lb per MMBtu of heat input)	Collect a minimum of 2 dscm per run.
	a. CO	460 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
9. Fluidized bed units designed to burn biomass/ bio-based solids	b. Filterable PM (or TSM)	3.0E-02 lb per MMBtu of heat input; or (4.0E-03 lb per MMBtu of heat input)	Collect a minimum of 2 dscm per run.
	a. CO (or CEMS)	260 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (310 ppm by volume on a dry basis corrected to 3 percent oxygen, ^c 30-day rolling average)	1 hr minimum sampling time.
10. Suspension burners	b. Filterable PM (or TSM)	9.8E-03 lb per MMBtu of heat input; or (8.3E-05 ^a lb per MMBtu of heat input)	Collect a minimum of 3 dscm per run.
	a. CO (or CEMS)	2,400 ppm by volume on a dry basis corrected to 3 percent	1 hr minimum sampling time.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provision of § 63.7515 are met. For all other pollutants that do not contain a footnote “a”, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during periods of startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
designed to burn biomass/bio-based solids		oxygen, 3-run average; or (2,000 ppm by volume on a dry basis corrected to 3 percent oxygen, ^c 10-day rolling average)	
	b. Filterable PM (or TSM)	3.0E-02 lb per MMBtu of heat input; or (6.5E-03 lb per MMBtu of heat input)	Collect a minimum of 2 dscm per run.
11. Dutch Ovens/Pile burners designed to burn biomass/bio-based solids	a. CO (or CEMS)	470 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (520 ppm by volume on a dry basis corrected to 3 percent oxygen, ^c 10-day rolling average)	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	3.2E-03 lb per MMBtu of heat input; or (3.9E-05 lb per MMBtu of heat input)	Collect a minimum of 3 dscm per run.
12. Fuel cell units designed to burn biomass/bio-based solids	a. CO	910 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
	b. Filterable PM (or	2.0E-02 lb per MMBtu of heat input; or (2.9E-05 lb per MMBtu of heat input)	Collect a minimum of 2 dscm per run.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provision of § 63.7515 are met. For all other pollutants that do not contain a footnote "a", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during periods of startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
13. Hybrid suspension grate boiler designed to burn biomass/ bio-based solids	TSM)		
	a. CO (or CEMS)	1,500 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (900 ppm by volume on a dry basis corrected to 3 percent oxygen, ^c 30-day rolling average)	1 hr minimum sampling time.
14. Units designed to burn liquid fuel	b. Filterable PM (or TSM)	2.6E-02 lb per MMBtu of heat input; or (4.4E-04 lb per MMBtu of heat input)	Collect a minimum of 3 dscm per run.
	a. HCl	4.4E-04 lb per MMBtu of heat input	For M26A: Collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.
15. Units designed to burn heavy liquid fuel	b. Mercury	4.8E-07 ^a lb per MMBtu of heat input	For M29, collect a minimum of 4 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 ^b collect a minimum of 4 dscm.
	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average	1 hr minimum sampling time.
	b.	1.3E-02 lb per MMBtu of heat	Collect a minimum of 2 dscm

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provision of § 63.7515 are met. For all other pollutants that do not contain a footnote "a", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during periods of startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
	Filterable PM (or TSM)	input; or (7.5E-05 lb per MMBtu of heat input)	per run.
16. Units designed to burn light liquid fuel	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	1.3E-03 ^a lb per MMBtu of heat input; or (2.9E-05 lb per MMBtu of heat input)	Collect a minimum of 3 dscm per run.
17. Units designed to burn liquid fuel that are non-continental units	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average based on stack test	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.3E-02 lb per MMBtu of heat input; or (8.6E-04 lb per MMBtu of heat input)	Collect a minimum of 4 dscm per run.
18. Units designed to burn gas 2 (other) gases	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
	b. HCl	1.7E-03 lb per MMBtu of heat	For M26A, Collect a minimum of

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provision of § 63.7515 are met. For all other pollutants that do not contain a footnote "a", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during periods of startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
	c. Mercury	input 7.9E-06 lb per MMBtu of heat input	2 dscm per run; for M26, collect a minimum of 240 liters per run. For M29, collect a minimum of 3 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 ^b collect a minimum of 3 dscm.
	d. Filterable PM (or TSM)	6.7E-03 lb per MMBtu of heat input; or (2.1E-04 lb per MMBtu of heat input)	Collect a minimum of 3 dscm per run.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provision of § 63.7515 are met. For all other pollutants that do not contain a footnote “a”, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

[87 FR 60857, Oct. 6, 2022]

Table 13 to Subpart DDDDD of Part 63—Alternative Emission Limits for New or Reconstructed Boilers and Process Heaters That Commenced Construction or Reconstruction After December 23, 2011, and Before April 1, 2013

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during periods of startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
1. Units in all subcategories designed to burn solid fuel	a. HCl	0.022 lb per MMBtu of heat input	For M26A, collect a minimum of 1 dscm per run; for M26 collect a minimum of 120 liters per run.
	b. Mercury	8.6E-07 ^a lb per MMBtu of heat input	For M29, collect a minimum of 4 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 ^b collect a minimum of 4 dscm.
2. Pulverized coal boilers designed to burn coal/solid fossil fuel	a. Carbon monoxide (CO) (or CEMS)	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (320 ppm by volume on a dry basis corrected to 3 percent oxygen, ^c 30-day rolling average)	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	1.1E-03 lb per MMBtu of heat input; or (2.8E-05 lb per MMBtu of heat input)	Collect a minimum of 3 dscm per run.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit and you are not required to conduct testing for CEMS or CPMS monitor certification, you can skip testing according to § 63.7515 if all of the other provision of § 63.7515 are met. For all other pollutants that do not contain a footnote “a”, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during periods of startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
3. Stokers designed to burn coal/solid fossil fuel	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (340 ppm by volume on a dry basis corrected to 3 percent oxygen, ^c 10-day rolling average)	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.8E-02 lb per MMBtu of heat input; or (2.3E-05 lb per MMBtu of heat input)	Collect a minimum of 2 dscm per run.
4. Fluidized bed units designed to burn coal/ solid fossil fuel	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (230 ppm by volume on a dry basis corrected to 3 percent oxygen, ^c 30-day rolling average)	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	1.1E-03 lb per MMBtu of heat input; or (2.3E-05 lb per MMBtu of heat input)	Collect a minimum of 3 dscm per run.
5. Fluidized bed units with an integrated heat exchanger designed to	a. CO (or CEMS)	140 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (150 ppm by volume on a dry basis corrected to 3 percent oxygen, ^c 30-day rolling	1 hr minimum sampling time.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit and you are not required to conduct testing for CEMS or CPMS monitor certification, you can skip testing according to § 63.7515 if all of the other provision of § 63.7515 are met. For all other pollutants that do not contain a footnote “a”, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during periods of startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
burn coal/solid fossil fuel		average)	
	b. Filterable PM (or TSM)	1.1E-03 lb per MMBtu of heat input; or (2.3E-05 lb per MMBtu of heat input)	Collect a minimum of 3 dscm per run.
6. Stokers/sloped grate/others designed to burn wet biomass fuel	a. CO (or CEMS)	620 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (410 ppm by volume on a dry basis corrected to 3 percent oxygen, ^c 10-day rolling average)	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	3.0E-02 lb per MMBtu of heat input; or (2.6E-05 lb per MMBtu of heat input)	Collect a minimum of 2 dscm per run.
7. Stokers/sloped grate/others designed to burn kiln-dried biomass fuel	a. CO	460 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	3.2E-01 lb per MMBtu of heat input; or (4.0E-03 lb per MMBtu of heat input)	Collect a minimum of 2 dscm per run.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit and you are not required to conduct testing for CEMS or CPMS monitor certification, you can skip testing according to § 63.7515 if all of the other provision of § 63.7515 are met. For all other pollutants that do not contain a footnote "a", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during periods of startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
8. Fluidized bed units designed to burn biomass/bio-based solids	TSM)		
	a. CO (or CEMS)	230 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (310 ppm by volume on a dry basis corrected to 3 percent oxygen, ^c 30-day rolling average)	1 hr minimum sampling time.
9. Suspension burners designed to burn biomass/bio-based solids	b. Filterable PM (or TSM)	9.8E-03 lb per MMBtu of heat input; or (8.3E-05 ^a lb per MMBtu of heat input)	Collect a minimum of 3 dscm per run.
	a. CO (or CEMS)	2,400 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (2,000 ppm by volume on a dry basis corrected to 3 percent oxygen, ^c 10-day rolling average)	1 hr minimum sampling time.
10. Dutch Ovens/Pile burners designed to	b. Filterable PM (or TSM)	5.1E-02 lb per MMBtu of heat input; or (6.5E-03 lb per MMBtu of heat input)	Collect a minimum of 2 dscm per run.
	a. CO (or CEMS)	810 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (520 ppm by volume on a dry basis corrected to	1 hr minimum sampling time.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit and you are not required to conduct testing for CEMS or CPMS monitor certification, you can skip testing according to § 63.7515 if all of the other provision of § 63.7515 are met. For all other pollutants that do not contain a footnote “a”, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during periods of startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
burn biomass/ bio-based solids		3 percent oxygen, ^c 10-day rolling average)	
	b. Filterable PM (or TSM)	3.6E-02 lb per MMBtu of heat input; or (3.9E-05 lb per MMBtu of heat input)	Collect a minimum of 2 dscm per run.
11. Fuel cell units designed to burn biomass/bio-based solids	a. CO	910 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.0E-02 lb per MMBtu of heat input; or (2.9E-05 lb per MMBtu of heat input)	Collect a minimum of 2 dscm per run.
12. Hybrid suspension grate boiler designed to burn biomass/bio-based solids	a. CO (or CEMS)	1,500 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (900 ppm by volume on a dry basis corrected to 3 percent oxygen, ^c 30-day rolling average)	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.6E-02 lb per MMBtu of heat input; or (4.4E-04 lb per MMBtu of heat input)	Collect a minimum of 3 dscm per run.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit and you are not required to conduct testing for CEMS or CPMS monitor certification, you can skip testing according to § 63.7515 if all of the other provision of § 63.7515 are met. For all other pollutants that do not contain a footnote “a”, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during periods of startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
13. Units designed to burn liquid fuel	a. HCl	1.2E-03 lb per MMBtu of heat input	For M26A: Collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.
	b. Mercury	4.9E-07 ^a lb per MMBtu of heat input	For M29, collect a minimum of 4 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 ^b collect a minimum of 4 dscm.
14. Units designed to burn heavy liquid fuel	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (18 ppm by volume on a dry basis corrected to 3 percent oxygen, ^c 10-day rolling average)	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	1.3E-03 lb per MMBtu of heat input; or (7.5E-05 lb per MMBtu of heat input)	Collect a minimum of 3 dscm per run.
15. Units designed to burn light liquid fuel	a. CO (or CEMS)	130 ^a ppm by volume on a dry basis corrected to 3 percent oxygen; or (60 ppm by volume on a dry basis corrected to 3 percent oxygen, ^c 1-day block average).	1 hr minimum sampling time.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit and you are not required to conduct testing for CEMS or CPMS monitor certification, you can skip testing according to § 63.7515 if all of the other provision of § 63.7515 are met. For all other pollutants that do not contain a footnote "a", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during periods of startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
16. Units designed to burn liquid fuel that are non-continental units	b. Filterable PM (or TSM)	1.1E-03 ^a lb per MMBtu of heat input; or (2.9E-05 lb per MMBtu of heat input)	Collect a minimum of 3 dscm per run.
	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average based on stack test; or (91 ppm by volume on a dry basis corrected to 3 percent oxygen, ^c 3-hour rolling average)	1 hr minimum sampling time.
17. Units designed to burn gas 2 (other) gases	b. Filterable PM (or TSM)	2.3E-02 lb per MMBtu of heat input; or (8.6E-04 lb per MMBtu of heat input)	Collect a minimum of 2 dscm per run.
	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen	1 hr minimum sampling time.
	b. HCl	1.7E-03 lb per MMBtu of heat input	For M26A, Collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.
	c. Mercury	7.9E-06 lb per MMBtu of heat input	For M29, collect a minimum of 3 dscm per run; for M30A or M30B, collect a minimum

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit and you are not required to conduct testing for CEMS or CPMS monitor certification, you can skip testing according to § 63.7515 if all of the other provision of § 63.7515 are met. For all other pollutants that do not contain a footnote “a”, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during periods of startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
	d. Filterable PM (or TSM)	6.7E-03 lb per MMBtu of heat input; or (2.1E-04 lb per MMBtu of heat input)	sample as specified in the method; for ASTM D6784 ^b collect a minimum of 3 dscm. Collect a minimum of 3 dscm per run.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit and you are not required to conduct testing for CEMS or CPMS monitor certification, you can skip testing according to § 63.7515 if all of the other provision of § 63.7515 are met. For all other pollutants that do not contain a footnote “a”, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

[87 FR 60859, Oct. 6, 2022]

Table 14 to Subpart DDDDD of Part 63—Alternative Emission Limits for New or Reconstructed Boilers and Process Heaters ^c

As stated in § 63.7500, you may continue to comply with the following applicable emission limits until October 6, 2025:

[UNITS WITH HEAT INPUT CAPACITY OF 10 MILLION BTU PER HOUR OR GREATER]

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
1. Units in all subcategories designed to burn solid fuel.	a. HCl	2.2E-02 lb per MMBtu of heat input	2.5E-02 lb per MMBtu of steam output or 0.28 lb per MWh	For M26A, collect a minimum of 1 dscm per run; for M26 collect a minimum of 120 liters per run.
	b. Mercury	8.0E-07 ^a lb per MMBtu of heat input	8.7E-07 ^a lb per MMBtu of steam	For M29, collect a minimum of 4 dscm per

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote “a”, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before April 1, 2013, you may comply with the emission limits in Table 11, 12, or 13 to this subpart until January 31, 2016. On and after January 31, 2016, but before October 6, 2025 you may comply with the emission limits in this Table 14. On and after October 6, 2025, you must comply with the emission limits in Table 1 to this subpart.

^d An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
2. Units designed to burn coal/solid fossil fuel	a. Filterable PM (or TSM)	1.1E-03 lb per MMBtu of heat input; or (2.3E-05 lb per MMBtu of heat input)	output or 1.1E-05 ^a lb per MWh 1.1E-03 lb per MMBtu of steam output or 1.4E-02 lb per MWh; or (2.7E-05 lb per MMBtu of steam output or 2.9E-04 lb per MWh)	run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 ^b collect a minimum of 4 dscm. Collect a minimum of 3 dscm per run.
3. Pulverized coal boilers	a. Carbon monoxide	130 ppm by volume on a dry basis corrected to	0.11 lb per MMBtu of steam	1 hr minimum sampling time.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote “a”, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before April 1, 2013, you may comply with the emission limits in Table 11, 12, or 13 to this subpart until January 31, 2016. On and after January 31, 2016, but before October 6, 2025 you may comply with the emission limits in this Table 14. On and after October 6, 2025, you must comply with the emission limits in Table 1 to this subpart.

^d An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
designed to burn coal/ solid fossil fuel	(CO) (or CEMS)	3-percent oxygen, 3-run average; or (320 ppm by volume on a dry basis corrected to 3-percent oxygen, ^d 30-day rolling average)	output or 1.4 lb per MWh; 3-run average	
4. Stokers/ others designed to burn coal/ solid fossil fuel	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (340 ppm by volume on a dry basis corrected to 3-percent oxygen, ^d 30-day rolling average)	0.12 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average	1 hr minimum sampling time.
5. Fluidized bed units	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to	0.11 lb per MMBtu of steam	1 hr minimum sampling time.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote "a", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before April 1, 2013, you may comply with the emission limits in Table 11, 12, or 13 to this subpart until January 31, 2016. On and after January 31, 2016, but before October 6, 2025 you may comply with the emission limits in this Table 14. On and after October 6, 2025, you must comply with the emission limits in Table 1 to this subpart.

^d An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
designed to burn coal/ solid fossil fuel		3-percent oxygen, 3-run average; or (230 ppm by volume on a dry basis corrected to 3-percent oxygen, ^d 30-day rolling average)	output or 1.4 lb per MWh; 3-run average	
6. Fluidized bed units with an integrated heat exchanger designed to burn coal/ solid fossil fuel	a. CO (or CEMS)	140 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (150 ppm by volume on a dry basis corrected to 3- percent oxygen, ^d 30-day rolling average)	1.2E-01 lb per MMBtu of steam output or 1.5 lb per MWh; 3-run average	1 hr minimum sampling time.
7. Stokers/	a. CO (or	620 ppm by volume on a	5.8E-01 lb per	1 hr minimum sampling

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote "a", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before April 1, 2013, you may comply with the emission limits in Table 11, 12, or 13 to this subpart until January 31, 2016. On and after January 31, 2016, but before October 6, 2025 you may comply with the emission limits in this Table 14. On and after October 6, 2025, you must comply with the emission limits in Table 1 to this subpart.

^d An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
sloped grate/ others designed to burn wet biomass fuel	CEMS)	dry basis corrected to 3-percent oxygen, 3-run average; or (390 ppm by volume on a dry basis corrected to 3-percent oxygen, ^d 30-day rolling average)	MMBtu of steam output or 6.8 lb per MWh; 3-run average	time.
	b. Filterable PM (or TSM)	3.0E-02 lb per MMBtu of heat input; or (2.6E-05 lb per MMBtu of heat input)	3.5E-02 lb per MMBtu of steam output or 4.2E-01 lb per MWh; or (2.7E-05 lb per MMBtu of steam output or 3.7E-04 lb per MWh)	Collect a minimum of 2 dscm per run.
8. Stokers/	a. CO	460 ppm by volume on a	4.2E-01 lb per	1 hr minimum sampling

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote "a", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before April 1, 2013, you may comply with the emission limits in Table 11, 12, or 13 to this subpart until January 31, 2016. On and after January 31, 2016, but before October 6, 2025 you may comply with the emission limits in this Table 14. On and after October 6, 2025, you must comply with the emission limits in Table 1 to this subpart.

^d An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
sloped grate/ others designed to burn kiln-dried biomass fuel	b. Filterable PM (or TSM)	dry basis corrected to 3-percent oxygen 3.0E-02 lb per MMBtu of heat input; or (4.0E-03 lb per MMBtu of heat input)	MMBtu of steam output or 5.1 lb per MWh 3.5E-02 lb per MMBtu of steam output or 4.2E-01 lb per MWh; or (4.2E-03 lb per MMBtu of steam output or 5.6E-02 lb per MWh)	time. Collect a minimum of 2 dscm per run.
9. Fluidized bed units designed to	a. CO (or CEMS)	230 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run	2.2E-01 lb per MMBtu of steam output or 2.6 lb	1 hr minimum sampling time.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote "a", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before April 1, 2013, you may comply with the emission limits in Table 11, 12, or 13 to this subpart until January 31, 2016. On and after January 31, 2016, but before October 6, 2025 you may comply with the emission limits in this Table 14. On and after October 6, 2025, you must comply with the emission limits in Table 1 to this subpart.

^d An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
burn biomass/bio-based solids	b. Filterable PM (or TSM)	average; or (310 ppm by volume on a dry basis corrected to 3-percent oxygen, ^d 30-day rolling average) 9.8E-03 lb per MMBtu of heat input; or (8.3E-05 ^a lb per MMBtu of heat input)	per MWh; 3-run average 1.2E-02 lb per MMBtu of steam output or 0.14 lb per MWh; or (1.1E-04 ^a lb per MMBtu of steam output or 1.2E-03 ^a lb per MWh)	Collect a minimum of 3 dscm per run.
10. Suspension burners	a. CO (or CEMS)	2,400 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run	1.9 lb per MMBtu of steam output or 27 lb per MWh;	1 hr minimum sampling time.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote “a”, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before April 1, 2013, you may comply with the emission limits in Table 11, 12, or 13 to this subpart until January 31, 2016. On and after January 31, 2016, but before October 6, 2025 you may comply with the emission limits in this Table 14. On and after October 6, 2025, you must comply with the emission limits in Table 1 to this subpart.

^d An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
designed to burn biomass/bio-based solids	b. Filterable PM (or TSM)	average; or (2,000 ppm by volume on a dry basis corrected to 3-percent oxygen, ^d 10-day rolling average) 3.0E-02 lb per MMBtu of heat input; or (6.5E-03 lb per MMBtu of heat input)	3-run average 3.1E-02 lb per MMBtu of steam output or 4.2E-01 lb per MWh; or (6.6E-03 lb per MMBtu of steam output or 9.1E-02 lb per MWh)	Collect a minimum of 2 dscm per run.
11. Dutch Ovens/Pile burners	a. CO (or CEMS)	330 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run	3.5E-01 lb per MMBtu of steam output or 3.6 lb	1 hr minimum sampling time.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote “a”, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before April 1, 2013, you may comply with the emission limits in Table 11, 12, or 13 to this subpart until January 31, 2016. On and after January 31, 2016, but before October 6, 2025 you may comply with the emission limits in this Table 14. On and after October 6, 2025, you must comply with the emission limits in Table 1 to this subpart.

^d An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
designed to burn biomass/bio-based solids	b. Filterable PM (or TSM)	average; or (520 ppm by volume on a dry basis corrected to 3-percent oxygen, ^d 10-day rolling average) 3.2E-03 lb per MMBtu of heat input; or (3.9E-05 lb per MMBtu of heat input)	per MWh; 3-run average 4.3E-03 lb per MMBtu of steam output or 4.5E-02 lb per MWh; or (5.2E-05 lb per MMBtu of steam output or 5.5E-04 lb per MWh)	Collect a minimum of 3 dscm per run.
12. Fuel cell units designed to	a. CO	910 ppm by volume on a dry basis corrected to 3-percent oxygen	1.1 lb per MMBtu of steam output or 1.0E+01 lb per	1 hr minimum sampling time.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote “a”, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before April 1, 2013, you may comply with the emission limits in Table 11, 12, or 13 to this subpart until January 31, 2016. On and after January 31, 2016, but before October 6, 2025 you may comply with the emission limits in this Table 14. On and after October 6, 2025, you must comply with the emission limits in Table 1 to this subpart.

^d An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
burn biomass/bio-based solids	b. Filterable PM (or TSM)	2.0E-02 lb per MMBtu of heat input; or (2.9E-05 lb per MMBtu of heat input)	MWh 3.0E-02 lb per MMBtu of steam output or 2.8E-01 lb per MWh; or (5.1E-05 lb per MMBtu of steam output or 4.1E-04 lb per MWh)	Collect a minimum of 2 dscm per run.
13. Hybrid suspension grate boiler designed to burn	a. CO (or CEMS)	1,100 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (900 ppm by volume on a dry basis	1.4 lb per MMBtu of steam output or 12 lb per MWh; 3-run average	1 hr minimum sampling time.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote “a”, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before April 1, 2013, you may comply with the emission limits in Table 11, 12, or 13 to this subpart until January 31, 2016. On and after January 31, 2016, but before October 6, 2025 you may comply with the emission limits in this Table 14. On and after October 6, 2025, you must comply with the emission limits in Table 1 to this subpart.

^d An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
biomass/bio-based solids	b. Filterable PM (or TSM)	corrected to 3-percent oxygen, ^d 30-day rolling average) 2.6E-02 lb per MMBtu of heat input; or (4.4E-04 lb per MMBtu of heat input)	3.3E-02 lb per MMBtu of steam output or 3.7E-01 lb per MWh; or (5.5E-04 lb per MMBtu of steam output or 6.2E-03 lb per MWh)	Collect a minimum of 3 dscm per run.
14. Units designed to burn liquid fuel	a. HCl	4.4E-04 lb per MMBtu of heat input	4.8E-04 lb per MMBtu of steam output or 6.1E-03 lb per MWh	For M26A: Collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote “a”, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before April 1, 2013, you may comply with the emission limits in Table 11, 12, or 13 to this subpart until January 31, 2016. On and after January 31, 2016, but before October 6, 2025 you may comply with the emission limits in this Table 14. On and after October 6, 2025, you must comply with the emission limits in Table 1 to this subpart.

^d An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
15. Units designed to burn heavy liquid fuel	b. Mercury	4.8E-07 ^a lb per MMBtu of heat input	5.3E-07 ^a lb per MMBtu of steam output or 6.7E-06 ^a lb per MWh	For M29, collect a minimum of 4 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 ^b collect a minimum of 4 dscm.
	a. CO	130 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average	0.13 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable PM (or	1.3E-02 lb per MMBtu of heat input; or (7.5E-05 ^a lb per MMBtu of heat	1.5E-02 lb per MMBtu of steam output or 1.8E-01	Collect a minimum of 3 dscm per run.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote “a”, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before April 1, 2013, you may comply with the emission limits in Table 11, 12, or 13 to this subpart until January 31, 2016. On and after January 31, 2016, but before October 6, 2025 you may comply with the emission limits in this Table 14. On and after October 6, 2025, you must comply with the emission limits in Table 1 to this subpart.

^d An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
16. Units designed to burn light liquid fuel	TSM)	input)	lb per MWh; or (8.2E-05 ^a lb per MMBtu of steam output or 1.1E-03 ^a lb per MWh)	
	a. CO	130 ppm by volume on a dry basis corrected to 3-percent oxygen	0.13 lb per MMBtu of steam output or 1.4 lb per MWh	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	1.1E-03 ^a lb per MMBtu of heat input; or (2.9E-05 lb per MMBtu of heat input)	1.2E-03 ^a lb per MMBtu of steam output or 1.6E-02 ^a lb per MWh; or (3.2E-05 lb per MMBtu of steam output or 4.0E-04	Collect a minimum of 3 dscm per run.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote "a", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before April 1, 2013, you may comply with the emission limits in Table 11, 12, or 13 to this subpart until January 31, 2016. On and after January 31, 2016, but before October 6, 2025 you may comply with the emission limits in this Table 14. On and after October 6, 2025, you must comply with the emission limits in Table 1 to this subpart.

^d An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
17. Units designed to burn liquid fuel that are non-continental units	a. CO	130 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average based on stack test	lb per MWh) 0.13 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.3E-02 lb per MMBtu of heat input; or (8.6E-04 lb per MMBtu of heat input)	2.5E-02 lb per MMBtu of steam output or 3.2E-01 lb per MWh; or (9.4E-04 lb per MMBtu of steam output or 1.2E-02 lb per MWh)	Collect a minimum of 4 dscm per run.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote “a”, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before April 1, 2013, you may comply with the emission limits in Table 11, 12, or 13 to this subpart until January 31, 2016. On and after January 31, 2016, but before October 6, 2025 you may comply with the emission limits in this Table 14. On and after October 6, 2025, you must comply with the emission limits in Table 1 to this subpart.

^d An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
18. Units designed to burn gas 2 (other) gases	a. CO	130 ppm by volume on a dry basis corrected to 3-percent oxygen	0.16 lb per MMBtu of steam output or 1.0 lb per MWh	1 hr minimum sampling time.
	b. HCl	1.7E-03 lb per MMBtu of heat input	2.9E-03 lb per MMBtu of steam output or 1.8E-02 lb per MWh	For M26A, Collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.
	c. Mercury	7.9E-06 lb per MMBtu of heat input	1.4E-05 lb per MMBtu of steam output or 8.3E-05 lb per MWh	For M29, collect a minimum of 3 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 ^b collect a

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote "a", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before April 1, 2013, you may comply with the emission limits in Table 11, 12, or 13 to this subpart until January 31, 2016. On and after January 31, 2016, but before October 6, 2025 you may comply with the emission limits in this Table 14. On and after October 6, 2025, you must comply with the emission limits in Table 1 to this subpart.

^d An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
	d. Filterable PM (or TSM)	6.7E-03 lb per MMBtu of heat input; or (2.1E-04 lb per MMBtu of heat input)	1.2E-02 lb per MMBtu of steam output or 7.0E-02 lb per MWh; or (3.5E-04 lb per MMBtu of steam output or 2.2E-03 lb per MWh)	minimum of 3 dscm. Collect a minimum of 3 dscm per run.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote “a”, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before April 1, 2013, you may comply with the emission limits in Table 11, 12, or 13 to this subpart until January 31, 2016. On and after January 31, 2016, but before October 6, 2025 you may comply with the emission limits in this Table 14. On and after October 6, 2025, you must comply with the emission limits in Table 1 to this subpart.

^d An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

[87 FR 60860, Oct. 6, 2022]

Table 15 to Subpart DDDDD of Part 63—Alternative Emission Limits for Existing Boilers and Process Heaters^d

As stated in § 63.7500, you may continue to comply with following emission limits until October 6, 2025:

[UNITS WITH HEAT INPUT CAPACITY OF 10 MILLION BTU PER HOUR OR GREATER]

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
1. Units in all subcategories designed to burn solid fuel	a. HCl	2.2E-02 lb per MMBtu of heat input	2.5E-02 lb per MMBtu of steam output or 0.27 lb per MWh	For M26A, Collect a minimum of 1 dscm per run; for M26, collect a minimum of 120 liters per run.
	b. Mercury	5.7E-06 lb per MMBtu of heat input	6.4E-06 lb per MMBtu of steam output or 7.3E-05 lb per MWh	For M29, collect a minimum of 3 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote a, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

^d Before October 6, 2025 you may comply with the emission limits in this Table 15. On and after October 6, 2025, you must comply with the emission limits in Table 2 to this subpart.

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
2. Units design to burn coal/ solid fossil fuel	a. Filterable PM (or TSM)	4.0E-02 lb per MMBtu of heat input; or (5.3E-05 lb per MMBtu of heat input)	4.2E-02 lb per MMBtu of steam output or 4.9E-01 lb per MWh; or (5.6E-05 lb per MMBtu of steam output or 6.5E-04 lb per MWh)	D6784 ^b collect a minimum of 3 dscm. Collect a minimum of 2 dscm per run.
3. Pulverized coal boilers designed to burn coal/ solid fossil fuel	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (320 ppm by volume on a dry basis corrected to 3-percent oxygen, ^c 30-day rolling average)	0.11 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average	1 hr minimum sampling time.
4. Stokers/	a. CO (or	160 ppm by volume on a	0.14 lb per	1 hr minimum sampling

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote a, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

^d Before October 6, 2025 you may comply with the emission limits in this Table 15. On and after October 6, 2025, you must comply with the emission limits in Table 2 to this subpart.

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
others designed to burn coal/ solid fossil fuel	CEMS)	dry basis corrected to 3-percent oxygen, 3-run average; or (340 ppm by volume on a dry basis corrected to 3- percent oxygen, ^c 30-day rolling average)	MMBtu of steam output or 1.7 lb per MWh; 3-run average	time.
5. Fluidized bed units designed to burn coal/ solid fossil fuel	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (230 ppm by volume on a dry basis corrected to 3- percent oxygen, ^c 30-day rolling average)	0.12 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average	1 hr minimum sampling time.
6. Fluidized bed units with an integrated heat	a. CO (or CEMS)	140 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (150 ppm by	1.3E-01 lb per MMBtu of steam output or 1.5 lb per MWh; 3-run	1 hr minimum sampling time.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote a, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

^d Before October 6, 2025 you may comply with the emission limits in this Table 15. On and after October 6, 2025, you must comply with the emission limits in Table 2 to this subpart.

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
exchanger designed to burn coal/ solid fossil fuel		volume on a dry basis corrected to 3-percent oxygen, ^c 30-day rolling average)	average	
7. Stokers/ sloped grate/ others designed to burn wet biomass fuel	a. CO (or CEMS)	1,500 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (720 ppm by volume on a dry basis corrected to 3-percent oxygen, ^c 30-day rolling average)	1.4 lb per MMBtu of steam output or 17 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	3.7E-02 lb per MMBtu of heat input; or (2.4E-04 lb per MMBtu of heat input)	4.3E-02 lb per MMBtu of steam output or 5.2E-01 lb per MWh; or (2.8E-04 lb per MMBtu of steam	Collect a minimum of 2 dscm per run.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote a, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

^d Before October 6, 2025 you may comply with the emission limits in this Table 15. On and after October 6, 2025, you must comply with the emission limits in Table 2 to this subpart.

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
8. Stokers/sloped grate/others designed to burn kiln-dried biomass fuel	a. CO	460 ppm by volume on a dry basis corrected to 3-percent oxygen	output or 3.4E-04 lb per MWh) 4.2E-01 lb per MMBtu of steam output or 5.1 lb per MWh	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	3.2E-01 lb per MMBtu of heat input; or (4.0E-03 lb per MMBtu of heat input)	3.7E-01 lb per MMBtu of steam output or 4.5 lb per MWh; or (4.6E-03 lb per MMBtu of steam output or 5.6E-02 lb per MWh)	Collect a minimum of 1 dscm per run.
9. Fluidized bed units designed to	a. CO (or CEMS)	470 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run	4.6E-01 lb per MMBtu of steam output or 5.2 lb	1 hr minimum sampling time.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote a, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

^d Before October 6, 2025 you may comply with the emission limits in this Table 15. On and after October 6, 2025, you must comply with the emission limits in Table 2 to this subpart.

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
burn biomass/bio-based solid	b. Filterable PM (or TSM)	average; or (310 ppm by volume on a dry basis corrected to 3- percent oxygen, ^c 30-day rolling average) 1.1E-01 lb per MMBtu of heat input; or (1.2E-03 lb per MMBtu of heat input)	per MWh; 3-run average 1.4E-01 lb per MMBtu of steam output or 1.6 lb per MWh; or (1.5E-03 lb per MMBtu of steam output or 1.7E-02 lb per MWh)	Collect a minimum of 1 dscm per run.
10. Suspension burners designed to burn biomass/bio-	a. CO (or CEMS)	2,400 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (2,000 ppm by volume on a dry basis corrected to 3-percent	1.9 lb per MMBtu of steam output or 27 lb per MWh; 3-run average	1 hr minimum sampling time.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote a, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

^d Before October 6, 2025 you may comply with the emission limits in this Table 15. On and after October 6, 2025, you must comply with the emission limits in Table 2 to this subpart.

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
based solid	b. Filterable PM (or TSM)	oxygen, ^c 10-day rolling average) 5.1E-02 lb per MMBtu of heat input; or (6.5E-03 lb per MMBtu of heat input)	5.2E-02 lb per MMBtu of steam output or 7.1E-01 lb per MWh; or (6.6E-03 lb per MMBtu of steam output or 9.1E-02 lb per MWh)	Collect a minimum of 2 dscm per run.
11. Dutch Ovens/Pile burners designed to burn biomass/bio-based solid	a. CO (or CEMS)	770 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (520 ppm by volume on a dry basis corrected to 3-percent oxygen, ^c 10-day rolling average)	8.4E-01 lb per MMBtu of steam output or 8.4 lb per MWh; 3-run average	1 hr minimum sampling time.
	b.	2.8E-01 lb per MMBtu of	3.9E-01 lb per	Collect a minimum of 1

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote a, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

^d Before October 6, 2025 you may comply with the emission limits in this Table 15. On and after October 6, 2025, you must comply with the emission limits in Table 2 to this subpart.

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
12. Fuel cell units designed to burn biomass/bio-based solid	Filterable PM (or TSM)	heat input; or (2.0E-03 lb per MMBtu of heat input)	MMBtu of steam output or 3.9 lb per MWh; or (2.8E-03 lb per MMBtu of steam output or 2.8E-02 lb per MWh)	dscm per run.
	a. CO	1,100 ppm by volume on a dry basis corrected to 3-percent oxygen	2.4 lb per MMBtu of steam output or 12 lb per MWh	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.0E-02 lb per MMBtu of heat input; or (5.8E-03 lb per MMBtu of heat input)	5.5E-02 lb per MMBtu of steam output or 2.8E-01 lb per MWh; or (1.6E-02 lb per MMBtu of steam	Collect a minimum of 2 dscm per run.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote a, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

^d Before October 6, 2025 you may comply with the emission limits in this Table 15. On and after October 6, 2025, you must comply with the emission limits in Table 2 to this subpart.

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
13. Hybrid suspension grate units designed to burn biomass/bio-based solid	a. CO (or CEMS)	3,500 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (900 ppm by volume on a dry basis corrected to 3- percent oxygen, ^c 30-day rolling average)	output or 8.1E-02 lb per MWh) 3.5 lb per MMBtu of steam output or 39 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	4.4E-01 lb per MMBtu of heat input; or (4.5E-04 lb per MMBtu of heat input)	5.5E-01 lb per MMBtu of steam output or 6.2 lb per MWh; or (5.7E-04 lb per MMBtu of steam output or 6.3E-03 lb per MWh)	Collect a minimum of 1 dscm per run.
14. Units	a. HCl	1.1E-03 lb per MMBtu of	1.4E-03 lb per	For M26A, collect a

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote a, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

^d Before October 6, 2025 you may comply with the emission limits in this Table 15. On and after October 6, 2025, you must comply with the emission limits in Table 2 to this subpart.

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
designed to burn liquid fuel	b. Mercury	heat input 2.0E-06 lb per MMBtu of heat input	MMBtu of steam output or 1.6E-02 lb per MWh 2.5E-06 lb per MMBtu of steam output or 2.8E-05 lb per MWh	minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run. For M29, collect a minimum of 3 dscm per run; for M30A or M30B collect a minimum sample as specified in the method, for ASTM D6784 ^b collect a minimum of 2 dscm.
15. Units designed to burn heavy liquid fuel	a. CO	130 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average	0.13 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average	1 hr minimum sampling time.
	b. Filterable	6.2E-02 lb per MMBtu of heat input; or (2.0E-04 lb	7.5E-02 lb per MMBtu of steam	Collect a minimum of 1 dscm per run.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote a, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

^d Before October 6, 2025 you may comply with the emission limits in this Table 15. On and after October 6, 2025, you must comply with the emission limits in Table 2 to this subpart.

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
16. Units designed to burn light liquid fuel	PM (or TSM)	per MMBtu of heat input)	output or 8.6E-01 lb per MWh; or (2.5E-04 lb per MMBtu of steam output or 2.8E-03 lb per MWh)	1 hr minimum sampling time. Collect a minimum of 3 dscm per run.
	a. CO	130 ppm by volume on a dry basis corrected to 3-percent oxygen	0.13 lb per MMBtu of steam output or 1.4 lb per MWh	
	b. Filterable PM (or TSM)	7.9E-03 lb per MMBtu of heat input; or (6.2E-05 lb per MMBtu of heat input)	9.6E-03 lb per MMBtu of steam output or 1.1E-01 lb per MWh; or (7.5E-05 lb per MMBtu of steam output or 8.6E-04 lb per MWh)	
17. Units	a. CO	130 ppm by volume on a	0.13 lb per	1 hr minimum sampling

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote a, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

^d Before October 6, 2025 you may comply with the emission limits in this Table 15. On and after October 6, 2025, you must comply with the emission limits in Table 2 to this subpart.

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
designed to burn liquid fuel that are non-continental units	b.	dry basis corrected to 3-percent oxygen, 3-run average based on stack test	MMBtu of steam output or 1.4 lb per MWh; 3-run average	time.
	Filterable PM (or TSM)	2.7E-01 lb per MMBtu of heat input; or (8.6E-04 lb per MMBtu of heat input)	3.3E-01 lb per MMBtu of steam output or 3.8 lb per MWh; or (1.1E-03 lb per MMBtu of steam output or 1.2E-02 lb per MWh)	Collect a minimum of 2 dscm per run.
18. Units designed to burn gas 2 (other) gases	a. CO	130 ppm by volume on a dry basis corrected to 3-percent oxygen	0.16 lb per MMBtu of steam output or 1.0 lb per MWh	1 hr minimum sampling time.
	b. HCl	1.7E-03 lb per MMBtu of	2.9E-03 lb per	For M26A, collect a

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote a, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

^d Before October 6, 2025 you may comply with the emission limits in this Table 15. On and after October 6, 2025, you must comply with the emission limits in Table 2 to this subpart.

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
		heat input	MMBtu of steam output or 1.8E-02 lb per MWh	minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.
	c. Mercury	7.9E-06 lb per MMBtu of heat input	1.4E-05 lb per MMBtu of steam output or 8.3E-05 lb per MWh	For M29, collect a minimum of 3 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 ^b collect a minimum of 2 dscm.
	d. Filterable PM (or TSM)	6.7E-03 lb per MMBtu of heat input or (2.1E-04 lb per MMBtu of heat input)	1.2E-02 lb per MMBtu of steam output or 7.0E-02 lb per MWh; or (3.5E-04 lb per MMBtu of steam output or 2.2E-03	Collect a minimum of three dscm per run.

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote a, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

^d Before October 6, 2025 you may comply with the emission limits in this Table 15. On and after October 6, 2025, you must comply with the emission limits in Table 2 to this subpart.

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
			lb per MWh)	

^a If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provisions of § 63.7515 are met. For all other pollutants that do not contain a footnote a, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

^b Incorporated by reference, see § 63.14.

^c An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A-7, and EPA Method 19 equations in 40 CFR part 60, appendix A-7, must be used to generate the appropriate CO₂ correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO₂ being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

^d Before October 6, 2025 you may comply with the emission limits in this Table 15. On and after October 6, 2025, you must comply with the emission limits in Table 2 to this subpart.

[87 FR 60863, Oct. 6, 2022]

This content is from the eCFR and is authoritative but unofficial.

Title 40 —Protection of Environment
Chapter I —Environmental Protection Agency
Subchapter C —Air Programs
Part 82 —Protection of Stratospheric Ozone

Authority: 42 U.S.C. 7414, 7601, 7671-7671q.

Source: 57 FR 33787, July 30, 1992, unless otherwise noted.

Subpart A Production and Consumption Controls

§ 82.1 Purpose and scope.

§ 82.2 [Reserved]

§ 82.3 Definitions for class I and class II controlled substances.

§ 82.4 Prohibitions for class I controlled substances.

§ 82.5 Apportionment of baseline production allowances for class I controlled substances.

§ 82.6 Apportionment of baseline consumption allowances for class I controlled substances.

§ 82.7 Grant and phase reduction of baseline production and consumption allowances for class I controlled substances.

§ 82.8 Grant of essential use allowances and critical use allowances.

§ 82.9 Availability of production allowances in addition to baseline production allowances for class I controlled substances.

§ 82.10 [Reserved]

§ 82.11 Exports of class I controlled substances to Article 5 Parties.

§ 82.12 Transfers of allowances for class I controlled substances.

§ 82.13 Recordkeeping and reporting requirements for class I controlled substances.

§ 82.14 Process for electronic reporting.

§ 82.15 Prohibitions for class II controlled substances.

§ 82.16 Phaseout schedule of class II controlled substances.

§ 82.17 Apportionment of baseline production allowances for class II controlled substances.

§ 82.18 Availability of production in addition to baseline production allowances for class II controlled substances.

§ 82.19 Apportionment of baseline consumption allowances for class II controlled substances.

§ 82.20 Availability of consumption allowances in addition to baseline consumption allowances for class II controlled substances.

§§ 82.21-82.22 [Reserved]

§ 82.23 Transfers of allowances of class II controlled substances.

§ 82.24 Recordkeeping and reporting requirements for class II controlled substances.

§ 82.25 Emissions of controlled substances from industrial sources.

§ 82.26 Treatment of data submitted under this subpart.

§ 82.27 Incorporation by reference.

Appendix A to Subpart A of Part 82

Class I Controlled Substances

Appendix B to Subpart A of Part 82

Class II Controlled Substances ^{a b}

Appendix C to Subpart A of Part 82 [Reserved]

Appendix D to Subpart A of Part 82

Harmonized Tariff Schedule Description of Products That May
Contain Controlled Substances in Appendix A, Class I, Groups I
and II

Appendix E to Subpart A of Part 82

Article 5 Parties

Appendix F to Subpart A of Part 82

Listing of Ozone-Depleting Chemicals

Appendix G to Subpart A of Part 82

UNEP Recommendations for Conditions Applied to Exemption for
Essential Laboratory and Analytical Uses

Appendix H to Subpart A of Part 82

Clean Air Act Amendments of 1990 Phaseout Schedule for
Production of Ozone-Depleting Substances

Appendix I to Subpart A of Part 82

Global Warming Potentials (Mass Basis), Referenced to the
Absolute GWP for the Adopted Carbon Cycle Model CO₂ Decay
Response and Future CO₂ Atmospheric Concentrations Held
Constant at Current Levels. (Only Direct Effects Are Considered.)

*Appendix J to Subpart A of Part 82—Parties to the Montreal Protocol
Classified Under Article 5(1) That Have Banned the Import of
Controlled Products That Rely on Class I Controlled Substances for
Their Continuing Functioning [Reserved]*

Appendix K to Subpart A of Part 82

Commodity Codes From the Harmonized Tariff Schedule for
Controlled Substances and Used Controlled Substances

Appendix L to Subpart A of Part 82

Approved Critical Uses and Limiting Critical Conditions for Those
Uses

Subpart A—Production and Consumption Controls

Source: 60 FR 24986, May 10, 1995, unless otherwise noted.

§ 82.1 Purpose and scope.

- (a) The purpose of the regulations in this subpart is to implement the Montreal Protocol on Substances that Deplete the Ozone Layer and sections 602, 603, 604, 605, 606, 607, 614 and 616 of the Clean Air Act Amendments of 1990, Public Law 101-549. The Protocol and section 604 impose limits on the production and consumption (defined as production plus imports minus exports, excluding transshipments and used controlled substances) of certain ozone-depleting substances, according to specified schedules. The Protocol also requires each nation that becomes a Party to the agreement to impose certain restrictions on trade in ozone-depleting substances with non-Parties.
- (b) This subpart applies to any person that produces, transforms, destroys, imports or exports a controlled substance or imports or exports a controlled product.

[63 FR 41642, Aug. 4, 1998]

§ 82.2 [Reserved]

§ 82.3 Definitions for class I and class II controlled substances.

As used in this subpart, the term:

Administrator means the Administrator of the United States Environmental Protection Agency or his or her authorized representative. Starting May 18, 2020, reports and petitions that are available to be submitted through the Central Data Exchange, as well as any related supporting documents, must be submitted through that tool. Any other reports and communications shall be submitted to Stratospheric Protection Manager, 1200 Pennsylvania Ave. NW, Mail Code: 6205T, Washington, DC 20460.

Aircraft halon bottle means a vessel used as a component of an aircraft fire suppression system containing halon-1301 or halon-1211 approved under FAA rules for installation in a certificated aircraft.

Appliance means any device which contains and uses a refrigerant and which is used for household or commercial purposes, including any air conditioner, refrigerator, chiller, or freezer.

Applicator means the person who applies methyl bromide.

Approved critical use(s) means those uses of methyl bromide listed in Column A of appendix L to this subpart as further clarified in Columns B and C of that appendix.

Approved critical user(s) means a person who:

- (1) For the applicable control period, applied to EPA for a critical use exemption or is a member of a consortium that applied to EPA for a critical use exemption for a use and location of use that was included in the U.S. nomination, authorized by a Decision of the Parties to the Montreal Protocol, and then finally determined by EPA in a notice-and-comment rulemaking to be an approved critical use; and

- (2) Has an area in the applicable location of use that requires methyl bromide fumigation because the person reasonably expects that the area will be subject to a limiting critical condition during the applicable control period.

Article 5 allowances means the allowances apportioned under §§ 82.9(a), 82.11(a)(2), and 82.18(a).

Baseline consumption allowances means the consumption allowances apportioned under §§ 82.6 and 82.19.

Baseline production allowances means the production allowances apportioned under §§ 82.5 and 82.17.

Batch emission episode means a discrete venting episode associated with a vessel in a process; a vessel may have more than one batch emission episode. For example, a displacement of vapor resulting from the charging of a vessel with a feed material will result in a discrete emission episode that will last through the duration of the charge and will have an average flow rate equal to the rate of the charge. If the vessel is then heated, there will also be another discrete emission episode resulting from the expulsion of expanded vapor. Other emission episodes also may occur from the same vessel and other vessels in the process, depending on process operations.

Batch process or batch operation means a noncontinuous operation involving intermittent or discontinuous feed into equipment, and, in general, involves the emptying of the equipment after the batch operation ceases and prior to beginning a new operation. Addition of raw material and withdrawal of product do not occur simultaneously in a batch operation.

Beijing Amendments means the Montreal Protocol, as amended at the Eleventh Meeting of the Parties to the Montreal Protocol in Beijing in 1999.

Byproduct (for the purpose of this subpart only) means a chemical that is produced coincidentally during the production of another chemical.

Calculated level means the weighted amount of a controlled substance determined by multiplying the amount (in kilograms) of the controlled substance by that substance's ozone depletion potential (ODP) weight listed in appendix A or appendix B to this subpart.

Central Data Exchange means EPA's centralized electronic document receiving system, or its successors.

Class I refers to the controlled substances listed in appendix A to this subpart.

Class II refers to the controlled substances listed in appendix B to this subpart.

Commodity Owner, Shipper or their Agent means the person requesting that an applicator use methyl bromide for quarantine or preshipment applications.

Completely destroy means to cause the expiration of a controlled substance at a destruction efficiency of 98 percent or greater, using one of the destruction technologies approved by the Parties.

Confer means to shift the essential-use allowances obtained under § 82.8 from the holder of the unexpended essential-use allowances to a person for the production of a specified controlled substance.

Consortium means an organization representing a group of methyl bromide users that has collectively submitted an application for a critical use exemption on behalf of all members of the group. The members of a consortium shall be determined on the basis of the rules established by the organization. Members may either be required to formally join the consortium (e.g., by submitting an application or paying dues) or may automatically become members upon meeting particular criteria (e.g., a grower of a specific crop in a particular region).

Consumption means the production plus imports minus exports of a controlled substance (other than transshipments, or used controlled substances).

Consumption allowances means the privileges granted by this subpart to produce and import controlled substances; however, consumption allowances may be used to produce controlled substances only in conjunction with production allowances. A person's consumption allowances for class I substances are the total of the allowances obtained under §§ 82.6 and 82.7 as may be modified under § 82.12 (transfer of allowances). A person's consumption allowances for class II controlled substances are the total of the allowances obtained under §§ 82.19 and 82.20, as may be modified under § 82.23.

Continuous process or operation means a process where the inputs and outputs flow continuously throughout the duration of the process. Continuous processes are typically steady state.

Control period means the period from January 1, 1992 through December 31, 1992, and each twelve-month period from January 1 through December 31, thereafter.

Controlled product means a product that contains a controlled substance listed as a Class I, Group I or II substance in appendix A to this subpart. Controlled products include, but are not limited to, those products listed in appendix D to this subpart.

Controlled products belong to one or more of the following six categories of products:

- (1) Automobile and truck air conditioning units (whether incorporated in vehicles or not);
- (2) Domestic and commercial refrigeration and air-conditioning/heat pump equipment (whether containing controlled substances as a refrigerant and/or in insulating material of the product), e.g. Refrigerators, Freezers, Dehumidifiers, Water coolers, Ice machines, Air-conditioning and heat pump units;
- (3) Aerosol products, except medical aerosols;
- (4) Portable fire extinguishers;
- (5) Insulation boards, panels and pipe covers;
- (6) Pre-polymers.

Controlled substance means any substance listed in appendix A or appendix B to this subpart, whether existing alone or in a mixture, but excluding any such substance or mixture that is in a manufactured product other than a container used for the transportation or storage of the substance or mixture. Thus, any amount of a listed substance in appendix A or appendix B to this subpart that is not part of a use system containing the substance is a controlled substance. If a listed substance or mixture must first be transferred from a bulk container to another container, vessel, or piece of equipment in order to realize its intended use, the listed substance or mixture is a "controlled substance." The inadvertent or coincidental creation of insignificant quantities of a listed substance in appendix A or appendix B to this subpart; during a chemical manufacturing process, resulting from unreacted feedstock, from the listed substance's use as a process agent present as a trace quantity in the chemical substance being manufactured, or as an unintended byproduct of research and development applications, is not deemed a controlled substance. Controlled substances are divided into two classes, Class I in appendix A to this subpart, and Class II listed in appendix B to this subpart. Class I substances are further divided into eight groups, Group I, Group II, Group III, Group IV, Group V, Group VI, Group VII, and Group VIII, as set forth in appendix A to this subpart.

Copenhagen Amendments means the Montreal Protocol on Substances That Deplete the Ozone Layer, as amended at the Fourth Meeting of the Parties to the Montreal Protocol in Copenhagen in 1992.

Critical use means a circumstance in which the following two conditions are satisfied:

- (1) There are no technically and economically feasible alternatives or substitutes for methyl bromide available that are acceptable from the standpoint of environment and health and are suitable to the crops and circumstances involved, and
- (2) The lack of availability of methyl bromide for a particular use would result in significant market disruption.

Critical use allowance (CUA) means the privilege granted by this subpart to produce or import one

- (1) kilogram of methyl bromide for an approved critical use during the specified control period. A person's critical use allowances are the total of the allowances obtained under § 82.8(c) as may be modified under § 82.12 (transfer of allowances).

Critical use allowance for pre-plant uses means the privilege granted by this subpart to produce or import one

- (1) kilogram of methyl bromide solely for an approved critical use in pre-plant categories specified in Appendix L to this subpart during the specified control period. A person's critical use allowances for pre-plant uses are the total of the allowances obtained under § 82.8(c) as may be modified under § 82.12 (transfer of allowances).

Critical use allowance for post-harvest uses means the privilege granted by this subpart to produce or import one

- (1) kilogram of methyl bromide solely for an approved critical use in post-harvest categories specified in appendix L to this subpart during the specified control period. A person's critical use allowances for post-harvest uses are the total of the allowances obtained under § 82.8(c) as may be modified under § 82.12 (transfer of allowances).

Critical use allowance (CUA) holder means an entity to which EPA allocates a quantity of critical use allowances as reflected in § 82.8(c) or who receives a quantity of critical use allowances through a transfer under § 82.12.

Critical use methyl bromide means the class I, Group VI controlled substance produced or imported through expending a critical use allowance or that portion of inventory produced or imported prior to the January 1, 2005 phaseout date that is sold only for approved critical uses.

Destruction means the expiration of a controlled substance to the destruction and removal efficiency actually achieved, unless considered completely destroyed as defined in this section. Such destruction might result in a commercially useful end product, but such usefulness would be secondary to the act of destruction. Destruction must be achieved using one of the following controlled processes approved by the Parties to the Protocol:

- (1) Liquid injection incineration;
- (2) Reactor cracking;
- (3) Gaseous/fume oxidation;
- (4) Rotary kiln incineration;
- (5) Cement kiln;

- (6) Radio frequency plasma;
- (7) Municipal waste incinerators (only for the destruction of foams);
- (8) Nitrogen plasma arc;
- (9) Portable plasma arc;
- (10) Argon plasma arc;
- (11) Chemical reaction with hydrogen and carbon dioxide;
- (12) Inductively coupled radio frequency plasma;
- (13) Microwave plasma;
- (14) Porous thermal reactor;
- (15) Gas phase catalytic de-halogenation;
- (16) Superheated steam reactor; or
- (17) Thermal reaction with methane.

Difficult-to-monitor means the equipment piece may not be monitored without elevating the monitoring personnel more than 2 meters (7 feet) above a support surface or it is not accessible in a safe manner when it is in controlled substance service.

Distributor of methyl bromide means the person directly selling a class I, Group VI controlled substance to an applicator.

Dual mechanical seal pump and dual mechanical seal agitator means a pump or agitator equipped with a dual mechanical seal system that includes a barrier fluid system where the barrier fluid is not in light liquid service; each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both; and meets the following requirements:

- (1) Each dual mechanical seal system is operated with the barrier fluid at a pressure that is at all times (except periods of startup, shutdown, or malfunction) greater than the pump or agitator stuffing box pressure; or
- (2) Equipped with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed-vent system to a control device; or
- (3) Equipped with a closed-loop system that purges the barrier fluid into a process stream.

Equipment (for the purposes of § 82.25 only) means each pump, compressor, agitator, pressure relief device, sampling connection system, open-ended valve or line, valve, connector, and instrumentation system in controlled substance service for a process listed in § 82.25(b)(2); and any destruction units or closed-vent systems to which corresponding processes are vented.

Essential Metered Dose Inhaler (Essential MDI) means metered dose inhalers for the treatment of asthma and chronic obstructive pulmonary disease, approved by the Food and Drug Administration or by another Party's analogous health authority before December 31, 2000, and considered to be essential by the Party where the MDI product will eventually be sold. In addition, if the MDI product is to be sold in the U.S., the active moiety contained in the MDI must be listed as essential at 21 CFR 2.125(e).

Essential-Use Allowances means the privileges granted by § 82.4(n) to produce class I substances, as determined by allocation decisions made by the Parties to the Montreal Protocol and in accordance with the restrictions delineated in the Clean Air Act Amendments of 1990.

Essential-Use Chlorofluorocarbons (Essential-use CFCs) are the CFCs (CFC-11, CFC-12, or CFC-114) produced under the authority of essential-use allowances and not the allowances themselves. Essential-use CFCs include CFCs imported or produced by U.S. entities under the authority of essential-use allowances for use in essential metered dose inhalers, as well as CFCs imported or produced by non-U.S. entities under the authority of privileges granted by the Parties and the national authority of another country for use in essential metered dose inhalers.

Essential-Uses means those uses of controlled substances designated by the Parties to the Protocol to be necessary for the health and safety of, or critical for the functioning of, society; and for which there are no available technically and economically feasible alternatives or substitutes that are acceptable from the standpoint of environment and health. Beginning January 1, 2000 (January 1, 2002 for methyl chloroform) the essential use designations for class I substances must be made in accordance with the provisions of the Clean Air Act Amendments of 1990.

Export means the transport of virgin or used controlled substances from inside the United States or its territories to persons outside the United States or its territories, excluding United States military bases and ships for on-board use.

Export production allowances means the privileges granted by § 82.18(b) to produce HCFC-141b for export following the phaseout of HCFC-141b on January 1, 2003.

Exporter means the person who contracts to sell controlled substances for export or transfers controlled substances to his affiliate in another country.

Facility means one or more plants at the same location owned by or under common control of the same person.

Foreign state means an entity which is recognized as a sovereign nation or country other than the United States of America.^[1]

Foreign state complying with, when referring to a foreign state not Party to the 1987 Montreal Protocol, the London Amendment, the Copenhagen Amendment, or the Beijing Amendment, means any foreign state that has been determined to be complying with the 1987 Montreal Protocol or the specified amendments by a Meeting of the Parties.

Foreign state not Party to or Non-Party means a foreign state that has not deposited instruments of ratification, acceptance, or other form of approval with the Directorate of the United Nations Secretariat, evidencing the foreign state's ratification of the provisions of the 1987 Montreal Protocol, the London Amendment, the Copenhagen Amendment, or the Beijing Amendment, as specified.

Halon bank means a facility run by a national government or privately run and authorized by a national government that collects and stores previously-recovered halon for reuse at a later date. granted to a HCFC-141b formulator; an agency, department, or instrumentality of the U.S.; or a non-governmental space vehicle entity by this subpart to order production of or to import HCFC-141b, as determined in accordance with § 82.16(h).

^[1] Taiwan is not considered a foreign state.

Heel means the amount of a controlled substance that remains in a container after it is discharged or off-loaded (that is no more than ten percent of the volume of the container).

Hydrostatic testing means checking a gas pressure vessel for leaks or flaws. The vessel is filled with a nearly incompressible liquid—usually water or oil—and examined for leaks or permanent changes in shape.

Import means to land on, bring into, or introduce into, or attempt to land on, bring into, or introduce into any place subject to the jurisdiction of the United States whether or not such landing, bringing, or introduction constitutes an importation within the meaning of the customs laws of the United States, with the following exemptions:

- (1) Off-loading used or excess controlled substances or controlled products from a ship during servicing,
- (2) Bringing controlled substances into the U.S. from Mexico where the controlled substance had been admitted into Mexico in bond and was of U.S. origin, and
- (3) Bringing a controlled product into the U.S. when transported in a consignment of personal or household effects or in a similar non-commercial situation normally exempted from U.S. Customs attention.

Importer means any person who imports a controlled substance or a controlled product into the United States. “Importer” includes the person primarily liable for the payment of any duties on the merchandise or an authorized agent acting on his or her behalf. The term also includes, as appropriate:

- (1) The consignee;
- (2) The importer of record;
- (3) The actual owner; or
- (4) The transferee, if the right to draw merchandise in a bonded warehouse has been transferred.

In controlled substance service means that a piece of equipment that engages in an activity listed in § 82.25(b)(2), either contains or contacts a controlled substance that is a liquid or gas, and contains at least 5 percent by weight of a controlled substance.

In gas and vapor service means that a piece of equipment in regulated material service contains a gas or vapor at operating conditions.

In heavy liquid service means that a piece of equipment in regulated material service is not in gas and vapor service or in light liquid service.

In light liquid service means that a piece of equipment in regulated material service contains a liquid that meets the following conditions:

- (1) The vapor pressure of one or more of the compounds is greater than 0.3 kilopascals at 20 °C;
- (2) The total concentration of the pure compounds constituents having a vapor pressure greater than 0.3 kilopascals at 20 °C is equal to or greater than 20 percent by weight of the total process stream; and
- (3) The fluid is a liquid at operating conditions.

Note 1 to definition of “in light liquid service”: Vapor pressures may be determined by standard

reference texts or ASTM D-2879.

In vacuum service means that equipment is operating at an internal pressure which is at least 5 kilopascals below ambient pressure.

Individual shipment means the kilograms of a controlled substance for which a person may make one

- (1) U.S. Customs entry, as identified in the non-objection letter from the Administrator under §§ 82.13(g) and 82.24(c).

Interstate commerce means the distribution or transportation of any controlled substance between one state, territory, possession or the District of Columbia, and another state, territory, possession or the District of Columbia, or the sale, use or manufacture of any controlled substance in more than one state, territory, possession or District of Columbia. The entry points for which a controlled substance is introduced into interstate commerce are the release of a controlled substance from the facility in which the controlled substance was manufactured, the entry into a warehouse from which the domestic manufacturer releases the controlled substance for sale or distribution, and at the site of United States customs clearance.

Isolated intermediate means a product of a process that is stored before subsequent processing. An isolated intermediate is usually a product of chemical synthesis. Storage of an isolated intermediate marks the end of a process. Storage occurs at any time the intermediate is placed in equipment used solely for storage.

Limiting critical condition means the regulatory, technical, and economic circumstances listed in Column C of Appendix L to this subpart that establish conditions of critical use for methyl bromide in a fumigation area.

Location of use means the geographic area (such as a state, region, or the entire United States) covered by an application for a critical use exemption in which the limiting critical condition may occur.

London Amendments means the Montreal Protocol, as amended at the Second Meeting of the Parties to the Montreal Protocol in London in 1990.

Manufactured, for an appliance, means the date upon which the appliance's refrigerant circuit is complete, the appliance can function, the appliance holds a full refrigerant charge, and the appliance is ready for use for its intended purposes; and for a pre-charged appliance component, means the date that such component is completely produced by the original equipment manufacture, charged with refrigerant, and is ready for initial sale or distribution in interstate commerce.

Montreal Anniversary amendments means the Montreal Protocol, as amended at the Ninth Meeting of the Parties to the Montreal Protocol in Montreal in 1997.

Montreal Protocol means the Montreal Protocol on Substances that Deplete the Ozone Layer, a protocol to the Vienna Convention for the Protection of the Ozone Layer, including adjustments adopted by the Parties thereto and amendments that have entered into force.

1987 Montreal Protocol means the Montreal Protocol, as originally adopted by the Parties in 1987.

No external shaft pump and no external shaft agitator means any pump or agitator that is designed with no externally actuated shaft penetrating the pump or agitator housing.

Non-Objection notice means the privilege granted by the Administrator to import a specific individual shipment of a controlled substance in accordance with §§ 82.13(g)(2), (3), and (5) and 82.24(c)(3), (4), and (6).

Operating scenario means any specific operation of a process and includes the information specified in paragraphs (1) through (5) of this definition for each process. A change or series of changes to any of these elements, except for paragraph (4) of this definition, constitutes a different operating scenario.

- (1) A description of the process, the specific process equipment used, and the range of operating conditions for the process.
- (2) An identification of related process vents, their associated emissions episodes and durations, and calculations and engineering analyses to show the annual uncontrolled emissions of controlled substances from the process vent.
- (3) The control or destruction units used, as applicable, including a description of operating and/or testing conditions for any associated destruction unit.
- (4) The process vents (including those from other processes) that are simultaneously routed to the control or destruction unit(s).
- (5) The applicable monitoring requirements and any parametric level that assures destruction or removal for all emissions routed to the control or destruction unit.

Party means a foreign state that has deposited instruments of ratification, acceptance, or other form of approval with the Directorate of the United Nations Secretariat, evidencing the foreign state's ratification of the provisions of the 1987 Montreal Protocol, the London Amendment, the Copenhagen Amendment, or the Beijing Amendment, as specified. (For ratification status, see: http://ozone.unep.org/new_site/en/treaty_ratification_status.php.)

Person means any individual or legal entity, including an individual, corporation, partnership, association, state, municipality, political subdivision of a state, Indian tribe; any agency, department, or instrumentality of the United States; and any officer, agent, or employee thereof.

Plant means any process equipment (e.g., reactor, distillation column) used to convert raw materials or feedstock chemicals into controlled substances or use controlled substances in the production of other chemicals.

Preshipment applications, with respect to class I, Group VI controlled substances, are those non-quarantine applications applied within 21 days prior to export to meet the official requirements of the importing country or existing official requirements of the exporting country. Official requirements are those which are performed by, or authorized by, a national plant, animal, environmental, health or stored product authority.

Process (for the purposes of § 82.25 only) means all equipment that collectively functions to engage in an activity listed in § 82.25(b)(2). A process may consist of one or more unit operations. For the purposes of § 82.25, process includes any, all, or a combination of reaction, recovery, separation, purification, or other activity, operation, manufacture, or treatment which are used to engage in an activity listed in § 82.25(b)(2). For a continuous process, cleaning operations may be considered part of the process at the discretion of the facility. For a batch process, cleaning operations are part of the process. Ancillary activities are not considered a process or part of any process under § 82.25. Ancillary activities include boilers and incinerators, chillers and refrigeration systems, and other equipment and activities that are not directly involved (i.e., they operate within a closed system and materials are not combined with process fluids) in an activity listed in § 82.25(b)(2).

Process agent means a controlled substance used to form the environment for a chemical reaction or inhibit an unintended chemical reaction (e.g., use as a solvent, catalyst, or stabilizer) where the controlled substance is not consumed in the reaction, but is removed or recycled back into the process and where no more than trace quantities remain in the final product. A feedstock, in contrast, is consumed during the reaction. The term process agent includes, but is not limited to: carbon tetrachloride used in the elimination of nitrogen trichloride in chlor-alkali production, carbon tetrachloride used in the recovery of chlorine by tail gas absorption from chlor-alkali production, CFC-11 used in the production of synthetic fiber sheet, bromochloromethane used in the bromination of a styrenic polymer, and CFC-113 used in the production of high modulus polyethylene fiber.

Process condenser means a condenser whose primary purpose is to recover material as an integral part of a process. All condensers recovering condensate from a process vent at or above the boiling point or all condensers in line prior to a vacuum source are considered process condensers. Typically, a primary condenser or condensers in series are considered to be integral to the process if they are capable of and normally used for the purpose of recovering chemicals for fuel value (i.e., net positive heating value), use, reuse or for sale for fuel value, use, or reuse.

Process vent means a vent from a process vessel or vents from multiple process vessels within a process that are manifolded together into a common header, through which a controlled substance-containing gas stream is, or has the potential to be, released to the atmosphere (or the point of entry into a control device, if any). Examples of process vents include, but are not limited to, vents on condensers used for product recovery, bottoms receivers, surge control vessels, reactors, filters, centrifuges, and process tanks. Process vents do not include vents on storage tanks, wastewater emission sources, or pieces of equipment.

Production means the manufacture of a controlled substance from any raw material or feedstock chemical, but does not include:

- (1) The manufacture of a controlled substance that is subsequently transformed;
- (2) The reuse or recycling of a controlled substance;
- (3) Amounts that are destroyed by approved destruction technologies; or
- (4) Amounts that are spilled or vented unintentionally.

Production allowances means the privileges granted by this subpart to produce controlled substances; however, production allowances may be used to produce controlled substances only in conjunction with consumption allowances. A person's production allowances for class I substances are the total of the allowances obtained under §§ 82.5, 82.7 and 82.9, and as may be modified under § 82.12 (transfer of allowances). A person's production allowances for class II controlled substances are the total of the allowances obtained under § 82.17 and as may be modified under §§ 82.18 and 82.23.

Quarantine applications, with respect to class I, Group VI controlled substances, are treatments to prevent the introduction, establishment and/or spread of quarantine pests (including diseases), or to ensure their official control, where:

- (1) Official control is that performed by, or authorized by, a national (including state, tribal or local) plant, animal or environmental protection or health authority;

- (2) quarantine pests are pests of potential importance to the areas endangered thereby and not yet present there, or present but not widely distributed and being officially controlled. This definition excludes treatments of commodities not entering or leaving the United States or any State (or political subdivision thereof).

Source facility means the location at which a used controlled substance was recovered from a piece of equipment, including the name of the company responsible for, or owning the piece of equipment, a contact person at the location, the mailing address for that specific location, and a phone number and a fax number for the contact person at the location.

Space vehicle means a man-made device, either manned or unmanned, designed for operation beyond earth's atmosphere. This definition includes integral equipment such as models, mock-ups, prototypes, molds, jigs, tooling, hardware jackets, and test coupons. Also included is auxiliary equipment associated with tests, transport, and storage, which through contamination can compromise the space vehicle performance.

Third party applicator means an applicator of critical use methyl bromide who fumigates or treats commodities, structures, crops, or land on behalf of an approved critical user.

Transform means to use and entirely consume (except for trace quantities) a controlled substance in the manufacture of other chemicals for commercial purposes.

Transshipment means the continuous shipment of a controlled substance, from a foreign state of origin through the United States or its territories, to a second foreign state of final destination, as long as the shipment does not enter into United States jurisdiction. A transshipment, as it moves through the United States or its territories, cannot be re-packaged, sorted or otherwise changed in condition.

Typical batch means a batch process operated within a range of operating conditions that are documented in an operating scenario. Emissions from a typical batch are based on the operating conditions that result in representative emissions. The typical batch defines the uncontrolled emissions for each emission episode defined under the operating scenario.

Uncontrolled emissions of controlled substance means a gas stream containing a controlled substance which has exited the process (or process condenser or control condenser, where applicable), but which has not yet been introduced into a destruction unit to reduce the mass of controlled substance in the stream. If the emissions from the process are not routed to a destruction unit, uncontrolled emissions are those controlled substance emissions released to the atmosphere.

Unexpended Article 5 allowances means Article 5 allowances that have not been used. At any time in any control period a person's unexpended Article 5 allowances are the total of the level of Article 5 allowances the person has authorization under this subpart to hold at that time for that control period, minus the level of controlled substances that the person has produced in that control period until that time.

Unexpended consumption allowances means consumption allowances that have not been used. At any time in any control period a person's unexpended consumption allowances are the total of the level of consumption allowances the person has authorization under this subpart to hold at that time for that control period, minus the level of controlled substances that the person has produced or imported (not including transshipments and used controlled substances) in that control period until that time.

Unexpended critical use allowances (CUA) means critical use allowances against which methyl bromide has not yet been produced or imported. At any time in any control period a person's unexpended critical use allowances are the total of the level of critical use allowances the person holds at that time for that control period, minus the level of class I, Group VI controlled substances that the person has produced or has imported solely for approved critical uses in that control period.

Unexpended destruction and transformation credits means destruction and transformation credits that have not been used. At any time in any control period a person's unexpended destruction and transformation credits are the total of the level of destruction and transformation credits the person has authorization under this subpart to hold at that time for that control period, minus the level of controlled substances that the person has produced or imported (not including transshipments and used controlled substances) in that control period until that time.

Unexpended essential-use allowances means essential-use allowances that have not been used. At any time in any control period a person's unexpended essential-use allowances are the total of the level of essential-use allowances the person has authorization under this subpart to hold at that time for that control period, minus the level of controlled substances that the person has imported or had produced in that control period until that time.

Unexpended export production allowances means export production allowances that have not been used. A person's unexpended export production allowances are the total of the quantity of the export production allowances the person has authorization under § 82.18(h) to hold for that control period, minus the quantity of class II controlled substances that the person has produced at that time during the same control period.

Unexpended production allowances means production allowances that have not been used. At any time in any control period a person's unexpended production allowances are the total of the level of production allowances he has authorization under this subpart to hold at that time for that control period, minus the level of controlled substances that the person has produced in that control period until that time.

Unsafe-to-monitor means that monitoring personnel would be exposed to an immediate danger as a consequence of monitoring the piece of equipment. Examples of unsafe-to-monitor equipment include, but are not limited to, equipment under extreme pressure or heat.

Use of a class II controlled substance, for the purposes of § 82.15 of this subpart, includes but is not limited to, use in a manufacturing process, use in manufacturing a product, intermediate uses such as formulation or packaging for other subsequent uses, and use in maintaining, servicing, or repairing an appliance or other piece of equipment. Use of a class II controlled substance also includes use of that controlled substance when it is removed from a container used for the transportation or storage of the substance but does not include use of a manufactured product containing a controlled substance.

Used controlled substances means controlled substances that have been recovered from their intended use systems (may include controlled substances that have been, or may be subsequently, recycled or reclaimed).

[60 FR 24986, May 10, 1995]

Editorial Note: For FEDERAL REGISTER citations affecting § 82.3, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at www.govinfo.gov.

§ 82.4 Prohibitions for class I controlled substances.

(a)

- (1) Prior to January 1, 1996, for all Groups of class I controlled substances, and prior to January 1, 2005, for class I, Group VI controlled substances, no person may produce, at any time in any control period, (except that are transformed or destroyed domestically or by a person of another Party) in excess of the amount of unexpended production allowances or unexpended Article 5 allowances for that substance held by that person under the authority of this subpart at that time for that control period. Every kilogram of excess production constitutes a separate violation of this subpart.
- (2) Effective January 1, 2003, production of class I, Group VI controlled substances is not subject to the prohibitions in paragraph (a)(1) of this section if it is solely for quarantine or preshipment applications as defined in this subpart.

(b)

- (1) Effective January 1, 1996, for any Class I, Group I, Group II, Group III, Group IV, Group V or Group VII controlled substances, and effective January 1, 2005 for any Class I, Group VI controlled substances, and effective August 18, 2003, for any Class I, Group VIII controlled substance, no person may produce, at any time in any control period (except that are transformed or destroyed domestically or by a person of another Party) in excess of the amount of conferred unexpended essential use allowances or exemptions, or in excess of the amount of unexpended critical use allowances, or in excess of the amount of unexpended Article 5 allowances as allocated under § 82.9 and § 82.11, as may be modified under § 82.12 (transfer of allowances) for that substance held by that person under the authority of this subpart at that time for that control period. Every kilogram of excess production constitutes a separate violation of this subpart.
- (2) Effective January 1, 2005, production of class I, Group VI controlled substances is not subject to the prohibitions in paragraph (b)(1) of this section if it is solely for quarantine or preshipment applications as defined in this subpart, or it is solely for export to satisfy critical uses authorized by the Parties for that control period.

(c)

- (1) Prior to January 1, 1996, for all Groups of class I controlled substances, and prior to January 1, 2005, for class I, Group VI controlled substances, no person may produce or (except for transshipments, heels or used controlled substances) import, at any time in any control period, (except for controlled substances that are transformed or destroyed) in excess of the amount of unexpended consumption allowances held by that person under the authority of this subpart at that time for that control period. Every kilogram of excess production or importation (other than transshipments, heels or used controlled substances) constitutes a separate violation of this subpart.
- (2) Effective January 1, 2003, production and import of class I, Group VI controlled substances is not subject to the prohibitions in paragraph (c)(1) of this section if it is solely for quarantine or preshipment applications as defined in this subpart.

(d)

- (1) Effective January 1, 1996, for any class I, Group I, Group II, Group III, Group IV, Group V, or Group VII controlled substances, and effective January 1, 2005, for any class I, Group VI controlled substance, and effective August 18, 2003, for any class I, Group VIII controlled substance, no person may import (except for transshipments or heels), at any time in any control period, (except for controlled substances that are transformed or destroyed) in excess of the amount of unexpended essential use allowances or

exemptions, or in excess of unexpended critical use allowances, for that substance held by that person under the authority of this subpart at that time for that control period. Every kilogram of excess importation (other than transshipments or heels) constitutes a separate violation of this subpart. It is a violation of this subpart to obtain unused class I controlled substances under the general laboratory exemption in excess of actual need and to recycle that material for sale into other markets.

- (e) Effective January 1, 1996, no person may place an order by conferring essential-use allowances for the production of the class I controlled substance, at any time in any control period, in excess of the amount of unexpended essential-use allowances, held by that person under the authority of this subpart at that time for that control period. Effective January 1, 1996, no person may import a class I controlled substance with essential-use allowances, at any time in any control period, in excess of the amount of unexpended essential-use allowances, held by that person under the authority of this subpart at that time for that control period. No person may import or place an order for the production of a class I controlled substance with essential-use allowances, at any time in any control period, other than for the class I controlled substance(s) for which they received essential-use allowances under paragraph (u) of this section. Every kilogram of excess production ordered in excess of the unexpended essential-use allowances conferred to the producer constitutes a separate violation of this subpart. Every kilogram of excess import in excess of the unexpended essential-use allowances held at that time constitutes a separate violation of this subpart.
- (f) [Reserved]
- (g) Effective January 1, 1996, the U.S. total production and importation of a class I controlled substance (except Group VI) as allocated under this section for essential-use allowances and exemptions, and as obtained under § 82.9 for destruction and transformation credits, may not, at any time, in any control period until January 1, 2000, exceed the percent limitation of baseline production in appendix H of this subpart, as set forth in the Clean Air Act Amendments of 1990. No person shall cause or contribute to the U.S. exceedance of the national limit for that control period.
- (h) No person may sell in the U.S. any Class I controlled substance produced explicitly for export to an Article 5 country.
- (i) Effective January 1, 1995, no person may import, at any time in any control period, a heel of any class I controlled substance that is greater than 10 percent of the volume of the container in excess of the amount of unexpended consumption allowances, or unexpended destruction and transformation credits held by that person under the authority of this subpart at that time for that control period. Every kilogram of excess importation constitutes a separate violation of this subpart.
- (j)
 - (1) Effective January 1, 1995, no person may import, at any time in any control period, a used class I controlled substance, except for Group II used controlled substances shipped in aircraft halon bottles for hydrostatic testing, without having received a non-objection notice from the Administrator in accordance with § 82.13(g)(2) and (3). A person who receives a non-objection notice for the import of an individual shipment of used controlled substances may not transfer or confer the right to import and may not import any more than the exact quantity, in kilograms, of the used controlled substance cited in the non-objection notice. Every kilogram of importation of used controlled substance in excess of the quantity cited in the non-objection notice issued by the Administrator in accordance with § 82.13(g)(2) and (3) constitutes a separate violation.

- (2) No person may import for purposes of destruction, at any time in any control period, a class I controlled substance for which EPA has apportioned baseline production and consumption allowances, without having submitted a certification of intent to import for destruction to the Administrator and received a non-objection notice in accordance with § 82.13(g)(5). A person issued a non-objection notice for the import of an individual shipment of class I controlled substances for destruction may not transfer or confer the right to import and may not import any more than the exact quantity (in kilograms) of the class I controlled substance stated in the non-objection notice. For imports intended to be destroyed in the United States, a person issued a non-objection notice must destroy the controlled substance within one year of the date stamped on the non-objection letter, may not transfer or confer the right to import, and may not import any more than the exact quantity (in kilograms) of the class I controlled substance stated in the non-objection notice. Every kilogram of import of class I controlled substance in excess of the quantity stated in the non-objection notice issued by the Administrator in accordance with § 82.13(g)(5) constitutes a separate violation of this subpart.

(k)

- (1) Prior to January 1, 1996, for all Groups of class I controlled substances, and prior to January 1, 2005, for class I, Group VI controlled substances, a person may not use production allowances to produce a quantity of a class I controlled substance unless that person holds under the authority of this subpart at the same time consumption allowances sufficient to cover that quantity of class I controlled substances nor may a person use consumption allowances to produce a quantity of class I controlled substances unless the person holds under authority of this subpart at the same time production allowances sufficient to cover that quantity of class I controlled substances. However, prior to January 1, 1996, for all class I controlled substances, and prior to January 1, 2005, for class I, Group VI controlled substances, only consumption allowances are required to import, with the exception of transshipments, heels, and used controlled substances. Effective January 1, 1996, for all Groups of class I controlled substances, except Group VI, only essential use allowances or exemptions are required to import class I controlled substances, with the exception of transshipments, heels, used controlled substances, and essential use CFCs.
- (2) Notwithstanding paragraph (k)(1) of this section, effective January 1, 2003, for class I, Group VI controlled substances, consumption allowances are not required to import quantities solely for quarantine or preshipment applications as defined in this subpart.

(l) Every kilogram of a controlled substance, and every controlled product, imported or exported in contravention of this subpart constitutes a separate violation of this subpart. No person may:

- (1) Import or export any quantity of a controlled substance listed in class I, Group I or Group II, in appendix A to this subpart from or to any foreign state not Party to the 1987 Montreal Protocol unless that foreign state is complying with the 1987 Montreal Protocol (For ratification status, see: http://ozone.unep.org/new_site/en/treaty_ratification_status.php);
- (2) Import or export any quantity of a controlled substance listed in class I, Group III, Group IV, or Group V, in appendix A to this subpart, from or to any foreign state not Party to the London Amendment, unless that foreign state is complying with the London Amendment (For ratification status, see: http://ozone.unep.org/new_site/en/treaty_ratification_status.php); or

- (3) Import a controlled product, as noted in appendix D, annex 1 to this subpart, from any foreign state not Party to the 1987 Montreal Protocol, unless that foreign state is complying with the 1987 Montreal Protocol (For ratification status, see: http://ozone.unep.org/new_site/en/treaty_ratification_status.php).
- (4) Import or export any quantity of a controlled substance listed in class I, Group VII, in appendix A to this subpart, from or to any foreign state not Party to the Copenhagen Amendment, unless that foreign state is complying with the Copenhagen Amendment (For ratification status, see: http://ozone.unep.org/new_site/en/treaty_ratification_status.php).
- (5) Import or export any quantity of a controlled substance listed in class I, Group VI, in appendix A to this subpart, from or to any foreign state not Party to the Copenhagen Amendment unless that foreign state is complying with the Copenhagen Amendment (For ratification status, see: http://ozone.unep.org/new_site/en/treaty_ratification_status.php).
- (6) Import or export any quantity of a controlled substance listed in class I, Group VIII, in appendix A to this subpart, from or to any foreign state not Party to the Beijing Amendment, unless that foreign state is complying with the Beijing Amendment (For ratification status, see: http://ozone.unep.org/new_site/en/treaty_ratification_status.php).
- (m) Effective October 5, 1998, no person may export a controlled product to a Party listed in appendix J of this subpart in any control period after the control period in which EPA publishes a notice in the FEDERAL REGISTER listing that Party in appendix J of this subpart. EPA will publish a notice in the FEDERAL REGISTER that lists a Party in appendix J if the Party formally presents to the U.S. a government document through its embassy in the United States stating that it has established a ban on the import of controlled products and a ban on the manufacture of those same controlled products.
- (n) No person may use class I controlled substances produced or imported under the essential use exemption for any purpose other than those set forth in this paragraph. Effective January 1, 1996, essential-use allowances are apportioned to a person under § 82.8(a) and (b) for the exempted production or importation of specified class I controlled substances solely for the purposes listed in paragraphs (n)(1)(i) through (iii) of this section.
 - (1) Essential-uses for the production or importation of controlled substances as agreed to by the Parties to the Protocol and subject to the periodic revision of the Parties are:
 - (i) Metered dose inhalers (MDIs) for the treatment of asthma and chronic obstructive pulmonary disease that were approved by the Food and Drug Administration before December 31, 2000.
 - (ii) Space Shuttle—solvents.
 - (iii) Essential laboratory and analytical uses (defined in appendix G of this subpart).
 - (2) Any person acquiring unused class I controlled substances produced or imported under the authority of essential-use allowances or the essential-use exemption granted in § 82.8 to this subpart for use in anything other than an essential-use (i.e., for uses other than those specifically listed in paragraph (n)(1) of this section) is in violation of this subpart. Each kilogram of unused class I controlled substance produced or imported under the authority of essential-use allowances or the essential-use exemption and used for a non-essential use is a separate violation of this subpart. Any person selling unused class I controlled substances produced or imported under authority of essential-use allowances or the essential-use exemption for uses other than an essential-use is in violation of this subpart. Each kilogram of unused class I controlled substances produced or imported under

authority of essential-use allowances or the essential-use exemption and sold for a use other than an essential-use is a separate violation of this subpart. It is a violation of this subpart to obtain unused class I controlled substances under the exemption for laboratory and analytical uses in excess of actual need and to recycle that material for sale into other markets.

(o) [Reserved]

(p) Critical Use Exemption: With respect to class I, Group VI substances (methyl bromide):

- (1) No person shall sell critical use methyl bromide without first receiving a certification from the purchaser that the quantity purchased will be sold or used solely for an approved critical use. Every kilogram of critical use methyl bromide sold without first obtaining such certification constitutes a separate violation of this subpart.
- (2) For approved critical users, each action associated with each 200 kilograms of critical use methyl bromide for the following subparagraphs constitutes a separate violation of this subpart.
 - (i) No person shall take possession of quantities of critical use methyl bromide or acquire fumigation services using quantities of critical use methyl bromide without first completing the appropriate certification in accordance with the requirements in § 82.13.
 - (ii) No person who purchases critical use methyl bromide may use such quantities for a use other than the specified critical use listed in column A and the specified location of use in column B of appendix L to this subpart.
 - (iii) No person who purchases critical use methyl bromide produced or imported with expended critical use allowances for pre-plant uses, may use such quantities for other than the pre-plant uses as specified in column A and column B of appendix L to this subpart.
 - (iv) No person who purchases critical use methyl bromide produced or imported with expended critical use allowances for post-harvest uses, may use such quantities for other than the post-harvest uses as specified in column A and column B of appendix L to this subpart.
 - (v) No person who uses critical use methyl bromide on a specific field or structure may concurrently or subsequently use non-critical use methyl bromide on the same field or structure for the same use (as defined in column A and column B of appendix L) in the same control period, excepting methyl bromide used under the quarantine and pre-shipment exemption.
 - (vi) No person who purchases critical use methyl bromide during the control period shall use that methyl bromide on a field or structure for which that person has used non-critical use methyl bromide for the same use (as defined in columns A and B of appendix L) in the same control period, excepting methyl bromide used under the quarantine and pre-shipment exemption, unless, subsequent to that person's use of the non-critical use methyl bromide, that person becomes subject to a prohibition on the use of methyl bromide alternatives due to the reaching of a local township limit described in appendix L of this part, or becomes an approved critical user as a result of rulemaking.

(q) Emergency use exemption. [Reserved]

- (r) No person may sell or use methyl bromide produced or imported under the quarantine and preshipment exemption for any purpose other than for quarantine applications or preshipment applications as defined in § 82.3. Each kilogram of methyl bromide produced or imported under the authority of the quarantine and preshipment exemption and sold or used for a use other than quarantine or preshipment is a separate violation of this subpart.
- (s) No person may sell or distribute, or offer for sale or distribution, any class I substance that they know, or have reason to know, was imported in violation of this section, except for such actions needed to re-export the controlled substance. Every kilogram of a controlled substance imported in contravention of this paragraph (s) that is sold or distributed, or offered for sale or distribution, constitutes a separate violation of this subpart.

[60 FR 24986, May 10, 1995]

Editorial Note: For FEDERAL REGISTER citations affecting § 82.4, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at www.govinfo.gov.

§ 82.5 Apportionment of baseline production allowances for class I controlled substances.

Persons who produced controlled substances in Group I or Group II in 1986 are apportioned baseline production allowances as set forth in paragraphs (a) and (b) of this section. Persons who produced controlled substances in Group III, IV, or V in 1989 are apportioned baseline production allowances as set forth in paragraphs (c), (d), and (e) of this section. Persons who produced controlled substances in Group VI and VII in 1991 are apportioned baseline allowances as set forth in paragraphs (f) and (g) of this section.

<i>Controlled substance</i>	<i>Person</i>	<i>Allowances (kg)</i>
(a) For Group I controlled substances:		
CFC-11	Allied-Signal, Inc	23,082,358
	E.I. DuPont de Nemours & Co	33,830,000
	Elf Atochem, N.A	21,821,500
CFC-12	Laroche Chemicals	12,856,364
	Allied-Signal, Inc	35,699,776
	E.I. DuPont de Nemours & Co	64,849,000
CFC-113	Elf Atochem, N.A	31,089,807
	Laroche Chemicals	15,330,909
	Allied-Signal, Inc	21,788,896
CFC-114	E.I. DuPont de Nemours & Co	58,553,000
	Allied-Signal, Inc	1,488,569
CFC-115	E.I. DuPont de Nemours & Co	4,194,000
	E.I. DuPont de Nemours & Co	4,176,000
(b) For Group II controlled substances:		
Halon-1211	Great Lakes Chemical Corp	826,487

<i>Controlled substance</i>	<i>Person</i>	<i>Allowances (kg)</i>
Halon-1301	ICI Americas, Inc	2,135,484
	E.I. DuPont de Nemours & Co	3,220,000
	Great Lakes Chemical Corp	1,766,850
Halon-2402		
(c) For Group III controlled substances:		
CFC-13	Allied-Signal, Inc	127,125
	E.I. DuPont de Nemours & Co	187,831
	Elf Atochem, N.A	3,992
	Great Lakes Chemical Corp	56,381
	Laroche Chemicals	29,025
CFC-111		
CFC-112		
CFC-211	E.I. DuPont de Nemours & Co	11
CFC-212	E.I. DuPont de Nemours & Co	11
CFC-213	E.I. DuPont de Nemours & Co	11
CFC-214	E.I. DuPont de Nemours & Co	11
CFC-215	E.I. DuPont de Nemours & Co	511
	Halocarbon Products Corp	1,270
CFC-216	E.I. DuPont de Nemours & Co	170,574
CFC-217	E.I. DuPont de Nemours & Co	511
(d) For Group IV controlled substances:		
CCl ₄	Akzo Chemicals, Inc	7,873,615
	Degussa Corporation	26,546
	Dow Chemical Company, USA	18,987,747
	E.I. DuPont de Nemours & Co	9,099
	Hanlin Chemicals-WV, Inc	219,616
	ICI Americas, Inc	853,714
	Occidental Chemical Corp	1,059,358
	Vulcan Chemicals	21,931,987
(e) For Group V controlled substances:		
Methyl Chloroform	Dow Chemical Company, USA	168,030,117
	E.I. DuPont de Nemours & Co	2
	PPG Industries, Inc	57,450,719
	Vulcan Chemicals	89,689,064
(f) For Group VI controlled substances:		
Methyl Bromide	Great Lakes Chemical Corporation	19,945,788
	Ethyl Corporation	8,233,894
(g) For Group VII controlled substances:		

<i>Controlled substance</i>	<i>Person</i>	<i>Allowances (kg)</i>
HBFC 22B1-1	Great Lakes Chemical Corporation	46,211

[60 FR 24986, May 10, 1995, as amended at 68 FR 2848, Jan. 21, 2003]

§ 82.6 Apportionment of baseline consumption allowances for class I controlled substances.

Persons who produced, imported, or produced and imported controlled substances in Group I or Group II in 1986 are apportioned chemical-specific baseline consumption allowances as set forth in paragraphs (a) and (b) of this section. Persons who produced, imported, or produced and imported controlled substances in Group III, Group IV, or Group V in 1989 are apportioned chemical-specific baseline consumption allowances as set forth in paragraphs (c), (d) and (e) of this section. Persons who produced, imported, or produced and imported controlled substances in Group VI or VII in 1991 are apportioned chemical specific baseline consumption allowances as set forth in paragraphs (f) and (g) of this section.

<i>Controlled substance</i>	<i>Person</i>	<i>Allowances (kg)</i>
CFC-11	(a) For Group I controlled substances:	
	Allied-Signal, Inc	22,683,833
	E.I. DuPont de Nemours & Co	32,054,283
	Elf Atochem, N.A	21,740,194
	Hoechst Celanese Corporation	185,396
	ICI Americas, Inc	1,673,436
	Kali-Chemie Corporation	82,500
	Laroche Chemicals	12,695,726
	National Refrigerants, Inc	693,707
	Refricentro, Inc	160,697
CFC-12	Sumitomo Corporation of America	5,800
	Allied-Signal, Inc	35,236,397
	E.I. DuPont de Nemours & Co	61,098,726
	Elf Atochem, N.A	32,403,869
	Hoechst Celanese Corporation	138,865
	ICI Americas, Inc	1,264,980
	Kali-Chemie Corporation	355,440
	Laroche Chemicals	15,281,553
	National Refrigerants, Inc	2,375,384
	Refricentro, Inc	242,526
CFC-113	Allied-Signal, Inc	18,241,928

<i>Controlled substance</i>	<i>Person</i>	<i>Allowances (kg)</i>
CFC-114	E.I. DuPont de Nemours & Co	49,602,858
	Elf Atochem, N.A	244,908
	Holchem	265,199
	ICI Americas, Inc	2,399,700
	Refricentro, Inc	37,385
	Sumitomo Corp. of America	280,163
	Allied-Signal, Inc	1,429,582
	E.I. DuPont de Nemours & Co	3,686,103
	Elf Atochem, N.A	22,880
	ICI Americas, Inc	32,930
CFC-115	E.I. DuPont de Nemours & Co	2,764,109
	Elf Atochem, N.A	633,007
	Hoechst Celanese Corporation	8,893
	ICI Americas, Inc	2,366,351
	Laroche Chemicals	135,520
	Refricentro, Inc	27,337
(b) For Group II controlled substances:		
Halon-1211	Elf Atochem, N.A	411,292
	Great Lakes Chemical Corp	772,775
	ICI Americas, Inc	2,116,641
	Kali-Chemie Corporation	330,000
Halon-1301	E.I. DuPont de Nemours & Co	2,772,917
	Elf Atochem, N.A	89,255
	Great Lakes Chemical Corp	1,744,132
	Kali-Chemie Corporation	54,380
Halon-2402	Ausimont	34,400
	Great Lakes Chemical Corp	15,900
(c) For Group III controlled substances:		
CFC-13	Allied-Signal, Inc	127,124
	E.I. DuPont de Nemours & Co	158,508
	Elf Atochem, N.A	3,992
	Great Lakes Chemical Corp	56,239
	ICI Americas, Inc	5,855
	Laroche Chemicals	29,025
	National Refrigerants, Inc	16,665
CFC-111		
CFC-112	Sumitomo Corp of America	5,912
	TG (USA) Corporation	9,253

<i>Controlled substance</i>	<i>Person</i>	<i>Allowances (kg)</i>
CFC-211	E.I. DuPont de Nemours & Co	11
CFC-212	E.I. DuPont de Nemours & Co	11
CFC-213	E.I. DuPont de Nemours & Co	11
CFC-214	E.I. DuPont de Nemours & Co	11
CFC-215	E.I. DuPont de Nemours & Co	511
	Halocarbon Products Corp	1,270
CFC-216	E.I. DuPont de Nemours & Co	170,574
CFC-217	E.I. DuPont de Nemours & Co	511
	(d) For Group IV controlled substances:	
CCl ₄	Crescent Chemical Co	56
	Degussa Corporation	12,466
	Dow Chemical Company, USA	8,170,561
	E.I. DuPont de Nemours & Co	26,537
	Elf Atochem, N.A	41
	Hanlin Chemicals-WV, Inc	103,133
	Hoechst Celanese Corporation	3
	ICC Chemical Corp	1,173,723
	ICI Americas, Inc	855,466
	Occidental Chemical Corp	497,478
	Sumitomo Corporation of America	9
	(e) For Group V controlled substances:	
Methyl Chloroform	3V Chemical Corp	3,528
	Actex, Inc	50,171
	Atochem North America	74,355
	Dow Chemical Company, USA	125,200,200
	E.I. DuPont de Nemours & Co	2
	IBM	2,026
	ICI Americas, Inc	14,179,850
	Laidlaw	420,207
	PPG Industries	45,254,115
	Sumitomo	1,954
	TG (USA) Corporation	7,073
	Unitor Ships Service, Inc	14,746
	Vulcan Chemicals	70,765,072
	(f) For Group VI controlled substances:	
Methyl Bromide	Great Lakes Chemical Corporation	15,514,746
	Ethyl Corporation	6,379,906
	AmeriBrom, Inc	3,524,393

<i>Controlled substance</i>	<i>Person</i>	<i>Allowances (kg)</i>
	TriCal, Inc	109,225
	(g) For Group VII controlled substances:	
HBFC 22B1-1	Great Lakes Chemical Corporation	40,110

[60 FR 24986, May 10, 1995, as amended at 68 FR 2848, Jan. 21, 2003]

§ 82.7 Grant and phase reduction of baseline production and consumption allowances for class I controlled substances.

For each control period specified in the following table, each person is granted the specified percentage of the baseline production and consumption allowances apportioned to him under §§ 82.5 and 82.6 of this subpart.

Control period	Class I substances in groups I and III, (In percent)	Class I substances in group II, (In percent)	Class I substances in group IV (In percent)	Class I substances in group V (In percent)	Class I substances in group VI (In percent)	Class I substances in group VII (In percent)
1994	25	0	50	50	100	100
1995	25	0	15	30	100	100
1996	0	0	0	0	100	0
1997	0	0	0	0	100	0
1998	0	0	0	0	100	0
1999	0	0	0	0	75	0
2000	0	0	0	0	75	0
2001					50	
2002					50	
2003					30	
2004					30	
2005					0	

[65 FR 70803, Nov. 28, 2000]

§ 82.8 Grant of essential use allowances and critical use allowances.

- (a) Effective January 1, 1996, persons in the following list are allocated essential-use allowances or exemptions for quantities of a specific class I controlled substance for a specific essential-use (the Administrator reserves the right to revise the allocations based on future decisions of the Parties).

TABLE I—ESSENTIAL USE ALLOWANCES FOR CALENDAR YEAR 2010

(i) Metered Dose Inhalers (for oral inhalation) for Treatment of Asthma and Chronic Obstructive Pulmonary Disease		
Company	Chemical	2010 Quantity (metric tons)
Armstrong	CFC-11 or CFC-12 or CFC-114.	30.0

- (b) There is a global exemption for the production and import of class I controlled substances for essential laboratory and analytical uses, subject to the restrictions in appendix G of this subpart, and subject to the recordkeeping and reporting requirements at § 82.13(u) through (x). There is no amount specified for this exemption.
- (c) Effective January 1, 2005, critical use allowances are apportioned as set forth in paragraph (c)(1) of this section for the exempted production and import of class I, Group VI controlled substances specifically for those approved critical uses listed in appendix L to this subpart for the applicable control period. Every kilogram of production and import in excess of the total number and type of unexpended critical use allowances held for a particular type of use constitutes a separate violation of this subpart.
- (1) Allocated critical use allowances granted for specified control period.

Company	2016 Critical use allowances for pre-plant uses * (kilograms)	2016 Critical use allowances for post-harvest uses * (kilograms)
Great Lakes Chemical Corp. A	84,222	1,179
Chemtura Company		
Albemarle Corp.	34,634	485
ICL-IP America	19,140	268
TriCal, Inc.	596	8
<i>Total</i>	<i>138,592</i>	<i>1,939</i>

* For production or import of Class I, Group VI controlled substance exclusively for the pre-plant or post-harvest uses specified in appendix L to this subpart.

- (2) [Reserved]

[69 FR 77003, Dec. 23, 2004]

Editorial Note: For FEDERAL REGISTER citations affecting § 82.8, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at www.govinfo.gov.

§ 82.9 Availability of production allowances in addition to baseline production allowances for class I controlled substances.

(a)–(b) [Reserved]

(c) A company may increase or decrease its production allowances, including its Article 5 allowances, by trading with another Party to the Protocol according to the provision under this paragraph (c). A company may increase or decrease its essential-use allowances for CFCs for use in essential MDIs according to the provisions under this paragraph (c). A nation listed in appendix C to this subpart (Parties to the Montreal Protocol) must agree either to transfer to the person for the current control period some amount of production or import that the nation is permitted under the Montreal Protocol or to receive from the person for the current control period some amount of production or import that the person is permitted under this subpart. If the controlled substance is produced under the authority of production allowances and is to be sold in the United States or to another Party (not the Party from whom the allowances are received), the U.S. company must expend its consumption allowances allocated under §§ 82.6 and 82.7 in order to produce with the additional production allowances.

(1) For trades from a Party, the person must obtain from the principal diplomatic representative in that nation's embassy in the United States a signed document stating that the appropriate authority within that nation has established or revised production limits or essential-use allowance limits for the nation to equal the lesser of the maximum production that the nation is allowed under the Protocol minus the amount transferred, the maximum production or essential-use allowances that are allowed under the nation's applicable domestic law minus the amount transferred, or the average of the nation's actual national production level for the three years prior to the transfer minus the production transferred. The person must submit to the Administrator a transfer request that includes a true copy of this document and that sets forth the following:

- (i) The identity and address of the person;
- (ii) The identity of the Party;
- (iii) The names and telephone numbers of contact persons for the person and for the Party;
- (iv) The chemical type, type of allowance being transferred, and the level of allowances being transferred;
- (v) The control period(s) to which the transfer applies; and
- (vi) For increased production intended for export to the Party from whom the allowances would be received, a signed statement of intent to export to the Party.
- (vii) In the case of transferring essential-use allowances, the transferor must include a signed document from the transferee identifying the CFC MDI products that will be produced using the essential-use allowances.

(2) For trades to a Party, a person must submit a transfer request that sets forth the following:

- (i) The identity and address of the person;

- (ii) The identity of the Party;
 - (iii) The names and telephone numbers of contact persons for the person and for the Party;
 - (iv) The chemical type, type of allowance being transferred, and the level of allowances being transferred; and
 - (v) The control period(s) to which the transfer applies.
- (3) After receiving a transfer request that meets the requirements of paragraph (c)(2) of this section, the Administrator may, at his discretion, consider the following factors in deciding whether to approve such a transfer:
 - (i) Possible creation of economic hardship;
 - (ii) Possible effects on trade;
 - (iii) Potential environmental implications; and
 - (iv) The total amount of unexpended production or essential-use allowances held by a U.S. entity.
 - (v) In the case of transfer of essential-use allowances the Administrator may consider whether the CFCs will be used for production of essential MDIs.
- (4) The Administrator will issue the person a notice either granting or deducting production allowances, Article 5 allowances, or essential-use allowances, and specifying the control period to which the transfer applies, provided that the request meets the requirement of paragraph (c)(1) of this sections for trades from Parties and paragraph (c)(2) of this section for trades to Parties, unless the Administrator has decided to disapprove the trade under paragraph (c)(3) of this section. For a trade from a Party, the Administrator will issue a notice that revises the allowances held by the person to equal the unexpended production, Article 5, or essential-use allowances held by the person under this subpart plus the level of allowable production transferred from the Party. For a trade to a Party, the Administrator will issue a notice that revises the production limit for the person to equal the lesser of:
 - (i) The unexpended production allowances, essential-use allowances, or Article 5 allowances held by the person under this subpart minus the amount transferred; or
 - (ii) The unexpended production allowances, essential-use allowances, or Article 5 allowances held by the person under this subpart minus the amount by which the United States average annual production of the controlled substance being traded for the three years prior to the transfer is less than the total production allowable for that substance under this subpart minus the amount transferred. The change in allowances will be effective on the date that the notice is issued.
- (5) If after one person obtains approval for a trade of allowable production of a controlled substance to a Party, one or more other persons obtain approval for trades involving the same controlled substance and the same control period, the Administrator will issue notices revising the production limits for each of the other persons trading that controlled substance in that control period to equal the lesser of:
 - (i) The unexpended production allowances or Article 5 allowances held by the person under this subpart minus the amount transferred; or

- (ii) The unexpended production allowances or Article 5 allowances held by the person under this subpart minus the amount by which the United States average annual production of the controlled substance being traded for the three years prior to the transfer is less than the total allowable production for that substance under this subpart multiplied by the amount transferred divided by the total amount transferred by all the other persons trading the same controlled substance in the same control period minus the amount transferred by that person.
- (iii) The Administrator will also issue a notice revising the production limit for each person who previously obtained approval of a trade of that substance in that control period to equal the unexpended production allowances or unexpended Article 5 allowances held by the person under this subpart plus the amount by which the United States average annual production of the controlled substance being traded for the three years prior to the transfer is less than the total allowable production under this subpart multiplied by the amount transferred by that person divided by the amount transferred by all of the persons who have traded that controlled substance in that control period. The change in production allowances or Article 5 allowances will be effective on the date that the notice is issued.
- (d) Effective January 1, 1996, there will be no trade in production or consumption allowances with other Parties to the Protocol for class I controlled substances, except for class I, Group VI, methyl bromide.
- (e)–(f) [Reserved]
- (g) *International transfer of essential-use CFCs.*
 - (1) For trades of essential-use CFCs where the transferee or the transferor is a person in another nation (Party), the persons involved in the transfer must submit the information requested in § 82.12(d)(2) and (d)(3), along with a signed document from the principal diplomatic representative in the Party's embassy in the United States stating that the appropriate authority within that nation has approved the transfer of the essential-use CFCs.
 - (2) If the transfer claim is complete, and EPA does not object to the transfer, then EPA will issue letters to the transferor and the transferee indicating that the transfer may proceed. EPA reserves the right to disallow a transfer if the transfer request is incomplete, or if it has reason to believe that the transferee plans to produce MDIs that are not essential MDIs. If EPA objects to the transfer, EPA will issue letters to the transferor and transferee stating the basis for disallowing the transfer. The burden of proof is placed on the transferee to retain sufficient records to prove that the transferred essential-use CFCs are used only for production of essential MDIs. If EPA ultimately finds that the transferee did not use the essential-use CFCs for production of essential MDIs then the transferee is in violation of this subpart.

[60 FR 24986, May 10, 1995, as amended at 63 FR 41643, Aug. 4, 1998; 63 FR 53290, Oct. 5, 1998; 65 FR 70804, Nov. 28, 2000; 67 FR 6360, Feb. 11, 2002; 67 FR 21134, Apr. 29, 2002; 70 FR 77047, Dec. 29, 2005; 85 FR 15292, Mar. 17, 2020]

§ 82.10 [Reserved]

§ 82.11 Exports of class I controlled substances to Article 5 Parties.

- (a) If apportioned Article 5 allowances under § 82.9(a) or § 82.11(a)(2), a person may produce Class I controlled substances, in accordance with the prohibitions in § 82.4 and the reduction schedule in § 82.11(a)(3), to be exported (not including exports resulting in transformation or destruction, or exports of used controlled substances) to foreign states listed in appendix E to this subpart (Article 5 countries).

- (1) A person must submit a notice to the Administrator of exports to Article 5 countries (except exports resulting in transformation or destruction, or used controlled substances) at the end of the quarter that includes the following:
 - (i) The identities and addresses of the exporter and the Article 5 country recipient of the exports;
 - (ii) The exporter's Employee Identification Number;
 - (iii) The names and telephone numbers of contact persons for the exporter and for the recipient;
 - (iv) The quantity and the type of controlled substances exported, its source and date purchased;
 - (v) The date on which, and the port from which, the controlled substances were exported from the United States or its territories;
 - (vi) The Article 5 country to which the controlled substances were exported;
 - (vii) A copy of the bill of lading and invoice indicating the net quantity shipped and documenting the sale of the controlled substances to the Article 5 purchaser;
 - (viii) The commodity code of the controlled substance exported; and
 - (ix) A copy of the invoice or sales agreement covering the sale of the controlled substances to the recipient Article 5 country that contains provisions forbidding the reexport of the controlled substance in bulk form and subjecting the recipient or any transferee of the recipient to liquidated damages equal to the resale price of the controlled substances if they are reexported in bulk form.
- (2) Persons who reported exports of Class I, Group I controlled substances to Article 5 countries in 2000-2003 are apportioned baseline Article 5 allowances as set forth in § 82.11(a)(2)(i). Persons who reported exports of Class I, Group VI controlled substances to Article 5 countries in 1995-1998 are apportioned baseline Article 5 allowances as set forth in § 82.11(a)(2)(ii).
 - (i) For Group I Controlled Substances

Controlled Substance	Person	Allowances (kg)
CFC-11	Honeywell	7,150
	Sigma Aldrich	1
CFC-113	Fisher Scientific	5
	Honeywell	313,686
CFC-114	Sigma Aldrich	48
	Honeywell	24,798

Controlled Substance	Person	Allowances (kg)
	Sigma Aldrich	1

(ii) For Group VI Controlled Substances

Controlled Substance	Person	Allowances (kg)
Methyl Bromide	Albemarle	1,152,714
	Ameribrom	176,903
	Great Lakes Chemical Corporation	3,825,846

- (3) Phased Reduction Schedule for Article 5 Allowances allocated in § 82.11. For each control period specified in the following table, each person is granted the specified percentage of the baseline Article 5 allowances apportioned under § 82.11.

Control Period	Class I substances in group I (In percent)	Class I substances in group VI (In percent)
2006	50	80
2007	15	80
2008	15	80
2009	15	80
2010	0	80
2011	0	80
2012	0	80
2013	0	80
2014	0	80
2015	0	0

(2) [Reserved]

(b) [Reserved]

[60 FR 24986, May 10, 1995, as amended at 70 FR 77047, Dec. 29, 2005]

§ 82.12 Transfers of allowances for class I controlled substances.

(a) *Inter-company transfers.*

- (1) After January 1, 2002, any essential-use allowance holder (including those persons that hold essential-use allowances issued by a Party other than the United States) ("transferor") may transfer essential-use allowances for CFCs to a metered dose inhaler company solely for the manufacture of essential MDIs. After January 1, 2005, any critical use allowance holder ("transferor") may transfer critical use allowances to any other person ("transferee").
 - (i) The transferor must submit to the Administrator a transfer claim setting forth the following:
 - (A) The identities and addresses of the transferor and the transferee;
 - (B) The name and telephone numbers of contact persons for the transferor and the transferee;
 - (C) The type of allowances being transferred, including the names of the controlled substances for which allowances are to be transferred;
 - (D) The group of controlled substances to which the allowances being transferred pertains;
 - (E) The amount of allowances being transferred;
 - (F) The control period(s) for which the allowances are being transferred;
 - (G) The amount of unexpended allowances of the type and for the control period being transferred that the transferor holds under authority of this subpart as of the date the claim is submitted to EPA; and
 - (H) The one percent offset applied to the unweighted amount traded will be deducted from the transferor's production or consumption allowance balance (except for trades from transformers and destroyers to producers or importers for the purpose of allowance reimbursement). In the case of transferring essential use allowances, the amount of one tenth of one percent of the amount traded will be deducted from the transferor's allowance balance. In the case of transferring critical use allowances, the amount of one tenth of one percent of the amount traded will be deducted from the transferor's critical use allowance balance.
 - (j) The transferor must include a signed document from the transferee identifying the CFC MDI products that will be produced using the essential-use allowances.
 - (ii) The Administrator will determine whether the records maintained by EPA, taking into account any previous transfers and any production, allowable imports and exports of controlled substances reported by the transferor, indicate that the transferor possesses, as of the date the transfer claim is processed, unexpended allowances sufficient to cover the transfer claim (*i.e.*, the amount to be transferred plus, in the case of transferors of essential use allowances and critical use allowances, one tenth of one percent of the transferred amount). Within three working days of receiving a complete transfer claim, the Administrator will take action to notify the transferor and transferee as follows:
 - (A) If EPA's records show that the transferor has sufficient unexpended allowances to cover the transfer claim, the Administrator will issue a notice indicating that EPA does not object to the transfer and will reduce the transferor's balance of unexpended allowances by the amount to be transferred plus, in the case of transfers of production or consumption allowances, one percent of that amount, or in the case of transfers of essential use allowances, one tenth of one percent of that amount. When EPA issues a no objection notice, the transferor and the transferee may proceed with the transfer. However, if EPA

ultimately finds that the transferor did not have sufficient unexpended allowances to cover the claim, the transferor and transferee will be held liable for any violations of the regulations of this subpart that occur as a result of, or in conjunction with, the improper transfer.

(B) If EPA's records show that the transferor has insufficient unexpended allowances to cover the transfer claim, or that the transferor has failed to respond to one or more Agency requests to supply information needed to make a determination, the Administrator will issue a notice disallowing the transfer. Within 10 working days after receipt of notification, either party may file a notice of appeal, with supporting reasons, with the Administrator. The Administrator may affirm or vacate the disallowance. If no appeal is taken by the tenth working day after notification, the disallowance shall be final on that day.

(iii) In the event that the Administrator does not respond to a transfer claim within the three working days specified in paragraph (a)(1)(ii) of this section the transferor and transferee may proceed with the transfer. EPA will reduce the transferor's balance of unexpended allowances by the amount to be transferred plus, in the case of transfers of production or consumption allowances, one percent of that amount, and in the case of essential use allowances and critical use allowances, one tenth of one percent of that amount. However if EPA ultimately finds that the transferor did not have sufficient unexpended allowances to cover the claim, the transferor and transferee will be held liable for any violations of the regulations of this subpart that occur as a result of, or in conjunction with, the improper transfer.

(2) [Reserved]

(b)–(c) [Reserved]

(d) ***Transfers of essential-use CFCs.***

(1) Effective January 1, 2002, any metered dose inhaler company (transferor) may transfer essential-use CFCs to another metered dose inhaler company (transferee) provided that the Administrator approves the transfer.

(2) The transferee must submit a transfer claim to the Administrator for approval before the transfer can take place. The transfer claim must set forth the following:

- (i) The identities and addresses of the transferor and the transferee; and
- (ii) The name and telephone numbers of contact persons for the transferor and the transferee; and
- (iii) The amount of each controlled substance (CFC-11, CFC-12, or CFC-114) being transferred; and
- (iv) The specific metered dose inhaler products (i.e. the MDI drug product or active moiety) that the transferee plans to produce with the transferred CFCs; and
- (v) The country(ies) where the CFC metered dose inhalers produced with the transferred essential-use CFCs will be sold if other than in the United States; and
- (vi) Certification that the essential-use CFCs will be used in the production of essential MDIs. If the MDIs are to be sold in the United States, the certification must state that MDIs produced with the transferred essential-use CFCs are listed as essential at 21 CFR 2.125, and were approved by the Food and Drug Administration before December 31, 2000. If the MDIs produced with the

essential-use CFCs are to be sold outside the United States, the transferee must certify that the metered dose inhalers produced with the essential-use CFCs are considered essential by the importing country.

- (3) The transferor must submit a letter stating that it concurs with the terms of the transfer as requested by the transferee.
- (4) Once the transfer claim is complete, and if EPA does not object to the transfer, then EPA will issue letters to the transferor and the transferee within 10 business days indicating that the transfer may proceed. EPA reserves the right to disallow a transfer if the transfer request is incomplete, or if it has reason to believe that the transferee plans use the essential-use CFCs in anything other than essential MDIs. If EPA objects to the transfer, within EPA will issue letters to the transferor and transferee stating the basis for disallowing the transfer. The burden of proof is placed on the transferee to retain sufficient records to prove that the transferred essential-use CFCs are used only for production of essential MDIs. If EPA ultimately finds that the transferee did not use the essential-use CFCs for production of essential MDIs then the transferee is in violation of this subpart.

[60 FR 24986, May 10, 1995, as amended at 65 FR 70804, Nov. 28, 2000; 66 FR 1471, Jan. 8, 2001; 67 FR 6361, Feb. 11, 2002; 69 FR 77004, Dec. 23, 2004; 79 FR 44311, July 31, 2014; 85 FR 15292, Mar. 17, 2020]

§ 82.13 Recordkeeping and reporting requirements for class I controlled substances.

- (a) **Effective dates.** Unless otherwise specified, the recordkeeping and reporting requirements set forth in this section take effect on January 1, 1995. For class I, Group VIII controlled substances, the recordkeeping and reporting requirements set forth in this section take effect on August 18, 2003. For critical use methyl bromide, the recordkeeping and reporting requirements set forth in this section take effect January 1, 2005.
- (b) Reports and records required by this section may be used for purposes of compliance determinations. These requirements are not intended as a limitation on the use of other evidence admissible under the Federal Rules of Evidence. Failure to provide the reports, petitions and records required by this section, and to certify the accuracy of the information in the reports, petitions and records required by this section, will be considered a violation of this subpart. False statements made in reports, petitions and records will be considered violations of Section 113 of the Clean Air Act.
- (c) **Timing of reports.** Unless otherwise specified, reports required by this section must be submitted to the Administrator within 45 days of the end of the applicable reporting period. Revisions of reports that are required by this section must be submitted to the Administrator within 180 days of the end of the applicable reporting period, unless otherwise specified. Starting May 18, 2020, reports that are available for submission through the Central Data Exchange or another format specified by EPA must be submitted electronically through that tool.
- (d) Records and copies of reports required by this section must be retained for three years.
- (e) In reports required by this section, quantities of controlled substances must be stated in terms of kilograms.
- (f) **Producers.** Every person ("producer") who produces class I controlled substances during a control period must comply with the following recordkeeping and reporting requirements:

- (1) Within 120 days of May 10, 1995, or within 120 days of the date that a producer first produces a class I controlled substance, whichever is later, and within 120 days of July 18, 2003 for class I, Group VIII controlled substances, every producer who has not already done so must submit to the Administrator a report describing:
 - (i) The method by which the producer in practice measures daily quantities of controlled substances produced;
 - (ii) Conversion factors by which the daily records as currently maintained can be converted into kilograms of controlled substances produced, including any constants or assumptions used in making those calculations (e.g., tank specifications, ambient temperature or pressure, density of the controlled substance);
 - (iii) Internal accounting procedures for determining plant-wide production;
 - (iv) The quantity of any fugitive losses accounted for in the production figures; and
 - (v) The estimated percent efficiency of the production process for the controlled substance. Within 60 days of any change in the measurement procedures or the information specified in the above report, the producer must submit a report specifying the revised data or procedures to the Administrator.
- (2) **Recordkeeping requirements** Every producer of a class I controlled substance during a control period must maintain the following records:
 - (i) Dated records of the quantity of each controlled substance produced at each facility;
 - (ii) Dated records of the quantity of controlled substances produced for use in processes that result in their transformation or for use in processes that result in their destruction and quantity sold for use in processes that result in their transformation or for use in processes that result in their destruction;
 - (iii) Dated records of the quantity of controlled substances produced for an essential-use and quantity sold for use in an essential-use process;
 - (iv)–(v) [Reserved]
 - (vi) Copies of invoices or receipts documenting sale of controlled substance for use in processes resulting in their transformation or for use in processes resulting in destruction;
 - (vii) Dated records of the quantity of each controlled substance used at each facility as feedstocks or destroyed in the manufacture of a controlled substance or in the manufacture of any other substance, and any controlled substance introduced into the production process of the same controlled substance at each facility;
 - (viii) Dated records identifying the quantity of each chemical not a controlled substance produced within each facility also producing one or more controlled substances;
 - (ix) Dated records of the quantity of raw materials and feedstock chemicals used at each facility for the production of controlled substances;
 - (x) Dated records of the shipments of each controlled substance produced at each plant;

- (xi) The quantity of controlled substances, the date received, and names and addresses of the source of used materials containing controlled substances which are recycled or reclaimed at each plant;
- (xii) Records of the date, the controlled substance, and the estimated quantity of any spill or release of a controlled substance that equals or exceeds 100 pounds;
- (xiii) Internal Revenue Service Certificates in the case of transformation, or the destruction verification in the case of destruction (as in § 82.13(k)), showing that the purchaser or recipient of a controlled substance, in the United States or in another country that is a Party, certifies the intent to either transform or destroy the controlled substance, or sell the controlled substance for transformation or destruction in cases when production and consumption allowances were not expended;
- (xiv) Written verifications that essential-use allowances were conveyed to the producer for the production of specified quantities of a specific controlled substance that will only be used for the named essential-use and not resold or used in any other manufacturing process;
- (xv) Written certifications that quantities of controlled substances, meeting the purity criteria in appendix G of this subpart, were purchased by distributors of laboratory supplies or by laboratory customers to be used only in essential laboratory and analytical uses as defined by appendix G, and not to be resold or used in manufacturing;
- (xvi) [Reserved]
- (xvii) For methyl bromide, dated records of the quantity of controlled substances produced for quarantine and preshipment applications and quantity sold for quarantine and preshipment applications;
- (xviii) Written certifications that quantities of methyl bromide produced solely for quarantine and preshipment applications were purchased by distributors or applicators to be used only for quarantine applications and preshipment applications in accordance with the definitions in this subpart; and
- (xix) Written verifications from a U.S. purchaser that methyl bromide produced solely for quarantine and preshipment applications, if exported, will be exported solely for quarantine applications and preshipment applications upon receipt of a certification in accordance with the definitions of this subpart and requirements in paragraph (h) of this section.
- (xx) For methyl bromide, dated records such as invoices and order forms, and a log of the quantity of controlled substances produced for critical use, specifying quantities dedicated for pre-plant use and quantities dedicated for post-harvest use, and the quantity sold for critical use, specifying quantities dedicated for pre-plant use and quantities dedicated for post-harvest use;
- (xxi) Written certifications that quantities of methyl bromide produced for critical use were purchased by distributors, applicators, or approved critical users to be used or sold only for critical use in accordance with the definitions and prohibitions in this subpart. Certifications must be maintained by the producer for a minimum of three years; and
- (xxii) For methyl bromide, dated records such as invoices and order forms, and a log of the quantity of controlled substances produced solely for export to satisfy critical uses authorized by the Parties for that control period, and the quantity sold solely for export to satisfy critical uses authorized by the Parties for that control period.

- (3) **Reporting requirements—producers.** For each quarter, except as specified below, each producer of a class I controlled substance must provide the Administrator with a report containing the following information:
- (i) The production by company in that quarter of each controlled substance, specifying the quantity of any controlled substance used in processing, resulting in its transformation by the producer;
 - (ii) The amount of production for use in processes resulting in destruction of controlled substances by the producer;
 - (iii) The levels of production (expended allowances and credits) for each controlled substance;
 - (iv) [Reserved]
 - (v) The amount of controlled substance sold or transferred during the quarter to a person other than the producer for use in processes resulting in its transformation or eventual destruction;
 - (vi) A list of the quantities and names of controlled substances exported, by the producer and or by other U.S. companies, to a Party to the Protocol that will be transformed or destroyed and therefore were not produced expending production or consumption allowances;
 - (vii) For transformation in the United States or by a person of another Party, one copy of an IRS certification of intent to transform the same controlled substance for a particular transformer and a list of additional quantities shipped to that same transformer for the quarter;
 - (viii) For destruction in the United States or by a person of another Party, one copy of a destruction verification (as under § 82.13(k)) for a particular destroyer, destroying the same controlled substance, and a list of additional quantities shipped to that same destroyer for the quarter;
 - (ix) [Reserved]
 - (x) A list of the essential-use allowance holders, distributors of laboratory supplies and laboratory customers from whom orders were placed and the quantity of specific essential-use controlled substances requested and produced;
 - (xi) The certifications from essential-use allowance holders stating that the controlled substances were purchased solely for specified essential uses and will not be resold or used in any other manufacturing process;
 - (xii) In the case of laboratory essential-uses, certifications from distributors of laboratory supplies that controlled substances were purchased for sale to laboratory customers who certify that the substances will only be used for essential laboratory and analytical uses as defined by appendix G of this subpart, and will not be resold or used in manufacturing; or, if sales are made directly to laboratories, certification from laboratories that the controlled substances will only be used for essential laboratory and analytical uses (defined at appendix G of this subpart) and will not be resold or used in manufacturing.
 - (xiii) The amount of methyl bromide sold or transferred during the quarter to a person other than the producer solely for quarantine and preshipment applications;

- (xiv) A list of the quantities of methyl bromide produced by the producer and exported by the producer and/or by other U.S. companies, to a Party to the Protocol that will be used solely for quarantine and preshipment applications and therefore were not produced expending production or consumption allowances; and
- (xv) For quarantine and preshipment applications of methyl bromide in the United States or by a person of another Party, one copy of a certification that the material will be used only for quarantine and preshipment applications in accordance with the definitions in this subpart from each recipient of the material and a list of additional quantities shipped to that same person for the quarter.
- (xvi) For critical uses of methyl bromide, producers shall report annually the amount of critical use methyl bromide owned by the reporting entity, specifying quantities dedicated for pre-plant use and quantities dedicated for post-harvest use, as well as quantities held by the reporting entity on behalf of another entity, specifying quantities dedicated for pre-plant use and quantities dedicated for post-harvest use along with the name of the entity on whose behalf the material is held; and
- (xvii) A list of the quantities of methyl bromide produced by the producer and exported by the producer and/or by other U.S. companies in that control period, solely to satisfy the critical uses authorized by the Parties for that control period; and
- (xviii) On an annual basis, the amount of methyl bromide produced or imported prior to the January 1, 2005, phaseout date owned by the reporting entity, as well as quantities held by the reporting entity on behalf of another entity, specifying the name of the entity on whose behalf the material is held.

(4) For any person who fails to maintain the records required by this paragraph, or to submit the report required by this paragraph, the Administrator may assume that the person has produced at full capacity during the period for which records were not kept, for purposes of determining whether the person has violated the prohibitions at § 82.4.

(g) **Importers.** Importers of class I controlled substances during a control period must comply with record-keeping and reporting requirements specified in this paragraph (g).

(1) **Recordkeeping—importers.** Any importer of a class I controlled substance (including used, recycled and reclaimed controlled substances) must maintain the following records:

- (i) The quantity of each controlled substance imported, either alone or in mixtures, including the percentage of each mixture which consists of a controlled substance;
- (ii) The quantity of those controlled substances imported that are used (including recycled or reclaimed) and, where applicable, the information provided with the petition as under paragraph (g)(2) of this section;
- (iii) The quantity of controlled substances other than transshipments or used, recycled or reclaimed substances imported for use in processes resulting in their transformation or destruction and quantity sold for use in processes that result in their destruction or transformation;
- (iv) The date on which the controlled substances were imported;
- (v) The port of entry through which the controlled substances passed;
- (vi) The country from which the imported controlled substances were imported;

- (vii) The commodity code for the controlled substances shipped, which must be one of those listed in Appendix K to this subpart;
 - (viii) The importer number for the shipment;
 - (ix) A copy of the bill of lading for the import;
 - (x) The invoice for the import;
 - (xi) The quantity of imports of used, recycled, or reclaimed class I controlled substances;
 - (xii) The U.S. Customs entry number;
 - (xiii) Dated records documenting the sale or transfer of controlled substances for use in processes resulting in transformation or destruction;
 - (xiv) Copies of IRS certifications that the controlled substance will be transformed or destruction verifications that it will be destroyed (as in § 82.13(k));
 - (xv) Dated records of the quantity of controlled substances imported for an essential use; and
 - (xvi) Copies of certifications that imported controlled substances are being purchased for essential laboratory and analytical uses (defined at appendix G of this subpart) or being purchased for eventual sale to laboratories that certify that controlled substances are for essential laboratory and analytical uses (defined at appendix G of this subpart).
 - (xvii) Dated records of the quantity of methyl bromide imported for quarantine and preshipment applications and quantity sold for quarantine and preshipment applications;
 - (xviii) Written certifications that quantities of methyl bromide imported solely for quarantine and preshipment applications were purchased by distributors or applicators to be used only for quarantine and preshipment applications in accordance with the definitions in this subpart; and
 - (xix) Written verifications from a U.S. purchaser that methyl bromide imported solely for quarantine and preshipment applications, if exported, will be exported solely for quarantine and preshipment applications upon receipt of a certification in accordance with the definitions of this subpart and requirements in paragraph (h) of this section.
 - (xx) For methyl bromide, dated records such as invoices and order forms, of the quantity of controlled substances imported for critical use, specifying quantities dedicated for pre-plant use and quantities dedicated for post-harvest use, and the quantity sold for critical use, specifying quantities dedicated for pre-plant use and quantities dedicated for post-harvest use; and
 - (xxi) Written certifications that quantities of methyl bromide imported for critical use were purchased by distributors, applicators, or approved critical users to be used or sold only for critical use in accordance with the definitions and prohibitions in this subpart. Certifications must be maintained by an importer for a minimum of three years.
- (2) ***Petitioning—importers of used, recycled, or reclaimed controlled substances.*** For each individual shipment over 5 pounds of a used controlled substance as defined in § 82.3, except for Group II used controlled substances shipped in aircraft halon bottles for hydrostatic testing and imports intended for destruction, an importer must submit directly to the Administrator, at least 40 working days before the shipment is to leave the foreign port of export, the following information in a petition:

- (i) Name, commodity code, and quantity in kilograms of the used controlled substance to be imported;
- (ii) Name and address of the importer, the importer ID number, and the contact person's name, email address, and phone number;
- (iii) Name, address, contact person, email address, and phone number of all previous source facilities from which the used controlled substance was recovered or the halon bank storing the controlled substance;
- (iv) A detailed description of the previous use of the controlled substance at each source facility and a best estimate of when the specific controlled substance was put into the equipment at each source facility, and, when possible, documents indicating the date the material was put into the equipment;
- (v) A list of the name, make and model number of the equipment from which the material was recovered at each source facility;
- (vi) Name, address, contact person, email address, and phone number of the exporter and of all persons to whom the material was transferred or sold after it was recovered from the source facility;
- (vii) The U.S. port of entry for the import, the expected date of shipment and the vessel transporting the chemical. If at the time of submitting a petition the importer does not know the U.S. port of entry, the expected date of shipment and the vessel transporting the chemical, and the importer receives a non-objection notice for the individual shipment in the petition, the importer is required to notify the Administrator of this information prior to the actual U.S. Customs entry of the individual shipment;
- (viii) A description of the intended use of the used controlled substance, and, when possible, the name, address, contact person, email address, and phone number of the ultimate purchaser in the United States;
- (ix) Name, address, contact person, email address, and phone number of the U.S. reclamation facility, where applicable;
- (x) If someone at the source facility recovered the controlled substance from the equipment, the name, email address, and phone number of that person;
- (xi) If the imported controlled substance was reclaimed in a foreign Party, the name, address, contact person, email address, and phone number of any or all foreign reclamation facility(ies) responsible for reclaiming the cited shipment;
- (xii) The export license, application for an export license, or official communication acknowledging the export from the appropriate government agency in the country of export and, if recovered in another country, the export license or official communication from the appropriate government agency in that country, and quantity authorized for export in kilograms on the export license, and an English translation of these documents;
- (xiii) If the imported used controlled substance is intended to be sold as a refrigerant in the United States, the name, address, and email address of the EPA-certified U.S. reclaimer who will bring the material to the standard required under subpart F of this part if not already reclaimed to those specifications; and

(xiv) [Reserved]

(xv) If the used controlled substance is stored in a halon bank, in lieu of the information required in paragraphs (g)(2)(iv) through (vi) of this section, the petitioner may provide an official letter from the appropriate government agency in the country where the material is stored indicating that the halon is used and that the halon bank is authorized to collect used halon. If source information in paragraphs (g)(2)(iv) through (vi) is available, it should also be provided in addition to the letter.

(3) **Review of petition to import a used substance.** Starting on the first working day following receipt by the Administrator of a petition to import a used class I controlled substance, the Administrator will initiate a review of the information submitted under paragraph (g)(2) of this section and take action within 40 working days to issue either an objection-notice or a non-objection notice for the individual shipment to the person who submitted the petition to import the used class I controlled substance.

(i) For the following reasons, the Administrator may issue an objection notice to a petition:

- (A) If the Administrator determines that the information is insufficient, that is, if the petition lacks or appears to lack any of the information required under paragraph (g)(2) of this section or other information that may be requested during the review of the petition necessary to verify that the controlled substance is used;
- (B) If the Administrator determines that any portion of the petition contains false or misleading information, or the Administrator has information from other U.S. or foreign government agencies indicating that the petition contains false or misleading information;
- (C) If the importer wishes to import a used class I controlled substance from a country which is, for that particular controlled substance, out of compliance regarding its phaseout obligations under the Protocol or the transaction in the petition is contrary to other provisions in the Vienna Convention or the Montreal Protocol;
- (D) If the appropriate government agency in the exporting country has not agreed to issue an export license for the cited individual shipment of used controlled substance;
- (E) If allowing the import of the used class I controlled substance would run counter to government restrictions from either the country of recovery or export regarding controlled ozone-depleting substances;
- (F) If reclamation capacity is installed or is being installed for that specific controlled substance in the country of recovery or country of export and the capacity is funded in full or in part through the Multilateral Fund.

(ii) Within ten (10) working days after receipt of the objection notice, the importer may re-petition the Administrator, only if the Administrator indicated "insufficient information" as the basis for the objection notice. If no appeal is taken by the tenth working day after the date on the objection notice, the objection shall become final. Only one appeal of re-petition will be accepted for any petition received by EPA.

(iii) Any information contained in the re-petition which is inconsistent with the original petition must be identified and a description of the reason for the inconsistency must accompany the re-petition.

- (iv) In cases where the Administrator does not object to the petition based on the criteria listed in paragraph (g)(3)(i) of this section, the Administrator will issue a non-objection notice.
- (v) To pass the approved used class I controlled substances through U.S. Customs, the non-objection notice issued by EPA must accompany the shipment through U.S. Customs.
- (vi) If for some reason, following EPA's issuance of a non-objection notice, new information is brought to EPA's attention which shows that the non-objection notice was issued based on false information, then EPA has the right to:
 - (A) Revoke the non-objection notice;
 - (B) Pursue all means to ensure that the controlled substance is not imported into the United States; and
 - (C) Take appropriate enforcement actions.
- (vii) A person receiving the non-objection notice is permitted to import the individual shipment only within one year of the date stamped on the non-objection notice.
- (viii) A person receiving a non-objection notice from the Administrator for a petition to import used class I controlled substances must maintain the following records:
 - (A) a copy of the petition;
 - (B) the EPA non-objection notice;
 - (C) the bill of lading for the import; and
 - (D) The U.S. Customs entry number.
- (4) **Reporting requirements—importers.** For each quarter, except as specified below, every importer of a class I controlled substance (including importers of used, recycled or reclaimed controlled substances) must submit to the Administrator a report containing the following information:
 - (i) Summaries of the records required in paragraphs (g)(1) (i) through (xvi) of this section for the previous quarter;
 - (ii) The total quantity imported in kilograms of each controlled substance for that quarter;
 - (iii) The quantity of those controlled substances imported that are used controlled substances.
 - (iv) The levels of import (expended consumption allowances before January 1, 1996) of controlled substances for that quarter and totaled by chemical for the control-period-to-date;
 - (vii) [Reserved]
 - (viii) The amount of controlled substances imported for use in processes resulting in their transformation or destruction;
 - (ix) The amount of controlled substances sold or transferred during the quarter to each person for use in processes resulting in their transformation or eventual destruction;
 - (x) The amount of controlled substances sold or transferred during the quarter to each person for an essential use;
 - (xi) [Reserved]

- (xii) Internal Revenue Service Certificates showing that the purchaser or recipient of imported controlled substances intends to transform those substances or destruction verifications (as in § 82.13(k)) showing that purchaser or recipient intends to destroy the controlled substances; and
 - (xiii) The certifications from essential-use allowance holders stating that the controlled substances were purchased solely for specified essential-uses and will not be resold or used in manufacturing; and the certifications from distributors of laboratory supplies that the controlled substances were purchased solely for eventual sale to laboratories that certify the controlled substances are for essential laboratory and analytical uses (defined at appendix G of this subpart), or if sales are made directly to laboratories, certifications from laboratories that the controlled substances will only be used for essential laboratory and analytical uses (defined at appendix G of this subpart) and will not be resold or used in manufacturing.
 - (xiv) In the case of laboratory essential uses, a certification from distributors of laboratory supplies that controlled substances were purchased for sale to laboratory customers who certify that the substances will only be used for laboratory applications and will not be resold or used in manufacturing; and
 - (xv) The amount of methyl bromide sold or transferred during the quarter to a person other than the importer solely for quarantine and preshipment applications;
 - (xvi) A list of the quantities of methyl bromide exported by the importer and or by other U.S. companies, to a Party to the Protocol that will be used solely for quarantine and preshipment applications and therefore were not imported expending consumption allowances; and
 - (xvii) For quarantine and preshipment applications of methyl bromide in the United States or by a person of another Party, one copy of a certification that the material will be used only for quarantine and preshipment applications in accordance with the definitions in this subpart from each recipient of the material and a list of additional quantities shipped to that same person for the quarter.
 - (xviii) For critical uses of methyl bromide, importers shall report annually the amount of critical use methyl bromide owned by the reporting entity, specifying quantities dedicated for pre-plant use and quantities dedicated for post-harvest use, as well as quantities held by the reporting entity on behalf of another entity, specifying quantities dedicated for pre-plant use and quantities dedicated for post-harvest use along with the name of the entity on whose behalf the material is held.
 - (xix) Importers shall report annually the amount of methyl bromide produced or imported prior to the January 1, 2005, phaseout date owned by the reporting entity, as well as quantities held by the reporting entity on behalf of another entity, specifying the name of the entity on whose behalf the material is held.
- (5) ***Certification of intent to import for destruction.*** For each individual shipment of a class I controlled substance imported with the intent to destroy that substance, an importer must submit electronically to the Administrator, at least 30 working days before the shipment is to leave the foreign port of export, the following information:
- (i) Name, commodity code, and quantity in kilograms of each controlled substance to be imported;

- (ii) Name and address of the importer, the importer ID number, and the contact person's name, email address, and phone number;
 - (iii) Name and address of any intermediary who will aggregate controlled substances imported for destruction, and the contact person's name, email address, and phone number;
 - (iv) The U.S. port of entry for the import, the expected date of shipment and the vessel transporting the material. If at the time of submitting the certification of intent to import for destruction the importer does not know the U.S. port of entry, the expected date of shipment and the vessel transporting the material, and the importer receives a non-objection notice for the individual shipment in the petition, the importer is required to notify the Administrator of this information prior to the entry of the individual shipment into the United States;
 - (v) Name, address, contact person, email address, and phone number of the responsible party at the destruction facility;
 - (vi) The export license, application for an export license, or official communication acknowledging the export from the appropriate government agency in the country of export and, if recovered in another country, the export license or official communication from the appropriate government agency in that country, and quantity authorized for export in kilograms on the export license, and an English translation of these documents; and
 - (vii) A certification of accuracy of the information submitted in the certification.
- (6) ***Destruction verification.*** For each individual shipment of a class I controlled substance imported with the intent to destroy that substance, an importer must submit to the Administrator a copy of the destruction verification within 30 days after destruction of the controlled substance(s).
- (7) ***Review of certification of intent to import for destruction.***
- (i) Starting on the first working day following receipt by the Administrator of a certification of intent to import a class I controlled substance for destruction, the Administrator will initiate a review of the information submitted under paragraph (g)(5) of this section and take action within 30 working days to issue either an objection notice or a non-objection notice for the individual shipment to the person who submitted the certification of intent to import the class I controlled substance for destruction.
 - (ii) The Administrator may issue an objection notice if the petition lacks or appears to lack any of the information required under paragraph (g)(5) of this section or for the reasons listed in paragraphs (g)(3)(i)(B) through (F) of this section.
 - (iii) In cases where the Administrator does not object to the petition, the Administrator will issue a non-objection notice.
 - (iv) To pass the approved class I controlled substances through U.S. Customs, the non-objection notice issued by EPA must accompany the shipment through U.S. Customs.
 - (v) If for some reason, following EPA's issuance of a non-objection notice, new information is brought to EPA's attention which shows that the non-objection notice was issued based on false information, then EPA has the right to:
 - (A) Revoke the non-objection notice;

- (B) Pursue all means to ensure that the class I controlled substance is not imported into the United States; and
 - (C) Take appropriate enforcement actions.
- (8) **Timing of import.** A person receiving the non-objection notice is permitted to import the individual shipment only within one year of the date stamped on the non-objection notice.
- (9) **Additional recordkeeping requirements—importers of used, recycled, or reclaimed controlled substances.** A person receiving a non-objection notice from the Administrator for a certification of intent to import class I controlled substances for destruction must maintain the following records:
 - (i) A copy of the certificate of intent to import for destruction;
 - (ii) The EPA non-objection notice;
 - (iii) A copy of the export license, export license application, or official communication from the appropriate government agency in the country of export;
 - (iv) U.S. Customs entry documents for the import that must include one of the commodity codes from appendix K to this subpart;
 - (v) The date, amount, and type of controlled substance sent for destruction, per shipment;
 - (vi) An invoice from the destruction facility verifying the shipment was received;
 - (vii) A copy of the destruction verification from the destruction facility; and
 - (viii) An English translation of the document in paragraph (g)(9)(iii) of this section.
- (10) **Recordkeeping requirements—aggregators.** A person identified in paragraph (g)(5)(iii) of this section as aggregating a controlled substance prior to destruction must:
 - (i) Maintain transactional records that include the name and address of the entity from whom they received the controlled substance imported for destruction;
 - (ii) Maintain transactional records that include the name and address of the entity to whom they sent the controlled substance imported for destruction;
 - (iii) Maintain records that include the date and quantity of the imported controlled substance received for destruction;
 - (iv) Maintain records that include the date and quantity of the imported controlled substance sent for destruction; and
 - (v) If the person is the final aggregator of such a controlled substance before the material is destroyed, maintain a copy of the destruction verification.
- (h) **Reporting requirements—exporters.**
 - (1) For any exports of class I controlled substances (except methyl bromide) not reported under paragraph (f)(3) of this section (reporting for producers of controlled substances), the exporter who exported a class I controlled substance (except methyl bromide) must submit to the Administrator the following information within 45 days after the end of the control period in which the unreported exports left the United States:
 - (i) The names and addresses of the exporter and the recipient of the exports;

- (ii) The exporter's Employer Identification Number;
- (iii) The type and quantity of each controlled substance exported including the quantity of controlled substance that is used, recycled, or reclaimed;
- (iv) The date on which, and the port from which, the controlled substances were exported from the United States or its territories;
- (v) The country to which the controlled substances were exported;
- (vi) The amount exported to each Article 5 country;
- (vii) The commodity code of the controlled substance shipped; and
- (viii) The invoice or sales agreement containing language similar to the Internal Revenue Service Certificate that the purchaser or recipient of imported controlled substances intends to transform those substances, or destruction verifications (as in paragraph (k) of this section) showing that the purchaser or recipient intends to destroy the controlled substances.

(2) For any exports of methyl bromide not reported under paragraph (f)(3) of this section (reporting for producers of controlled substances), the exporter who exported methyl bromide must submit to the Administrator the following information within 45 days after the end of each quarter in which the unreported exports left the United States:

- (i) The names and addresses of the exporter and the recipient of the exports;
- (ii) The exporter's Employer Identification Number;
- (iii) The quantity of methyl bromide exported by use (transformation, destruction, critical use, or quarantine and preshipment);
- (iv) The date on which, and the port from which, the methyl bromide was exported from the United States or its territories;
- (v) The country to which the methyl bromide was exported;
- (vi) The amount exported to each Article 5 country;
- (vii) The commodity code of the controlled substance shipped; and
- (viii) The invoice or sales agreement containing language similar to the Internal Revenue Service Certificate that the purchaser or recipient of imported methyl bromide intends to transform those substances, the destruction verifications (as in paragraph (k) of this section) showing that the purchaser or recipient intends to destroy the controlled substances, or the certification that the purchaser or recipient and the eventual applicator will only use the material for quarantine and preshipment applications in accordance with the definitions in this subpart.

(i) [Reserved]

(j) Persons who destroy class I controlled substances shall, following promulgation of this rule, provide EPA with a one-time report stating the destruction unit's destruction efficiency and the methods used to record the volume destroyed and those used to determine destruction efficiency and the name of other relevant federal or state regulations that may apply to the destruction process. Any changes to the unit's destruction efficiency or methods used to record volume destroyed and to determine destruction efficiency must be reflected in a revision to this report to be submitted to EPA within 60 days of the change.

- (k) Persons who purchase or receive and subsequently destroy controlled class I substances that were originally produced without expending allowances shall provide the producer or importer from whom they purchased or received the controlled substances with a verification that controlled substances will be used in processes that result in their destruction.
 - (1) The destruction verification shall include the following:
 - (i) Identity and address of the person intending to destroy controlled substances;
 - (ii) Indication of whether those controlled substances will be completely destroyed, as defined in § 82.3 of this rule, or less than completely destroyed, in which case the destruction efficiency at which such substances will be destroyed must be included;
 - (iii) Period of time over which the person intends to destroy controlled substances; and
 - (iv) Signature of the verifying person.
 - (2) If, at any time, any aspects of this verification change, the person must submit a revised verification reflecting such changes to the producer from whom that person purchases controlled substances intended for destruction.
- (l) Persons who purchase class I controlled substances and who subsequently transform such controlled substances shall provide the producer or importer with the IRS certification that the controlled substances are to be used in processes resulting in their transformation.
- (m) Any person who transforms or destroys class I controlled substances who has submitted an IRS certificate of intent to transform or a destruction verification (as under paragraph (k) of this section) to the producer or importer of the controlled substance, must report the names and quantities of class I controlled substances transformed and destroyed for each control period within 45 days of the end of such control period.
- (n) Persons who import or export used controlled substances (including recycled or reclaimed) must label their bill of lading or invoice indicating that the controlled substance is used, recycled or reclaimed.
- (o) Persons who import heels of controlled substances must label their bill of lading or invoice indicating that the controlled substance in the container is a heel.
- (p) Every person who brings back a container with a heel to the United States, as defined in § 82.3, must report quarterly the amount brought into the United States certifying that the residual amount in each shipment is less than 10 percent of the volume of the container and will either:
 - (1) Remain in the container and be included in a future shipment;
 - (2) Be recovered and transformed;
 - (3) Be recovered and destroyed; or
 - (4) Be recovered for a non-emissive use.
- (q) Every person who brings a container with a heel into the United States must report on the final disposition of each shipment within 45 days of the end of the control period.
- (r) Every person who transships a controlled substance must maintain records that indicate that the controlled substance shipment originated in a foreign country destined for another foreign country, and does not enter interstate commerce with the United States.

- (s) Any person allocated essential-use allowances who submits an order to a producer or importer for a controlled substance must report the quarterly quantity received from each producer or importer.
- (t) Any distributor of laboratory supplies receiving controlled substances under the global laboratory essential-use exemption for sale to laboratory customers must report quarterly the quantity received of each controlled substance from each producer or importer.
- (u) Holders of Essential-Use Allowances—Reporting.
 - (1) Within 30 days of the end of every quarter, any person allocated essential-use allowances must submit to the Administrator a report containing the quantity of each controlled substance, in kilograms, purchased and received from each producer and each importer during that quarter as well as from which country the controlled substance was imported.
 - (2) Any person allocated essential-use allowances must submit to the Administrator a report containing the following information within 30 days of the end of the control period, and, if possible, within 20 days of the end of the control period:
 - (i) The gross quantity of each controlled substance, in kilograms, that was used for the essential use during the control period; and
 - (ii) The quantity of each controlled substance, in kilograms, contained in exported products during the control period; and
 - (iii) The quantity of each controlled substance, in kilograms, that was destroyed or recycled during the control period; and
 - (iv) The quantity of each controlled substance, in kilograms, held in inventory as of the last day of the control period, that was acquired with essential use allowances in all control periods (*i.e.* quantity on hand at the end of the year); and
 - (v) The quantity of each controlled substance, in kilograms, in a stockpile that is owned by the company or is being held on behalf of the company under contract, and was produced or imported through the use of production allowances and consumption allowances prior to the phaseout (*i.e.* class I ODSs produced before their phaseout dates); and
 - (vi) For essential use allowances for metered-dose inhalers only, the allowance holder must report the total number of marketable units of each specific metered-dose inhaler product manufactured in the control period.
- (v) **Laboratory use exemption distributors.** Any distributor of laboratory supplies who purchased controlled substances under the global essential laboratory and analytical use exemption must submit quarterly (except distributors following procedures in paragraph (x) of this section) the quantity of each controlled substance purchased by each laboratory customer or distributor whose certification was previously provided to the distributor pursuant to paragraph (w) of this section, the contact information for the source company from which material was purchased, and the laboratories to whom the material is sold.
- (w) **Laboratory use exemption customers.** A laboratory customer purchasing a controlled substance under the global essential laboratory and analytical use exemption must provide the producer, importer or distributor with a one-time-per-year certification for each controlled substance that the substance will only be used for essential laboratory and analytical uses (defined at appendix G of this subpart) and not be resold or used in manufacturing.
 - (1) The identity and address of the laboratory customer;

- (2) The name, email address, and phone number of a contact person for the laboratory customer;
 - (3) The name and quantity of each controlled substance purchased, and the estimated percent of the controlled substance that will be used for each listed type of laboratory application.
- (x) Any distributor of laboratory supplies who purchased class I controlled substances under the global essential laboratory and analytical use exemption, and who only sells the class I controlled substances as reference standards for calibrating laboratory analytical equipment, may write a letter to the Administrator requesting permission to submit the reports required under paragraph (v) of this section annually rather than quarterly. The Administrator will review the request and issue a notification of permission to file annual reports if, in the Administrator's judgment, the distributor meets the requirements of this paragraph. Upon receipt of a notification of extension from the Administrator, the distributor must submit annually the quantity of each controlled substance purchased by each laboratory customer whose certification was previously provided to the distributor pursuant to paragraph (w) of this section.
- (y) **Quarantine and preshipment methyl bromide distributors.** Every distributor of methyl bromide who purchases or receives a quantity produced or imported for quarantine or preshipment applications under the exemptions in this subpart must comply with the following recordkeeping and reporting requirements:
- (1) Every distributor of quarantine and preshipment methyl bromide must certify to the producer, importer, or distributor from whom they purchased or received the controlled substance that quantities purchased or received will be sold only for quarantine applications or preshipment applications in accordance with the definitions in this subpart.
 - (2) Every distributor of quarantine and preshipment methyl bromide must receive from an applicator, exporter, or distributor to whom they sell or deliver the controlled substance a certification, prior to delivery, stating that the quantity will be used or sold solely for quarantine applications or preshipment applications in accordance with definitions in this subpart.
 - (3) Every distributor of quarantine and preshipment methyl bromide must maintain the certifications as records for 3 years.
 - (4) Every distributor of quarantine and preshipment methyl bromide must report to the Administrator within 45 days after the end of each quarter, the total quantity delivered to applicators or end users for quarantine applications and preshipment applications in accordance with definitions in this subpart.
- (z) **Quarantine and preshipment methyl bromide applicators.** Every applicator of methyl bromide who purchases or receives a quantity produced or imported solely for quarantine or preshipment applications under the exemptions in this subpart must comply with the following recordkeeping and reporting requirements:
- (1) **Recordkeeping.** Every applicator of methyl bromide produced or imported for quarantine and preshipment applications under the exemptions of this subpart must maintain, for every application, a document from the commodity owner, shipper, or their agent requesting the use of methyl bromide citing the requirement that justifies its use in accordance with definitions in this subpart. These documents shall be retained for 3 years.

(2) **Reporting.** Every applicator who purchases or receives methyl bromide that was produced or imported for quarantine and preshipment applications under the exemptions in this subpart shall provide the distributor of the methyl bromide, prior to shipment, with a certification that the methyl bromide will be used only for quarantine applications or preshipment applications as defined in this subpart.

(aa) **Quarantine and preshipment methyl bromide end user certification.** Every commodity owner, shipper or their agent requesting an applicator to use methyl bromide that was produced or imported solely for quarantine and preshipment applications under the exemptions of this subpart must maintain a record for 3 years, for each request, certifying knowledge of the requirements associated with the exemption for quarantine and preshipment applications in this subpart and citing the requirement that justifies its use. The record must include the following statement: "I certify knowledge of the requirements associated with the exempted quarantine and preshipment applications published in 40 CFR part 82, including the requirement that this letter cite the treatments or official controls for quarantine applications or the official requirements for preshipment requirements."

(bb) Every distributor of methyl bromide (class I, Group VI controlled substances) who purchases or receives a quantity of critical use methyl bromide must comply with recordkeeping and reporting requirements specified in this paragraph (bb).

(1) Recordkeeping—Every distributor of critical use methyl bromide must certify to the producer or importer or other entity from which they are acquiring quantities of critical use methyl bromide that such quantities received will be sold or used only for approved critical use(s) in accordance with the definitions and prohibitions in this subpart.

(i) Every distributor of a quantity of critical use methyl bromide must receive from an applicator, or any other entity to whom they sell critical use methyl bromide, a certification of the quantity of critical use methyl bromide ordered, prior to delivery of the quantity, stating that the quantity will be sold or used only for approved critical uses in accordance with definitions and prohibitions in this subpart.

(ii) Every distributor of methyl bromide who receives a certification from an applicator or any other entity to which they sell critical use methyl bromide must maintain the certifications as records for 3 years.

(iii) Every distributor of a quantity of critical use methyl bromide must maintain invoice and order records related to the sale of such material for 3 years.

(2) Reporting—Every distributor of critical use methyl bromide must report to the Administrator annually, the following items:

(i) For critical uses of class I, Group VI controlled substances, an annual list of the amount of critical use methyl bromide bought;

(ii) For critical uses of class I, Group VI controlled substances, an annual list of the amount of critical use methyl bromide sold for each specified critical use in Appendix L of this subpart;

- (iii) For critical uses of class I, Group VI controlled substances, report the amount of critical use methyl bromide owned by the reporting entity, specifying quantities dedicated for pre-plant use and quantities dedicated for post-harvest use, as well as quantities held by the reporting entity on behalf of another entity, specifying quantities dedicated for pre-plant use and quantities dedicated for post-harvest use, along with the name of the entity on whose behalf the material is held;
 - (iv) [Reserved]
 - (v) The amount of methyl bromide produced or imported prior to the January 1, 2005, phaseout date owned by the reporting entity, as well as quantities held by the reporting entity on behalf of another entity, specifying the name of the entity on whose behalf the material is held.
- (cc) Every third party applicator of methyl bromide (class I, Group VI controlled substances) that purchases or receives critical use methyl bromide must comply with recordkeeping and reporting requirements specified in this paragraph (cc).
- (1) Recordkeeping—Every third party applicator of critical use methyl bromide must certify to the producer or importer or other entity from which they are acquiring quantities of critical use methyl bromide that such quantities received will be sold or used only for approved critical use(s) in accordance with the definitions and prohibitions in this subpart.
- (i) Every third party applicator of a quantity of critical use methyl bromide must receive from any entity to whom they sell critical use methyl bromide, a certification of the quantity of critical use methyl bromide ordered, prior to delivery of the quantity, stating that the quantity will be sold or used only for approved critical uses in accordance with definitions and prohibitions in this subpart.
 - (ii) Every third party applicator of methyl bromide who receives a certification from an entity to which they sell critical use methyl bromide must maintain the certifications as records for 3 years.
 - (iii) Every third party applicator of a quantity of critical use methyl bromide must maintain invoice and order records related to the sale of such material for 3 years.
- (2) Reporting—Every third party applicator of critical use methyl bromide must report to the Administrator annually, the following items:
- (i) For critical uses of class I, Group VI controlled substances, an annual list of the amount of critical use methyl bromide bought;
 - (ii) For critical uses of class I, Group VI controlled substances, an annual list of the amount of critical use methyl bromide sold for each specified critical use in Appendix L of this subpart;
 - (iii) For critical uses of class I, Group VI controlled substances, report annually the amount of critical use methyl bromide owned by the reporting entity, specifying quantities dedicated for pre-plant use and quantities dedicated for post-harvest use, as well as quantities held by the reporting entity on behalf of another entity, specifying quantities dedicated for pre-plant use and quantities dedicated for post-harvest use, along with the name of the entity on whose behalf the material is held;
 - (iv) [Reserved]

- (v) The amount of methyl bromide produced or imported prior to the January 1, 2005 phaseout date owned by the reporting entity, as well as quantities held by the reporting entity on behalf of another entity, specifying the name of the entity on whose behalf the material is held.
- (dd) Every approved critical user purchasing an amount of critical use methyl bromide or purchasing fumigation services with critical use methyl bromide must, for each request, identify the use as a critical use and certify being an approved critical user. The approved critical user certification will state, in part: "I certify, under penalty of law, I am an approved critical user and I will use this quantity of methyl bromide for an approved critical use. My action conforms to the requirements associated with the critical use exemption published in 40 CFR part 82. I am aware that any agricultural commodity within a treatment chamber, facility or field I fumigate with critical use methyl bromide cannot subsequently or concurrently be fumigated with non-critical use methyl bromide during the same control period, excepting a QPS treatment or a treatment for a different use (e.g., a different crop or commodity). I will not use this quantity of methyl bromide for a treatment chamber, facility, or field that I previously fumigated with non-critical use methyl bromide during the same control period, excepting a QPS treatment or a treatment for a different use (e.g., a different crop or commodity), unless a local township limit now prevents me from using methyl bromide alternatives or I have now become an approved critical user as a result of rulemaking." The certification will also identify the type of critical use methyl bromide purchased, the location of the treatment, the crop or commodity treated, the quantity of critical use methyl bromide purchased, and the acreage/square footage treated, and will be signed and dated by the approved critical user.
- (ee) **Process agents.** Any entity that uses a class I controlled substance as a process agent must comply, in addition to the recordkeeping and reporting requirements in § 82.25, with the following recordkeeping and reporting requirements for each facility that uses a class I controlled substance as a process agent:
 - (1) **Reporting—one-time report.** By February 7, 2025, or within 120 days of the date that an entity first uses a class I controlled substance as a process agent, whichever is later, any entity that uses a class I controlled substance as a process agent must submit to the Administrator a report containing the following information for each use of a class I controlled substance as a process agent:
 - (i) The name and address of each facility and plant, and each responsible person's name, email address, and phone number;
 - (ii) The name, purpose, and final product manufactured of each process agent application that uses a class I controlled substance;
 - (iii) The start-up date of each facility and the start-up date of each plant that uses a class I controlled substance as a process agent;
 - (iv) For each facility, the names and amounts of each product and byproduct manufactured in the process agent application during the previous control period, including amounts destroyed or used as a feedstock;
 - (v) For each facility, the total air, fugitive air, and stack point air emissions of class I controlled substances used as a process agent during the previous control period;
 - (vi) For each facility, a description of technologies currently being used and actions taken or currently under evaluation to minimize use or emissions of class I controlled substances used as process agents (including estimated emissions reductions associated with each); and

(vii) For each facility, a description that includes details of the percentages of class I controlled substances used as a process agent and:

- (A) Retained within the process agent application;
- (B) Consumed in the process agent application;
- (C) Recovered after the process agent application;
- (D) Emitted; and
- (E) Entrained in the final product.

(2) **Annual reports.** Any entity that uses a class I controlled substance as a process agent must provide by February 14 of each year an annual report for the previous control period containing the following information for each use of the class I controlled substance as a process agent:

- (i) For each facility, contact information including email address and phone number for a primary and alternate contact person;
- (ii) For each facility, the name and amount of each class I controlled substance initially introduced into the process agent application for use as a process agent, specified independently for paragraphs (ee)(2)(ii)(A) through (G) of this section by whether the class I controlled substance was:
 - (A) Obtained as virgin;
 - (B) Obtained as used;
 - (C) Produced by the entity;
 - (D) Purchased from a U.S. producer;
 - (E) Imported;
 - (F) Reclaimed by the entity from a different use; and
 - (G) Reclaimed by another entity;
- (iii) For each facility, the name and amount of each class I controlled substance used as a process agent and reused or recycled for use by the entity for continued use in the same process agent application at the same facility;
- (iv) For each facility, the name and amount of each class I controlled substance used as a process agent that was ultimately:
 - (A) Transformed;
 - (B) Reused or recycled for use in a different process agent application; or
 - (C) Destroyed by approved destruction technologies;
- (v) For each facility, the total air, fugitive air, and stack point air emissions of each class I controlled substance used as a process agent;
- (vi) For each facility, the names and amounts of each product and byproduct manufactured in the process agent application during the previous control period, including amounts destroyed or used as a feedstock;

- (vii) For each facility, a description of emission reduction actions for class I controlled substances used as a process agent taken since the last one-time or annual report, planned, or currently under evaluation; and
- (viii) For each entity, any process agent application changes anticipated to result in increases for the next annual report, as compared to the previous control period and the average of the three previous control periods, of the following magnitude must be specified in a report submitted to EPA at least 180 days prior to implementing the change:
 - (A) Greater than 20 percent of the amount of class I controlled substance initially introduced for use as a process agent; or
 - (B) At least one metric ton and 20 percent of the amount emitted during use as a process agent.
- (3) **Recordkeeping.** Every entity who uses a class I controlled substance as a process agent during a control period must maintain the following records, as applicable:
 - (i) Dated records of the quantity of each class I controlled substance initially introduced at each facility into the process application for use as a process agent;
 - (ii) Dated records of the quantity of each class I controlled substance produced at each facility for use as a process agent;
 - (iii) Records identifying the producer or importer of the class I controlled substance received at each facility for use as a process agent by the entity;
 - (iv) For each facility, copies of the invoices or receipts documenting the sale or other transfer of ownership of each class I controlled substance for use as a process agent to the entity;
 - (v) Dated records identifying the quantity of each product manufactured within each facility by using a class I controlled substance as a process agent;
 - (vi) For each facility, records of the date and the estimated quantity of any spill or release of each class I controlled substance used as a process agent that equals or exceeds 100 pounds;
 - (vii) For each facility, a description of the methodology used to measure and calculate emissions, and dated records of equipment parameters, measured data, supporting calculations, and other rationale used to validate reported emission quantities;
 - (viii) For each facility, dated records of the quantity of each class I controlled substance used as a process agent which is subsequently transformed or destroyed;
 - (ix) In the case where class I controlled substances used as a process agent were ultimately transformed by an entity other than the entity which last used the class I controlled substances as a process agent, a copy of the Internal Revenue Service Certificate showing that the purchaser or recipient of the controlled substance, in the United States or in another country that is a Party, certifies the intent to transform the controlled substance, or sell the controlled substance for transformation; and
 - (x) In the case where class I controlled substances used as a process agent were ultimately destroyed by an entity other than the entity which last used the class I controlled substances as a process agent, a copy of the destruction verification (as in paragraph (k) of this section),

showing that the purchaser or recipient of a controlled substance, in the United States or in another country that is a Party, certifies the intent to destroy the controlled substance, or sell the controlled substance for destruction.

- (4) **Request for extension.** Any entity that uses a class I controlled substance as a process agent may request an extension to comply with paragraph (ee)(1) of this section.
 - (i) This request must include the following information:
 - (A) Name of the facility submitting the request, contact information for a person at the facility, and the address of the facility;
 - (B) An explanation of the reasons that an extension is necessary and the timeline that would be practicable; and
 - (C) Supporting documentation of the circumstances.
 - (ii) The Administrator will review the request and, within five working days of receiving a complete request, provide notification of whether the request is granted and when the report is due.
- (5) **Notification that use has ceased.** Reports are no longer required for process agent use starting in the year after an entity notifies the Administrator that they have permanently ceased use of all class I controlled substances as a process agent, but the entity must continue to comply with all applicable recordkeeping requirements.

[60 FR 24986, May 10, 1995]

Editorial Note: For FEDERAL REGISTER citations affecting § 82.13, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at www.govinfo.gov.

§ 82.14 Process for electronic reporting.

- (a) Starting May 18, 2020, reports and petitions that are available to be submitted through the Central Data Exchange or another format specified by EPA, as well as any related supporting documents, must be submitted through that tool.
- (b) Entities can register and access the Central Data Exchange as follows:
 - (1) Go to EPA's Central Data Exchange website at <https://cdx.epa.gov> and follow the links for the submission of ozone-depleting substances.
 - (2) Call EPA's Central Data Exchange Help Desk at 1-888-890-1995.
 - (3) Email the EPA's Central Data Exchange Help Desk at HelpDesk@epacdx.net.

[85 FR 15296, Mar. 17, 2020, as amended at 89 FR 82432, Oct. 10, 2024]

§ 82.15 Prohibitions for class II controlled substances.

- (a) **Production.**
 - (1) Effective January 21, 2003, no person may produce class II controlled substances for which EPA has apportioned baseline production and consumption allowances, in excess of the quantity of unexpended production allowances, unexpended Article 5 allowances, unexpended export

production allowances, or conferred unexpended HCFC-141b exemption allowances held by that person for that substance under the authority of this subpart at that time in that control period, unless the substances are transformed or destroyed domestically or by a person of another Party, or unless they are produced using an exemption granted in paragraph (f) of this section. Every kilogram of excess production constitutes a separate violation of this subpart.

- (2) Effective January 21, 2003, no person may use production allowances to produce a quantity of class II controlled substance unless that person holds under the authority of this subpart at the same time consumption allowances sufficient to cover that quantity of class II controlled substances. No person may use consumption allowances to produce a quantity of class II controlled substances unless the person holds under authority of this subpart at the same time production allowances sufficient to cover that quantity of class II controlled substances.

(b) *Import.*

- (1) Effective January 21, 2003, no person may import class II controlled substances (other than transshipments, heels or used class II controlled substances) for which EPA has apportioned baseline production and consumption allowances, in excess of the quantity of unexpended consumption allowances, or conferred unexpended HCFC-141b exemption allowances held by that person under the authority of this subpart at that time in that control period, unless the substances are for use in a process resulting in their transformation or their destruction, or unless they are produced using an exemption granted in paragraph (f) of this section. Every kilogram of excess import constitutes a separate violation of this subpart.
- (2) Effective January 21, 2003, no person may import, at any time in any control period, a used class II controlled substance for which EPA has apportioned baseline production and consumption allowances, without having submitted a petition to the Administrator and received a non-objection notice in accordance with § 82.24(c)(3) and (4). A person issued a non-objection notice for the import of an individual shipment of used class II controlled substances may not transfer or confer the right to import, and may not import any more than the exact quantity (in kilograms) of the used class II controlled substance stated in the non-objection notice. Every kilogram of import of used class II controlled substance in excess of the quantity stated in the non-objection notice issued by the Administrator in accordance with § 82.24(c)(3) and (4) constitutes a separate violation of this subpart.
- (3) No person may import for purposes of destruction, at any time in any control period, a class II controlled substance for which EPA has apportioned baseline production and consumption allowances, without having submitted a certification of intent to import for destruction to the Administrator and received a non-objection notice in accordance with § 82.24(c)(6). A person issued a non-objection notice for the import of an individual shipment of class II controlled substances for destruction may not transfer or confer the right to import and may not import any more than the exact quantity (in kilograms) of the class II controlled substance stated in the non-objection notice. For imports intended to be destroyed in the United States, a person issued a non-objection notice must destroy the controlled substance within one year of the date stamped on the non-objection letter, may not transfer or confer the right to import, and may not import any more than the exact quantity (in kilograms) of the class II controlled substance stated in the non-objection notice. Every kilogram of import of class II controlled substance in excess of the quantity stated in the non-objection notice issued by the Administrator in accordance with § 82.24(c)(6) constitutes a separate violation of this subpart.

- (c) **Production with Article 5 allowances.** No person may introduce into U.S. interstate commerce any class II controlled substance produced with Article 5 allowances, except for export to an Article 5 Party as listed in Appendix E of this subpart. Every kilogram of a class II controlled substance produced with Article 5 allowances that is introduced into interstate commerce other than for export to an Article 5 Party constitutes a separate violation under this subpart. No person may export any class II controlled substance produced with Article 5 allowances to a non-Article 5 Party. Every kilogram of a class II controlled substance that was produced with Article 5 allowances that is exported to a non-Article 5 Party constitutes a separate violation under this subpart.
- (d) **Production with export production allowances.** No person may introduce into U.S. interstate commerce any class II controlled substance produced with export production allowances. Every kilogram of a class II controlled substance that was produced with export production allowances that is introduced into U.S. interstate commerce constitutes a separate violation under this subpart.
- (e) **Trade with Parties.** No person may import or export any quantity of a class II controlled substance listed in Appendix A to this subpart, from or to any foreign state that is not either:
 - (1) A Party to the Beijing Amendment. As of March 14, 2014, the following foreign states had not ratified the Beijing Amendment: Kazakhstan, Libya, and Mauritania. For updates on ratification status, see the Ozone Secretariat's Web site at: http://ozone.unep.org/new_site/en/treaty_ratification_status.php. Or,
 - (2) A foreign state not party to the Beijing Amendment that is complying with the Beijing Amendment as defined in this subpart.
- (f) **Exemptions.**
 - (1) Medical Devices [Reserved]
- (g) **Introduction into interstate commerce or use.**
 - (1) Effective January 1, 2010, no person may introduce into interstate commerce or use HCFC-141b (unless used, recovered, and recycled) for any purpose except for use in a process resulting in its transformation or its destruction; for export to Article 5 Parties under § 82.18(a); for HCFC-141b exemption needs; as a transshipment or heel; or for exemptions permitted in paragraph (f) of this section.
 - (2)
 - (i) Effective January 1, 2010, no person may introduce into interstate commerce or use HCFC-22 or HCFC-142b (unless used, recovered, and recycled) for any purpose other than for use in a process resulting in its transformation or its destruction; for use as a refrigerant in equipment manufactured before January 1, 2010; for export to Article 5 Parties under § 82.18(a); as a transshipment or heel; or for exemptions permitted in paragraph (f) of this section.
 - (ii) Introduction into interstate commerce and use of HCFC-22 is not subject to the prohibitions in paragraph (g)(2)(i) of this section if the HCFC-22 is for use in medical equipment prior to January 1, 2015; for use in thermostatic expansion valves prior to January 1, 2015; or for use as a refrigerant in appliances manufactured before January 1, 2012, provided that the components are manufactured prior to January 1, 2010, and are specified in a building permit or a contract dated before January 1, 2010, for use on a particular project.

(3) Effective January 1, 2015, no person may introduce into interstate commerce or use HCFC-141b (unless used, recovered, and recycled) for any purpose other than for use in a process resulting in its transformation or its destruction; for export to Article 5 Parties under § 82.18(a), as a transshipment or heel; or for exemptions permitted in paragraph (f) of this section.

(4)

(i) Effective January 1, 2015, no person may introduce into interstate commerce or use any class II controlled substance not governed by paragraphs (g)(1) through (3) of this section (unless used, recovered and recycled) for any purpose other than for use in a process resulting in its transformation or its destruction; for use as a refrigerant in equipment manufactured before January 1, 2020; for use as a fire suppression streaming agent listed as acceptable for use or acceptable subject to narrowed use limits for nonresidential applications in accordance with the regulations at subpart G of this part; for export to Article 5 Parties under § 82.18(a); as a transshipment or heel; for exemptions permitted under paragraph (f) of this section; or for exemptions permitted under paragraph (g)(4)(ii) or (iii) of this section.

(ii) Effective January 1, 2015, use of HCFC-225ca or HCFC-225cb as a solvent (excluding use in manufacturing a product containing HCFC-225ca or HCFC-225cb) is not subject to the use prohibition in paragraph (g)(4)(i) of this section if the person using the HCFC-225ca or HCFC-225cb placed the controlled substance into inventory before January 1, 2015. This paragraph does not create an exemption to the prohibition on introduction into interstate commerce in paragraph (g)(4)(i) of this section.

(iii) Effective January 1, 2015, use of HCFC-124 as a sterilant for the manufacture and testing of biological indicators is not subject to the use prohibition in paragraph (g)(4)(i) of this section if the person using the HCFC-124 placed the controlled substance into inventory before January 1, 2015. This paragraph does not create an exemption to the prohibition on introduction into interstate commerce in paragraph (g)(4)(i) of this section.

(5)

(i) Effective January 1, 2020, no person may introduce into interstate commerce or use HCFC-123 or HCFC-124 (unless used, recovered and recycled) for any purpose other than for use in a process resulting in its transformation or its destruction; for use as a refrigerant in equipment manufactured before January 1, 2020; for use as a fire suppression streaming agent listed as acceptable for use or acceptable subject to narrowed use limits for nonresidential applications in accordance with the regulations at subpart G of this part and only to the extent permitted under paragraph (g)(5)(ii) of this section; for export to Article 5 Parties under § 82.18(a); as a transshipment or heel; or for exemptions permitted under paragraph (f) of this section.

(ii) HCFC-123 that was produced or imported on or after January 1, 2020 may be used as a fire suppression streaming agent only to service equipment manufactured before January 1, 2020. HCFC-123 that was produced or imported prior to January 1, 2020 (or used, recovered and recycled) may be used as a fire suppression streaming agent in equipment manufactured before, on, or after January 1, 2020.

(iii) Notwithstanding the prohibition on use in paragraph (g)(5)(i) of this section, the use of HCFC-123 as a refrigerant in equipment manufactured on or after January 1, 2020 but before January 1, 2021 is permitted if the conditions of this paragraph (g)(5)(iii) are met. The HCFC-123 must be in the possession of an entity that will complete the manufacture of the appliance and imported prior to January 1, 2020. The appliance components must be ready for

shipment to a construction location prior to July 24, 2019 and be specified in a building permit or a contract dated before July 24, 2019 for use on a particular project. All HCFC-123 used to service such appliances on or after January 1, 2021 must be used, recovered, or recycled.

- (6) Effective January 1, 2030, no person may introduce into interstate commerce or use any class II controlled substance (unless used, recovered, and recycled) for any purpose other than for use in a process resulting in its transformation or its destruction; for export to Article 5 Parties under § 82.18(a); as a transshipment or heel; or for exemptions permitted in paragraph (f) of this section.
- (7) Effective January 1, 2040, no person may introduce into interstate commerce or use any class II controlled substance (unless used, recovered, and recycled) for any purpose other than for use in a process resulting in its transformation or its destruction, as a transshipment or heel, or for exemptions permitted in paragraph (f) of this section.
- (8) No person may sell or distribute, or offer for sale or distribution, any class II substance that they know, or have reason to know, was imported in violation of this section, except for such actions needed to re-export the controlled substance. Every kilogram of a controlled substance imported in contravention of this paragraph (g)(8) that is sold or distributed, or offered for sale or distribution, constitutes a separate violation of this subpart.

[68 FR 2848, Jan. 21, 2003, as amended at 69 FR 34031, June 17, 2004; 71 FR 41171, July 20, 2006; 74 FR 66445, Dec. 15, 2009; 79 FR 16686, Mar. 26, 2014; 79 FR 64286, Oct. 28, 2014; 85 FR 15296, Mar. 17, 2020; 85 FR 15296, Mar. 17, 2020]

§ 82.16 Phaseout schedule of class II controlled substances.

(a)

- (1) **Calendar-year allowances.** In each control period as indicated in the following tables, each person is granted the specified percentage of baseline production allowances and baseline consumption allowances for the specified class II controlled substances apportioned under §§ 82.17 and 82.19:

TABLE 1 TO PARAGRAPH (a)—CALENDAR-YEAR HCFC PRODUCTION ALLOWANCES

Control period	Percent of HCFC-141b	Percent of HCFC-22	Percent of HCFC-142b	Percent of HCFC-123	Percent of HCFC-124	Percent of HCFC-225ca	Percent of HCFC-225cb
2003	0	100	100				
2004	0	100	100				
2005	0	100	100				
2006	0	100	100				
2007	0	100	100				
2008	0	100	100				
2009	0	100	100				
2010	0	41.9	0.47	0	125	125	125
2011	0	32	4.9	0	125	125	125
2012	0	17.7	4.9	0	125	125	125
2013	0	30.1	4.9	0	125	125	125
2014	0	26.1	4.9	0	125	125	125
2015	0	21.7	0.37	0	5	0	0
2016	0	21.7	0.32	0	5	0	0
2017	0	21.7	0.26	0	5	0	0
2018	0	21.7	0.21	0	5	0	0
2019	0	21.7	0.16	0	5	0	0
2020	0	0	0	0	5.0	0	0
2021	0	0	0	0	5.0	0	0
2022	0	0	0	0	5.0	0	0
2023	0	0	0	0	4.4	0	0
2024	0	0	0	0	3.8	0	0
2025	0	0	0	0	3.2	0	0
2026	0	0	0	0	2.5	0	0
2027	0	0	0	0	1.9	0	0
2028	0	0	0	0	1.3	0	0
2029	0	0	0	0	0.7	0	0
2030	0	0	0	0	0	0	0

TABLE 2 TO PARAGRAPH (a)—CALENDAR-YEAR HCFC CONSUMPTION ALLOWANCES

Control period	Percent of HCFC-141b	Percent of HCFC-22	Percent of HCFC-142b	Percent of HCFC-123	Percent of HCFC-124	Percent of HCFC-225ca	Percent of HCFC-225cb
2003	0	100	100				
2004	0	100	100				
2005	0	100	100				
2006	0	100	100				
2007	0	100	100				
2008	0	100	100				
2009	0	100	100				
2010	0	41.9	0.47	125	125	125	125
2011	0	32	4.9	125	125	125	125
2012	0	17.7	4.9	125	125	125	125
2013	0	18	4.9	125	125	125	125
2014	0	14.2	4.9	125	125	125	125
2015	0	7	1.7	100	8.3	0	0
2016	0	5.6	1.5	100	8.3	0	0
2017	0	4.2	1.2	100	8.3	0	0
2018	0	2.8	1	100	8.3	0	0
2019	0	1.4	0.7	100	8.3	0	0
2020	0	0	0	32.3	8.3	0	0
2021	0	0	0	32.3	8.3	0	0
2022	0	0	0	32.3	8.3	0	0
2023	0	0	0	28.4	7.3	0	0
2024	0	0	0	24.4	6.3	0	0
2025	0	0	0	20.4	5.3	0	0
2026	0	0	0	16.4	4.2	0	0
2027	0	0	0	12.5	3.2	0	0
2028	0	0	0	8.5	2.2	0	0
2029	0	0	0	4.5	1.1	0	0
2030	0	0	0	0	0	0	0

(2) **Recoupment allowances.** In the control period beginning January 1, 2013 and ending December 31, 2013, and again in the control period beginning January 1, 2014 and ending December 31, 2014, certain companies are granted HCFC consumption and production allowances in addition to the percentage of baseline listed in the table at paragraph (a)(1) of this section. The following companies will receive the amounts listed below in both 2013 and 2014: 2,374,846 kg of HCFC-22 consumption allowances and 2,305,924 kg of HCFC-22 production allowances to Arkema; 1,170 kg of HCFC-142b consumption allowances to DuPont; 29,146 kg of HCFC-142b consumption allowances and 53,549 kg of HCFC-142b production allowances to Honeywell; 578,948 kg of HCFC-22 consumption allowances to Solvay Fluorides; and 144,900 kg of HCFC-142b production allowances to Solvay Solexis.

(b) Effective January 1, 2003, no person may produce HCFC-141b except for use in a process resulting in its transformation or its destruction, for export under § 82.18(a) using unexpended Article 5 allowances, for export under § 82.18(b) using unexpended export production allowances, for HCFC-141b exemption needs using unexpended HCFC-141b exemption allowances, or for exemptions permitted in § 82.15(f). Effective January 1, 2003, no person may import HCFC-141b (other than transshipments, heels or used class II controlled substances) in excess of the quantity of unexpended HCFC-141b exemption allowances held by that person except for use in a process resulting in its transformation or its destruction, or for exemptions permitted in § 82.15(f).

(c) Effective January 1, 2010, no person may produce HCFC-22 or HCFC-142b for any purpose other than for use in a process resulting in their transformation or their destruction, for use in equipment manufactured before January 1, 2010, for export under § 82.18(a) using unexpended Article 5 allowances, or for export under § 82.18(b) using unexpended export production allowances, or for exemptions permitted in § 82.15(f). Effective January 1, 2010, no person may import HCFC-22 or HCFC-142b (other than transshipments, heels or used class II controlled substances) for any purpose other than for use in a process resulting in their transformation or their destruction, for exemptions permitted in § 82.15(f), or for use in equipment manufactured prior to January 1, 2010.

(d) Effective January 1, 2015, no person may produce class II controlled substances not previously controlled for any purpose other than for use in a process resulting in their transformation or their destruction, for use as a refrigerant in equipment manufactured before January 1, 2020, for use as a fire suppression streaming agent listed as acceptable for use or acceptable subject to narrowed use limits for nonresidential applications in accordance with the regulations at subpart G of this part, for export under § 82.18(a) using unexpended Article 5 allowances, for export under § 82.18(b) using unexpended export production allowances, or for exemptions permitted in § 82.15(f). Effective January 1, 2015, no person may import class II controlled substances not subject to the requirements of paragraph (b) or (c) of this section (other than transshipments, heels, or used class II controlled substances) for any purpose other than for use in a process resulting in their transformation or their destruction, for exemptions permitted in § 82.15(f), for use as a refrigerant in equipment manufactured prior to January 1, 2020, or for use as a fire suppression streaming agent listed as acceptable for use or acceptable subject to narrowed use limits for nonresidential applications in accordance with the regulations at subpart G of this part.

(e)

(1) Effective January 1, 2020, no person may produce HCFC-22 or HCFC-142b for any purpose other than for use in a process resulting in their transformation or their destruction, for export under § 82.18(a) using unexpended Article 5 allowances, or for exemptions permitted in § 82.15(f). Effective

January 1, 2020, no person may import HCFC-22 or HCFC-142b for any purpose other than for use in a process resulting in their transformation or their destruction or for exemptions permitted in § 82.15(f).

(2) Effective January 1, 2020, no person may produce HCFC-123 for any purpose other than for use in a process resulting in its transformation or its destruction, for use as a refrigerant in equipment manufactured before January 1, 2020, for export under § 82.18(a) using unexpended Article 5 allowances, or for exemptions permitted in § 82.15(f). Effective January 1, 2020, no person may import HCFC-123 for any purpose other than for use in a process resulting in its transformation or its destruction, for use as a refrigerant in equipment manufactured before January 1, 2020, for use as a fire suppression streaming agent in equipment manufactured before January 1, 2020 and listed as acceptable for use or acceptable subject to narrowed use limits for nonresidential applications, or for exemptions permitted in § 82.15(f).

(f) Effective January 1, 2030, no person may produce class II controlled substances, for any purpose other than for use in a process resulting in their transformation or their destruction, for export under § 82.18(a) using unexpended Article 5 allowances, or for exemptions permitted in § 82.15(f). Effective January 1, 2030, no person may import class II controlled substances for any purpose other than for use in a process resulting in their transformation or their destruction, or for exemptions permitted in § 82.15(f).

(g) Effective January 1, 2040, no person may produce class II controlled substances for any purpose other than for use in a process resulting in their transformation or their destruction, or for exemptions permitted in § 82.15(f).

(h) [Reserved]

[68 FR 2848, Jan. 21, 2003, as amended at 71 FR 41171, July 20, 2006; 74 FR 66446, Dec. 15, 2009; 76 FR 47467, Aug. 5, 2011; 78 FR 20027, Apr. 3, 2013; 79 FR 64286, Oct. 28, 2014; 85 FR 15296, Mar. 17, 2020]

§ 82.17 Apportionment of baseline production allowances for class II controlled substances.

The following persons are apportioned baseline production allowances for HCFC-22, HCFC-141b, HCFC-142b, HCFC-123, HCFC-124, HCFC-225ca, and HCFC-225cb as set forth in the following table:

Person	Controlled substance	Allowances (kg)
AGC Chemicals Americas	HCFC-225ca	266,608
	HCFC-225cb	373,952
Arkema	HCFC-22	46,692,336
	HCFC-141b	24,647,925
	HCFC-142b	484,369
DuPont	HCFC-22	42,638,049
	HCFC-124	2,269,210
Honeywell	HCFC-22	37,378,252
	HCFC-141b	28,705,200
	HCFC-142b	2,417,534

Person	Controlled substance	Allowances (kg)
MDA Manufacturing	HCFC-124	1,759,681
	HCFC-22	2,383,835
Solvay Specialty Polymers USA, LLC	HCFC-142b	6,541,764

[79 FR 64287, Oct. 28, 2014]

§ 82.18 Availability of production in addition to baseline production allowances for class II controlled substances.

(a) Article 5 allowances.

- (1) Effective January 1, 2003, a person apportioned baseline production allowances for HCFC-141b, HCFC-22, or HCFC-142b under § 82.17 is also apportioned Article 5 allowances, equal to 15 percent of their baseline production allowances, for the specified HCFC for each control period up until December 31, 2009, to be used for the production of the specified HCFC for export only to foreign states listed in Appendix E to this subpart.
- (2) Effective January 1, 2010, a person apportioned baseline production allowances under § 82.17 for HCFC-141b, HCFC-22, or HCFC-142b is also apportioned Article 5 allowances, equal to 10 percent of their baseline production allowances, for the specified HCFC for each control period up until December 31, 2019, to be used for the production of the specified HCFC for export only to foreign states listed in Appendix E to this subpart.
- (3) Effective January 1, 2015, a person apportioned baseline production allowances under § 82.17 for HCFC-123, HCFC-124, HCFC-225ca, and HCFC-225cb is also apportioned Article 5 allowances, equal to 10 percent of their baseline production allowances, for the specified HCFC for each control period up until December 31, 2019, to be used for the production of the specified HCFC for export only to foreign states listed in Appendix E to this subpart.

(b) Export Production Allowances.

- (1) Effective January 1, 2003, a person apportioned baseline production allowances for HCFC-141b under § 82.17 is also apportioned export production allowances, equal to 100 percent of their baseline production allowances, for HCFC-141b for each control period up until December 31, 2009, to be used for the production of HCFC-141b for export only, in accordance with this section.

- (2) [Reserved]

(c) International trades of production allowances, export production allowances and Article 5 allowances.

- (1) A person may increase or decrease their production allowances, export production allowances, or Article 5 allowances, for a specified control period through trades with a foreign state that is Party to the Beijing Amendment or is complying with the Beijing Amendment as defined in this subpart. The foreign state must agree either to trade to the person for the current control period some quantity of production that the foreign state is permitted under the Montreal Protocol or to receive from the

person for the current control period some quantity of production that the person is permitted under this subpart. The person must expend their consumption allowances allocated under § 82.19, or obtained under § 82.20 in order to produce with the additional production allowances.

(2) **Trade from a Party—Information requirements.**

- (i) A person requesting a trade from a Party must submit to the Administrator a signed document from the principal diplomatic representative in that nation's embassy in the U.S. stating that the appropriate authority within that nation will establish or revise production limits for the nation to equal the lowest of the following three production quantities:
 - (A) The maximum production that the nation is allowed under the Protocol minus the quantity (in kilograms) to be traded;
 - (B) The maximum production that is allowed under the nation's applicable domestic law minus the quantity (in kilograms) to be traded; or
 - (C) The average of the nation's actual national production level for the three years prior to the trade minus the production to be traded.
- (ii) A person requesting a trade from a Party must also submit to the Administrator a true copy of the document that sets forth the following:
 - (A) The identity and address of the person;
 - (B) The identity of the Party;
 - (C) The names and telephone numbers of contact persons for the person and for the Party;
 - (D) The chemical type and quantity (in kilograms) of production being traded;
 - (E) Documentation that the Party possesses the necessary quantity of unexpended production rights;
 - (F) The control period(s) to which the trade applies; and
 - (G) For increased production intended for export to the Party from whom the allowances would be received, a signed statement of intent to export to the Party.

(3) **Trade to a Party—Information requirements.** A person requesting a trade to a Party must submit a request that sets forth the following information to the Administrator:

- (i) The identity and address of the person;
- (ii) The identity of the Party;
- (iii) The names and telephone numbers of contact persons for the person and for the Party;
- (iv) The chemical type and quantity (in kilograms) of allowable production being traded; and
- (v) The control period(s) to which the trade applies.

(4) **Review of international trade request to a Party.** After receiving a trade request that meets the requirements of paragraph (c)(3) of this section, the Administrator may, at his/her discretion, consider the following factors by seeking concurrence from the Department of Commerce, the United States Trade Representative, and the Department of State, where appropriate, in deciding whether to approve such a trade:

- (i) Possible creation of domestic economic hardship;
 - (ii) Possible effects on trade;
 - (iii) Potential environmental implications; and
 - (iv) The total quantity of unexpended production allowances held by U.S. entities.
- (5) **Notice of trade.** If the request meets the requirement of paragraph (c)(2) of this section for trades from Parties and paragraphs (c)(3) and (4) of this section for trades to Parties, the Administrator will issue the person a notice. The notice will either grant or deduct production allowances or export production allowances or Article 5 allowances and specify the control period to which the trade applies. The Administrator may disapprove the trade request contingent on the consideration of factors listed in paragraph (c)(4) of this section for trades to Parties.
- (i) For trades from a Party, the Administrator will issue a notice revising the allowances held by the recipient of the trade to equal the unexpended production allowances, unexpended export production allowances, or unexpended Article 5 allowances held by the recipient of the trade under this subpart plus the quantity of allowable production traded from the Party.
 - (ii) For trades to a Party, the Administrator will issue a notice revising the production limit for the trader to equal the lesser of:
 - (A) The unexpended production allowances, unexpended export production allowances or unexpended Article 5 allowances held by the trade or minus the quantity traded; or
 - (B) The unexpended production allowances held by the trader minus the amount by which the U.S. average annual production of the class II controlled substance being traded for the three years prior to the trade is less than the total allowable production of that class II controlled substance under this subpart minus the amount traded; or
 - (C) The total U.S. allowable production of the class II controlled substance being traded minus the three-year average of the actual annual U.S. production of the class II controlled substance prior to the control period of the trade.
- (6) Revised notices of production limits for subsequent traders. If after one person obtains approval of a trade of allowable production of a class II controlled substance to a Party and other persons obtain approval for trades of the same class II controlled substance during the same control period, the Administrator will issue revised notices. The notices will revise the production limits for each of the other persons trading to equal the lesser of:
- (i) The unexpended production allowances, unexpended export production allowances or unexpended Article 5 allowances held by the trader under this subpart minus the quantity traded; or
 - (ii) The result of the following set of calculations:
 - (A) The total U.S. allowable production of the class II controlled substance minus the three-year average of the actual annual U.S. production of the class II controlled substance prior to the control period of the trade;
 - (B) The quantity traded divided by the total quantity traded by all the other persons trading the same class II controlled substance in the same control period;

- (C) The result of paragraph (c)(6)(ii)(A) of this section multiplied by the result of paragraph (c)(6)(ii)(B) of this section;
 - (D) The quantity derived in paragraph (c)(6)(i) of this section, minus the result of paragraph (c)(6)(ii)(C) of this section;
- (7) Production limit for previous traders. The Administrator will also issue a notice revising the production limit for each trader who previously obtained approval of a trade of the class II controlled substance to a Party in the same control period to equal the result of the following set of calculations:
- (i) The total U.S. allowable production of the class II controlled substance minus the three-year average of the actual annual U.S. production of the class II controlled substance prior to the control period of the trade;
 - (ii) The quantity traded by the person divided by the quantity traded by all the persons who have traded that class II controlled substance in that control period;
 - (iii) The result of paragraph (c)(7)(i) of this section multiplied by the result of paragraph (c)(7)(ii) of this section.
 - (iv) The unexpended production allowances, unexpended export production allowances or unexpended Article 5 allowances held by the person plus the result of paragraph (c)(7)(iii) of this section;
- (8) Effective date of revised production limits. The change in production allowances, export production allowances or Article 5 allowances will be effective on the date that the notice is issued.

[68 FR 2848, Jan. 21, 2003, as amended at 74 FR 66446, Dec. 15, 2009; 79 FR 16687, Mar. 26, 2014]

§ 82.19 Apportionment of baseline consumption allowances for class II controlled substances.

The following persons are apportioned baseline consumption allowances for HCFC-22, HCFC-142b, HCFC-123, HCFC-124, HCFC-225ca, and HCFC-225cb as set forth in the following table:

Person	Controlled substance	Allowances (kg)
ABCO Refrigeration Supply	HCFC-22	279,366
AGC Chemicals Americas	HCFC-225ca	285,328
	HCFC-225cb	286,832
	HCFC-22	302,011
Altair Partners	HCFC-22	48,637,642
Arkema	HCFC-141b	25,405,570
	HCFC-142b	483,827
	HCFC-124	3,719
	HCFC-22	54,088
Carrier	HCFC-22	54,088
Continental Industrial Group	HCFC-141b	20,315

Person	Controlled substance	Allowances (kg)
Coolgas, Inc.	HCFC-141b	16,097,869
Combs Investment Property	HCFC-22	1,040,458
	HCFC-123	19,980
	HCFC-124	3,742
	HCFC-141b	994
Discount Refrigerants	HCFC-22	38,814,862
DuPont	HCFC-141b	9,049
	HCFC-142b	52,797
	HCFC-123	1,877,042
	HCFC-124	743,312
H.G. Refrigeration Supply	HCFC-22	40,068
Honeywell	HCFC-22	35,392,492
	HCFC-141b	20,749,489
	HCFC-142b	1,315,819
	HCFC-124	1,284,265
ICC Chemical Corp.	HCFC-141b	81,225
ICOR	HCFC-124	81,220
Mexichem Fluor Inc.	HCFC-22	2,546,305
Kivlan & Company	HCFC-22	2,081,018
MDA Manufacturing	HCFC-22	2,541,545
Mondy Global	HCFC-22	281,824
National Refrigerants	HCFC-22	5,528,316
	HCFC-123	72,600
	HCFC-124	50,380
Perfect Technology Center, LP	HCFC-123	9,100
Refricenter of Miami	HCFC-22	381,293
Refricentro	HCFC-22	45,979
R-Lines	HCFC-22	63,172
Saez Distributors	HCFC-22	37,936
Solvay Fluorides, LLC	HCFC-22	3,781,691
	HCFC-141b	3,940,115
Solvay Specialty Polymers USA, LLC	HCFC-142b	194,536
Tulstar Products	HCFC-141b	89,913
	HCFC-123	34,800
	HCFC-124	229,582
USA Refrigerants	HCFC-22	14,865

[79 FR 64288, Oct. 28, 2014]

§ 82.20 Availability of consumption allowances in addition to baseline consumption allowances for class II controlled substances.

- (a) A person may obtain at any time during the control period, in accordance with the provisions of this section, consumption allowances equivalent to the quantity of class II controlled substances that the person exported from the United States and its territories to a foreign state in accordance with this section, when that quantity of class II controlled substance was produced in the U.S. or imported into the United States with expended consumption allowances. Both the export of the class II controlled substance and the request for additional consumption allowances must occur during a calendar year in which consumption allowances were issued for that class II controlled substance.
- (1) The exporter must submit to the Administrator a request for consumption allowances setting forth the following:
 - (i) The identities and addresses of the exporter and the recipient of the exports;
 - (ii) The exporter's Employer Identification Number;
 - (iii) The names and telephone numbers of contact persons for the exporter and the recipient;
 - (iv) The quantity (in kilograms) and type of class II controlled substances reported;
 - (v) The source of the class II controlled substances and the date purchased;
 - (vi) The date on which, and the port from which, the class II controlled substances were exported from the U.S. or its territories;
 - (vii) The country to which the class II controlled substances were exported;
 - (viii) A copy of the bill of lading and the invoice indicating the net quantity (in kilograms) of class II controlled substances shipped and documenting the sale of the class II controlled substances to the purchaser;
 - (ix) The commodity codes of the class II controlled substances reported; and
 - (x) A written statement from the producer that the class II controlled substances were produced with expended allowances or a written statement from the importer that the class II controlled substances were imported with expended allowances.
- (2) The Administrator will review the information and documentation submitted under paragraph (a)(1) of this section and will issue a notice.
 - (i) The Administrator will determine the quantity of class II controlled substances that the documentation verifies was exported and issue consumption allowances equivalent to the quantity of class II controlled substances that were exported.
 - (A) The grant of the consumption allowances will be effective on the date the notice is issued.
 - (B) The consumption allowances will be granted to the person the exporter indicates, whether it is the producer, the importer, or the exporter.
 - (ii) The Administrator will issue a notice that the consumption allowances are not granted if the Administrator determines that the information and documentation do not satisfactorily substantiate the exporter's claims.
- (b) *International trades of consumption allowances.*

- (1) A person may increase its consumption allowances for a specified control period through trades with another Party to the Protocol as set forth in this paragraph (b). A person may only receive consumption from Poland or Norway, or both, and only if the nation agrees to trade to the person for the current control period some quantity of consumption that the nation is permitted under the Montreal Protocol.
- (2) Trade from a Party—Information requirements. A person must submit the following information to the Administrator:
 - (i) A signed document from the principal diplomatic representative in the Polish or Norwegian embassy in the U.S. stating that the appropriate authority within that nation will establish or revise consumption limits for the nation to equal the lowest of the following three consumption quantities:
 - (A) The maximum consumption that the nation is allowed under the Protocol minus the quantity (in kilograms) traded;
 - (B) The maximum consumption that is allowed under the nation's applicable domestic law minus the quantity (in kilograms) traded; or
 - (C) The average of the nation's actual consumption level for the three years prior to the trade minus the consumption traded.
 - (ii) A person requesting a consumption trade from Poland or Norway must also submit to the Administrator a true copy of the document that sets forth the following:
 - (A) The identity and address of the person;
 - (B) The identity of the Party;
 - (C) The names and telephone numbers of contact persons for the person and for the Party;
 - (D) The chemical type and quantity (in kilograms) of consumption being traded;
 - (E) Documentation that the Party possesses the necessary quantity of unexpended consumption rights;
 - (F) The control period(s) to which the trade applies; and
- (3) **Notice of trade.** If the request meets the requirement of paragraph (b)(2) of this section for trades from Parties, the Administrator will issue the person a notice. The notice will grant consumption allowances and specify the control period to which the trade applies. The Administrator may disapprove the trade request if it does not meet the requirements of paragraph (b)(2) of this section.
- (4) **Trade from a Party.** The Administrator will issue a notice revising the allowances held by the recipient of the trade to equal the unexpended consumption allowances held by the recipient of the trade under this subpart plus the quantity of allowable consumption traded from the Party.
- (5) **Effective date of revised consumption limits.** The change in consumption allowances will be effective on the date that the notice is issued.

[68 FR 2848, Jan. 21, 2003, as amended at 71 FR 41172, July 20, 2006; 79 FR 64288, Oct. 28, 2014]

§§ 82.21-82.22 [Reserved]

§ 82.23 Transfers of allowances of class II controlled substances.

- (a) **Inter-company transfers.** Effective January 1, 2003, a person ("transferor") may transfer to any other person ("transferee") any quantity of the transferor's class II consumption allowances, production allowances, export production allowances, or Article 5 allowances for the same type of allowance as follows:
- (i) The transferor must submit to the Administrator a transfer claim setting forth the following:
 - (A) The identities and addresses of the transferor and the transferee;
 - (B) The name and telephone numbers of contact persons for the transferor and the transferee;
 - (C) The type of allowances being transferred, including the names of the class II controlled substances for which allowances are to be transferred;
 - (D) The quantity (in kilograms) of allowances being transferred;
 - (E) The control period(s) for which the allowances are being transferred;
 - (F) [Reserved]
 - (G) For trades of consumption allowances, production allowances, export production allowances, or Article 5 allowances, the quantity of the 0.1 percent offset applied to the unweighted quantity traded that will be deducted from the transferor's allowance balance.
 - (ii) The Administrator will determine whether the records maintained by EPA indicate that the transferor possesses unexpended allowances sufficient to cover the transfer claim on the date the transfer claim is processed. The transfer claim is the quantity (in kilograms) to be transferred plus 0.1 percent of that quantity. The Administrator will take into account any previous transfers, any production, and allowable imports and exports of class II controlled substances reported by the transferor. Within three working days of receiving a complete transfer claim, the Administrator will take action to notify the transferor and transferee as follows:
 - (A) The Administrator will issue a notice indicating that EPA does not object to the transfer if EPA's records show that the transferor has sufficient unexpended allowances to cover the transfer claim. In the case of transfers of production or consumption allowances, EPA will reduce the transferor's balance of unexpended allowances by the quantity to be transferred plus 0.1 percent of that quantity. In the case of transfers of export production or Article 5 allowances, EPA will reduce the transferor's balance of unexpended allowances, respectively, by the quantity to be transferred plus 0.1 percent of that quantity. The transferor and the transferee may proceed with the transfer when EPA issues a no objection notice. However, if EPA ultimately finds that the transferor did not have sufficient unexpended allowances to cover the claim, the transferor and transferee, where applicable, will be held liable for any knowing violations of the regulations of this subpart that occur as a result of, or in conjunction with, the improper transfer.
 - (B) The Administrator will issue a notice disallowing the transfer if EPA's records show that the transferor has insufficient unexpended allowances to cover the transfer claim, or that the transferor has failed to respond to one or more Agency requests to supply information needed to make a determination. Either party may file a notice of appeal, with supporting reasons, with

the Administrator within 10 working days after receipt of notification. The Administrator may affirm or vacate the disallowance. If no appeal is taken by the tenth working day after notification, the disallowance shall be final on that day.

(iii) The transferor and transferee may proceed with the transfer if the Administrator does not respond to a transfer claim within the three working days specified in paragraph (a)(1)(ii) of this section. In the case of transfers of production or consumption allowances, EPA will reduce the transferor's balance of unexpended allowances by the quantity to be transferred plus 0.1 percent of that quantity. In the case of transfers of export production allowances or Article 5 allowances, EPA will reduce the transferor's balance of unexpended allowances by the quantity to be transferred plus 0.1 percent of that quantity. If EPA ultimately finds that the transferor did not have sufficient unexpended allowances to cover the claim, the transferor and/or the transferee, where applicable, will be held liable for any knowing violations of the regulations of this subpart that occur as a result of, or in conjunction with, the improper transfer.

(b) **Inter-pollutant transfers.** (1) Effective January 1, 2003, a person (transferor) may convert consumption allowances, production allowances or Article 5 allowances for one class II controlled substance to the same type of allowance for another class II controlled substance listed in appendix B of this subpart, following the procedures described in paragraph (b)(3) of this section.

(i) A person (transferor) may only convert allowances for one class II controlled substance for which EPA has issued allowances under § 82.16 to another class II controlled substance for which EPA has issued allowances under § 82.16.

(ii) [Reserved]

(2) Inter-pollutant transfers will be permitted at any time during the control period and during the 30 days after the end of a control period.

(3) The transferor must submit to the Administrator a transfer claim that includes the following:

(i) The identity and address of the transferor;

(ii) The name and telephone number of a contact person for the transferor;

(iii) The type of allowances being converted, including the names of the class II controlled substances for which allowances are to be converted;

(iv) The quantity (in kilograms) and type of allowances to be converted;

(v) The quantity (in kilograms) of allowances to be subtracted from the transferor's unexpended allowances for the first class II controlled substance, to be equal to 100.1 percent of the quantity of allowances converted;

(vi) The quantity (in kilograms) of allowances to be added to the transferee's unexpended allowances for the second class II controlled substance, to be equal to the quantity (in kilograms) of allowances for the first class II controlled substance being converted multiplied by the quotient of the ozone depletion potential of the first class II controlled substance divided by the ozone depletion potential of the second class II controlled substance, as listed in Appendix B to this subpart;

(vii) The control period(s) for which the allowances are being converted; and

- (viii) The quantity (in kilograms) of unexpended allowances of the type and for the control period being converted that the transferor holds under authority of this subpart as of the date the claim is submitted to EPA.

(4) The Administrator will determine whether the records maintained by EPA indicate that the convertor possesses unexpended allowances sufficient to cover the transfer claim on the date the transfer claim is processed (*i.e.*, the quantity (in kilograms) to be converted plus 0.1 percent of that quantity (in kilograms)). EPA will take into account any previous transfers, and any production, imports (not including transshipments or used class II controlled substances), or exports (not including transshipments or used class II controlled substances) of class II controlled substances reported by the convertor. Within three working days of receiving a complete transfer claim, the Administrator will take action to notify the convertor as follows:

- (i) The Administrator will issue a notice indicating that EPA does not object to the transfer if EPA's records show that the convertor has sufficient unexpended allowances to cover the transfer claim. EPA will reduce the transferor's balance of unexpended allowances by the quantity to be converted plus 0.1 percent of that quantity (in kilograms). When EPA issues a no objection notice, the transferor may proceed with the transfer. However, if EPA ultimately finds that the transferor did not have sufficient unexpended allowances to cover the claim, the transferor will be held liable for any violations of the regulations of this subpart that occur as a result of, or in conjunction with, the improper transfer.
- (ii) The Administrator will issue a notice disallowing the transfer if EPA's records show that the transferor has insufficient unexpended allowances to cover the transfer claim, or that the transferor has failed to respond to one or more Agency requests to supply information needed to make a determination. The transferor may file a notice of appeal, with supporting reasons, with the Administrator within 10 working days after receipt of notification. The Administrator may affirm or vacate the disallowance. If no appeal is taken by the tenth working day after notification, the disallowance shall be final on that day.
- (iii) The transferor may proceed with the transfer if the Administrator does not respond to a transfer claim within the three working days specified in paragraph (b)(4) of this section. EPA will reduce the transferor's balance of unexpended allowances by the quantity (in kilograms) to be converted plus 0.1 percent of that quantity (in kilograms). The transferor will be held liable for any violations of the regulations of this subpart that occur as a result of, or in conjunction with, the improper transfer if EPA ultimately finds that the transferor did not have sufficient unexpended allowances or credits to cover the claim.
- (c) **Inter-company transfers and Inter-pollutant transfers.** If a person requests an inter-company transfer and an inter-pollutant transfer simultaneously, the quantity (in kilograms) subtracted from the transferor's unexpended production or consumption allowances for the first class II controlled substance will be equal to 100.1 percent of the quantity (in kilograms) of allowances that are being converted and transferred.
- (d) **Permanent transfers.** The procedures in paragraph (a) of this section apply to permanent inter-company transfers of baseline production allowances or baseline consumption allowances. A person receiving a permanent transfer of baseline production allowances or baseline consumption allowances (the transferee) for a specific class II controlled substance will be the person who has their baseline allowances adjusted in accordance with phaseout schedules in this subpart. No person may conduct permanent inter-pollutant transfers of baseline production allowances or baseline consumption allowances.

[68 FR 2848, Jan. 21, 2003, as amended at 78 FR 20028, Apr. 3, 2013; 85 FR 15298, Mar. 17, 2020]

§ 82.24 Recordkeeping and reporting requirements for class II controlled substances.

- (a) **Recordkeeping and reporting.** Any person who produces, imports, exports, transforms, or destroys class II controlled substances must comply with the following recordkeeping and reporting requirements:
- (1) Reports required by this section must be submitted to the Administrator within 45 days of the end of the applicable reporting period, unless otherwise specified. Starting May 18, 2020, reports that are available for submission through the Central Data Exchange or another format specified by EPA must be submitted electronically through that tool.
 - (2) Revisions of reports that are required by this section must be mailed to the Administrator within 180 days of the end of the applicable reporting period, unless otherwise specified.
 - (3) Records and copies of reports required by this section must be retained for three years.
 - (4) Quantities of class II controlled substances must be stated in terms of kilograms in reports required by this section.
 - (5) Reports and records required by this section may be used for purposes of compliance determinations. These requirements are not intended as a limitation on the use of other evidence admissible under the Federal Rules of Evidence. Failure to provide the reports, petitions and records required by this section and to certify the accuracy of the information in the reports, petitions and records required by this section, will be considered a violation of this subpart. False statements made in reports, petitions and records will be considered violations of Section 113 of the Clean Air Act and under 18 U.S.C. 1001.
- (b) **Producers.** Persons ("producers") who produce class II controlled substances during a control period must comply with the following recordkeeping and reporting requirements:
- (1) **Reporting—Producers.** For each quarter, each producer of a class II controlled substance must provide the Administrator with a report containing the following information:
 - (i) The quantity (in kilograms) of production of each class II controlled substance used in processes resulting in their transformation by the producer and the quantity (in kilograms) intended for transformation by a second party;
 - (ii) The quantity (in kilograms) of production of each class II controlled substance used in processes resulting in their destruction by the producer and the quantity (in kilograms) intended for destruction by a second party;
 - (iii) The expended allowances for each class II controlled substance;
 - (iv) [Reserved]
 - (v) The quantity (in kilograms) of class II controlled substances sold or transferred during the quarter to a person other than the producer for use in processes resulting in their transformation or eventual destruction;
 - (vi) A list of the quantities and names of class II controlled substances, exported by the producer to a Party to the Protocol, that will be transformed or destroyed and therefore were not produced expending production or consumption allowances;

- (vii) For transformation in the U.S. or by a person of another Party, one copy of a transformation verification from the transformer for a specific class II controlled substance and a list of additional quantities shipped to that same transformer for the quarter;
- (viii) For destruction in the U.S. or by a person of another Party, one copy of a destruction verification as required in paragraph (e) of this section for a particular destroyer, destroying the same class II controlled substance, and a list of additional quantities shipped to that same destroyer for the quarter; and
- (ix) [Reserved]
- (x) In cases where the producer produced class II controlled substances using Article 5 allowances, a list of U.S. entities that purchased those class II controlled substances and exported them to Article 5 countries.

(2) **Recordkeeping—Producers.** Every producer of a class II controlled substance during a control period must maintain the following records:

- (i) Dated records of the quantity (in kilograms) of each class II controlled substance produced at each facility;
- (ii) Dated records of the quantity (in kilograms) of class II controlled substances produced for use in processes that result in their transformation or for use in processes that result in their destruction;
- (iii) Dated records of the quantity (in kilograms) of class II controlled substances sold for use in processes that result in their transformation or for use in processes that result in their destruction;
- (iv) Dated records of the quantity (in kilograms) of class II controlled substances produced with Article 5 allowances;
- (v) Copies of invoices or receipts documenting sale of class II controlled substances for use in processes that result in their transformation or for use in processes that result in their destruction;
- (vi) Dated records of the quantity (in kilograms) of each class II controlled substance used at each facility as feedstocks or destroyed in the manufacture of a class II controlled substance or in the manufacture of any other substance, and any class II controlled substance introduced into the production process of the same class II controlled substance at each facility;
- (vii) Dated records of the quantity (in kilograms) of raw materials and feedstock chemicals used at each facility for the production of class II controlled substances;
- (viii) Dated records of the shipments of each class II controlled substance produced at each plant;
- (ix) The quantity (in kilograms) of class II controlled substances, the date received, and names and addresses of the source of used materials containing class II controlled substances which are recycled or reclaimed at each plant;
- (x) Records of the date, the class II controlled substance, and the estimated quantity of any spill or release of a class II controlled substance that equals or exceeds 100 pounds;

- (xi) Transformation verification in the case of transformation, or the destruction verification in the case of destruction as required in paragraph (e) of this section showing that the purchaser or recipient of a class II controlled substance, in the U.S. or in another country that is a Party, certifies the intent to either transform or destroy the class II controlled substance, or sell the class II controlled substance for transformation or destruction in cases when allowances were not expended; and
 - (xii) [Reserved]
 - (xiii) Written verifications from a U.S. purchaser that the class II controlled substance was exported to an Article 5 country in cases where Article 5 allowances were expended to produce the class II controlled substance.
- (3) For any person who fails to maintain the records required by this paragraph, or to submit the report required by this paragraph, the Administrator may assume that the person has produced at full capacity during the period for which records were not kept, for purposes of determining whether the person has violated the prohibitions at § 82.15.
- (c) **Importers.** Persons (“importers”) who import class II controlled substances during a control period must comply with the following recordkeeping and reporting requirements:
- (1) **Reporting—Importers.** For each quarter, an importer of a class II controlled substance (including importers of used class II controlled substances) must submit to the Administrator a report containing the following information:
 - (i) Summaries of the records required in paragraphs (c)(2)(i) through (xvi) of this section for the previous quarter;
 - (ii) The total quantity (in kilograms) imported of each class II controlled substance for that quarter;
 - (iii) The commodity code for the class II controlled substances imported, which must be one of those listed in Appendix K to this subpart;
 - (iv) The quantity (in kilograms) of those class II controlled substances imported that are used class II controlled substances;
 - (v) The quantity (in kilograms) of class II controlled substances imported for that quarter and totaled by chemical for the control period to date;
 - (vi) [Reserved]
 - (vii) The quantity (in kilograms) of class II controlled substances imported for use in processes resulting in their transformation or destruction;
 - (viii) The quantity (in kilograms) of class II controlled substances sold or transferred during that quarter to each person for use in processes resulting in their transformation or eventual destruction; and
 - (ix) Transformation verifications showing that the purchaser or recipient of imported class II controlled substances intends to transform those substances or destruction verifications showing that the purchaser or recipient intends to destroy the class II controlled substances (as provided in paragraph (e) of this section).
 - (2) **Recordkeeping—Importers.** An importer of a class II controlled substance (including used class II controlled substances) must maintain the following records:

- (i) The quantity (in kilograms) of each class II controlled substance imported, either alone or in mixtures, including the percentage of each mixture which consists of a class II controlled substance;
- (ii) The quantity (in kilograms) of those class II controlled substances imported that are used and the information provided with the petition where a petition is required under paragraph (c)(3) of this section;
- (iii) The quantity (in kilograms) of class II controlled substances other than transshipments or used substances imported for use in processes resulting in their transformation or destruction;
- (iv) The quantity (in kilograms) of class II controlled substances other than transshipments or used substances imported and sold for use in processes that result in their destruction or transformation;
- (v) The date on which the class II controlled substances were imported;
- (vi) The port of entry through which the class II controlled substances passed;
- (vii) The country from which the imported class II controlled substances were imported;
- (viii) The commodity code for the class II controlled substances shipped, which must be one of those listed in Appendix K to this subpart;
- (ix) The importer number for the shipment;
- (x) A copy of the bill of lading for the import;
- (xi) The invoice for the import;
- (xii) The quantity (in kilograms) of imports of used class II controlled substances;
- (xiii) The U.S. Customs entry number;
- (xiv) Dated records documenting the sale or transfer of class II controlled substances for use in processes resulting in their transformation or destruction; and
- (xv) Copies of transformation verifications or destruction verifications indicating that the class II controlled substances will be transformed or destroyed (as provided in paragraph (e) of this section).

(3) ***Petition to import used class II controlled substances and transshipment-Importers.*** For each individual shipment over 5 pounds of a used class II controlled substance as defined in § 82.3 for which EPA has apportioned baseline production and consumption allowances, an importer must submit directly to the Administrator, at least 40 working days before the shipment is to leave the foreign port of export, the following information in a petition:

- (i) The name, commodity code and quantity (in kilograms) of the used class II controlled substance to be imported;
- (ii) The name and address of the importer, the importer ID number, the contact person, email address, and phone number;
- (iii) Name, address, contact person, email address, and phone number of all previous source facilities from which the used class II controlled substance was recovered;

- (iv) A detailed description of the previous use of the class II controlled substance at each source facility and a best estimate of when the specific controlled substance was put into the equipment at each source facility, and, when possible, documents indicating the date the material was put into the equipment;
- (v) A list of the name, make and model number of the equipment from which the material was recovered at each source facility;
- (vi) Name, address, contact person, email address, and phone number of the exporter and of all persons to whom the material was transferred or sold after it was recovered from the source facility;
- (vii) The U.S. port of entry for the import, the expected date of shipment and the vessel transporting the chemical. If at the time of submitting a petition the importer does not know the U.S. port of entry, the expected date of shipment and the vessel transporting the chemical, and the importer receives a non-objection notice for the individual shipment in the petition, the importer is required to notify the Administrator of this information prior to the actual U.S. Customs entry of the individual shipment;
- (viii) A description of the intended use of the used class II controlled substance, and, when possible, the name, address, contact person, email address, and phone number of the ultimate purchaser in the United States;
- (ix) The name, address, contact person, email address, and phone number of the U.S. reclamation facility, where applicable;
- (x) If someone at the source facility recovered the class II controlled substance from the equipment, the name, email address, and phone number of that person;
- (xi) If the imported class II controlled substance was reclaimed in a foreign Party, the name, address, contact person, email address, and phone number of any or all foreign reclamation facility(ies) responsible for reclaiming the cited shipment;
- (xii) The export license, application for an export license, or official communication acknowledging the export from the appropriate government agency in the country of export and, if recovered in another country, the export license or official communication from the appropriate government agency in that country, and quantity authorized for export in kilograms on the export license, and an English translation of these documents;
- (xiii) If the imported used class II controlled substance is intended to be sold as a refrigerant in the United States, the name, address, and email address of the EPA-certified U.S. reclaiming who will bring the material to the standard required under subpart F of this part, if not already reclaimed to those specifications; and
- (xiv) A certification of accuracy of the information submitted in the petition.

- (4) ***Review of petition to import used class II controlled substances and transshipments—Importers.*** Starting on the first working day following receipt by the Administrator of a petition to import a used class II controlled substance, the Administrator will initiate a review of the information submitted under paragraph (c)(3) of this section and take action within 40 working days to issue either an objection-notice or a non-objection notice for the individual shipment to the person who submitted the petition to import the used class II controlled substance.

- (i) The Administrator may issue an objection notice to a petition for the following reasons:
 - (A) If the Administrator determines that the information is insufficient, that is, if the petition lacks or appears to lack any of the information required under paragraph (c)(3) of this section or other information that may be requested during the review of the petition necessary to verify that the controlled substance is used;
 - (B) If the Administrator determines that any portion of the petition contains false or misleading information, or the Administrator has information from other U.S. or foreign government agencies indicating that the petition contains false or misleading information;
 - (C) If the transaction appears to be contrary to provisions of the Vienna Convention on Substances that Deplete the Ozone Layer, the Montreal Protocol and Decisions by the Parties, or the non-compliance procedures outlined and instituted by the Implementation Committee of the Montreal Protocol;
 - (D) If the appropriate government agency in the exporting country has not agreed to issue an export license for the cited individual shipment of used class II controlled substance;
 - (E) If reclamation capacity is installed or is being installed for that specific class II controlled substance in the country of recovery or country of export and the capacity is funded in full or in part through the Multilateral Fund.
- (ii) Within ten (10) working days after receipt of the objection notice, the importer may re-petition the Administrator, only if the Administrator indicated "insufficient information" as the basis for the objection notice. If no appeal is taken by the tenth working day after the date on the objection notice, the objection shall become final. Only one re-petition will be accepted for any original petition received by EPA.
- (iii) Any information contained in the re-petition which is inconsistent with the original petition must be identified and a description of the reason for the inconsistency must accompany the re-petition.
- (iv) In cases where the Administrator does not object to the petition based on the criteria listed in paragraph (c)(4)(i) of this section, the Administrator will issue a non-objection notice.
- (v) To pass the approved used class II controlled substances through U.S. Customs, the non-objection notice issued by EPA must accompany the shipment through U.S. Customs.
- (vi) If for some reason, following EPA's issuance of a non-objection notice, new information is brought to EPA's attention which shows that the non-objection notice was issued based on false information, then EPA has the right to:
 - (A) Revoke the non-objection notice;
 - (B) Pursue all means to ensure that the class II controlled substance is not imported into the U.S.; and
 - (C) Take appropriate enforcement actions.
- (vii) A person receiving the non-objection notice is permitted to import the individual shipment only within one year of the date stamped on the non-objection notice.
- (viii) A person receiving a non-objection notice from the Administrator for a petition to import used class II controlled substances must maintain the following records:

- (A) A copy of the petition;
 - (B) The EPA non-objection notice;
 - (C) The bill of lading for the import; and
 - (D) The U.S. Customs entry number.
- (5) Recordkeeping for transshipments—Importers. Any person who tranships a class II controlled substance must maintain records that indicate:
 - (i) That the class II controlled substance shipment originated in a foreign country;
 - (ii) That the class II controlled substance shipment is destined for another foreign country; and
 - (iii) That the class II controlled substance shipment will not enter interstate commerce within the U.S.
- (6) ***Certification of intent to import for destruction.*** For each individual shipment of a class II controlled substance imported with the intent to destroy that substance, an importer must submit electronically to the Administrator, at least 30 working days before the shipment is to leave the foreign port of export, the following information:
 - (i) Name, commodity code, and quantity in kilograms of each controlled substance to be imported;
 - (ii) Name and address of the importer, the importer ID number, and the contact person's name, email address, and phone number;
 - (iii) Name and address of any intermediary who aggregates controlled substances imported for destruction, and the contact person's name, email address, and phone number;
 - (iv) The U.S. port of entry for the import, the expected date of shipment and the vessel transporting the material. If at the time of submitting the certification of intent to import for destruction the importer does not know the U.S. port of entry, the expected date of shipment and the vessel transporting the material, and the importer receives a non-objection notice for the individual shipment in the petition, the importer is required to notify the Administrator of this information prior to the entry of the individual shipment into the United States;
 - (v) Name, address, contact person, email address, and phone number of the responsible party at the destruction facility;
 - (vi) The export license, application for an export license, or official communication acknowledging the export from the appropriate government agency in the country of export and, if recovered in another country, the export license or official communication from the appropriate government agency in that country, and quantity authorized for export in kilograms on the export license, and an English translation of these documents; and
 - (vii) A certification of accuracy of the information submitted in the certification.
- (7) ***Destruction verification.*** For each individual shipment of a class II controlled substance imported with the intent to destroy that substance, an importer must submit to the Administrator a copy of the destruction verification within 30 days after destruction of the controlled substance(s).
- (8) ***Review of certification of intent to import for destruction.***

- (i) Starting on the first working day following receipt by the Administrator of a certification of intent to import a class II controlled substance for destruction, the Administrator will initiate a review of the information submitted under paragraph (c)(6) of this section and take action within 30 working days to issue either an objection notice or a non-objection notice for the individual shipment to the person who submitted the certification of intent to import the class II controlled substance for destruction.
- (ii) The Administrator may issue an objection notice if the petition lacks or appears to lack any of the information required under paragraph (c)(6) of this section or for the reasons listed in paragraphs (c)(4)(i)(B) through (E) of this section.
- (iii) In cases where the Administrator does not object to the petition, the Administrator will issue a non-objection notice.
- (iv) To pass the approved class II controlled substances through U.S. Customs, the non-objection notice issued by EPA must accompany the shipment through U.S. Customs.
- (v) If for some reason, following EPA's issuance of a non-objection notice, new information is brought to EPA's attention which shows that the non-objection notice was issued based on false information, then EPA has the right to:
 - (A) Revoke the non-objection notice;
 - (B) Pursue all means to ensure that the class II controlled substance is not imported into the United States; and
 - (C) Take appropriate enforcement actions.
- (9) **Timing of import.** A person receiving the non-objection notice is permitted to import the individual shipment only within one year of the date stamped on the non-objection notice.
- (10) **Additional recordkeeping requirements—importers of used, recycled, or reclaimed controlled substances.** A person receiving a non-objection notice from the Administrator for a certification of intent to import class II controlled substances for destruction must maintain the following records:
 - (i) A copy of the certificate of intent to import for destruction;
 - (ii) The EPA non-objection notice;
 - (iii) A copy of the export license, export license application, or official communication from the appropriate government agency in the country of export;
 - (iv) U.S. Customs entry documents for the import that must include one of the commodity codes from appendix K to this subpart;
 - (v) The date, amount, and type of controlled substance sent for destruction, per shipment;
 - (vi) An invoice from the destruction facility verifying the shipment was received;
 - (vii) A copy of the destruction verification from the destruction facility; and
 - (viii) An English translation of the document in paragraph (c)(10)(iii) of this section.
- (11) **Recordkeeping requirements-aggregators.** A person identified in paragraph (c)(6)(iii) of this section as aggregating a controlled substance prior to destruction must:

- (i) Maintain transactional records that include the name and address of the entity from whom they received the controlled substance imported for destruction;
- (ii) Maintain transactional records that include the name and address of the entity to whom they sent the controlled substance imported for destruction;
- (iii) Maintain records that include the date and quantity of the imported controlled substance received for destruction;
- (iv) Maintain records that include the date and quantity of the imported controlled substance sent for destruction; and
- (v) If the person is the final aggregator of such a controlled substance before the material is destroyed, maintain a copy of the destruction verification.

(d) **Exporters.** Persons ("exporters") who export class II controlled substances during a control period must comply with the following reporting requirements:

- (1) **Reporting requirements—exporters.** For any exports of class II controlled substances not reported under paragraph (b)(2) of this section (reporting for producers of class II controlled substances), each exporter who exported a class II controlled substance must submit to the Administrator the following information within 30 days after the end of each quarter in which the unreported exports left the United States:
 - (i) The names and addresses of the exporter and the recipient of the exports;
 - (ii) The exporter's Employer Identification Number;
 - (iii) The type and quantity of each class II controlled substance exported, including the quantity of controlled substance that is used, reclaimed, or recycled;
 - (iv) The date on which, and the port from which, the class II controlled substances were exported from the U.S. or its territories;
 - (v) The country to which the class II controlled substances were exported;
 - (vi) The quantity (in kilograms) exported to each Article 5 country;
 - (vii) The commodity code for the class II controlled substances shipped, which must be one of those listed in Appendix K to this subpart;
 - (viii) For persons reporting transformation or destruction, the invoice or sales agreement containing language similar to the transformation verifications that the purchaser or recipient of imported class II controlled substances intends to transform those substances, or destruction verifications showing that the purchaser or recipient intends to destroy the class II controlled substances (as provided in paragraph (e) of this section).
- (2) [Reserved]
- (3) **Reporting Article 5 allowances—Exporters.** In addition to the information required in paragraph (d)(1) of this section, any exporter using Article 5 allowances must also provide the following to the Administrator:
 - (i) The Employer Identification Number of the shipper or their agent; and
 - (ii) The exporting vessel on which the class II controlled substances were shipped.

(4) **Reporting used class II controlled substances—Exporters.** Any exporter of used class II controlled substances must indicate on the bill of lading or invoice that the class II controlled substance is used, as defined in § 82.3.

(e) **Transformation and destruction.** Any person who transforms or destroys class II controlled substances must comply with the following recordkeeping and reporting requirements:

(1) **Recordkeeping—Transformation and destruction.** Any person who transforms or destroys class II controlled substances produced or imported by another person must maintain the following:

- (i) Copies of the invoices or receipts documenting the sale or transfer of the class II controlled substances to the person;
- (ii) Records identifying the producer or importer of the class II controlled substances received by the person;
- (iii) Dated records of inventories of class II controlled substances at each plant on the first day of each quarter;
- (iv) Dated records of the quantity (in kilograms) of each class II controlled substance transformed or destroyed;
- (v) In the case where class II controlled substances were purchased or transferred for transformation purposes, a copy of the person's transformation verification as provided under paragraph (e)(3) of this section.
- (vi) Dated records of the names, commercial use, and quantities (in kilograms) of the resulting chemical(s) when the class II controlled substances are transformed; and
- (vii) Dated records of shipments to purchasers of the resulting chemical(s) when the class II controlled substances are transformed.
- (viii) In the case where class II controlled substances were purchased or transferred for destruction purposes, a copy of the person's destruction verification, as provided under paragraph (e)(5) of this section.

(2) **Reporting—Transformation and destruction.** Any person who transforms or destroys class II controlled substances and who has submitted a transformation verification ((paragraph (e)(3) of this section) or a destruction verification (paragraph (e)(5) of this section) to the producer or importer of the class II controlled substances, must report the following:

- (i) The names and quantities (in kilograms) of the class II controlled substances transformed for each control period within 45 days of the end of such control period; and
- (ii) The names and quantities (in kilograms) of the class II controlled substances destroyed for each control period within 45 days of the end of such control period.

(3) **Reporting—Transformation.** Any person who purchases class II controlled substances for purposes of transformation must provide the producer or importer with a transformation verification that the class II controlled substances are to be used in processes that result in their transformation.

- (i) The transformation verification shall include the following:
 - (A) Identity and address of the person intending to transform the class II controlled substances;

- (B) The quantity (in kilograms) of class II controlled substances intended for transformation;
- (C) Identity of shipments by purchase order number(s), purchaser account number(s), by location(s), or other means of identification;
- (D) Period of time over which the person intends to transform the class II controlled substances; and
- (E) Signature of the verifying person.
- (ii) [Reserved]
- (4) **Reporting—Destruction.** Any person who destroys class II controlled substances shall provide EPA with a one-time report containing the following information:
 - (i) The destruction unit's destruction efficiency;
 - (ii) The methods used to record the volume destroyed;
 - (iii) The methods used to determine destruction efficiency;
 - (iv) The name of other relevant federal or state regulations that may apply to the destruction process;
 - (v) Any changes to the information in paragraphs (e)(4)(i), (ii), and (iii) of this section must be reflected in a revision to be submitted to EPA within 60 days of the change(s).
- (5) **Reporting—Destruction.** Any person who purchases or receives and subsequently destroys class II controlled substances that were originally produced without expending allowances shall provide the producer or importer from whom it purchased or received the class II controlled substances with a verification that the class II controlled substances will be used in processes that result in their destruction.
 - (i) The destruction verification shall include the following:
 - (A) Identity and address of the person intending to destroy class II controlled substances;
 - (B) Indication of whether those class II controlled substances will be completely destroyed, as defined in § 82.3, or less than completely destroyed, in which case the destruction efficiency at which such substances will be destroyed must be included;
 - (C) Period of time over which the person intends to destroy class II controlled substances; and
 - (D) Signature of the verifying person.
 - (ii) [Reserved]
- (f) **Heels-Recordkeeping and reporting.** Any person who brings into the U.S. a rail car, tank truck, or ISO tank containing a heel, as defined in § 82.3, of class II controlled substances, must take the following actions:
 - (1) Indicate on the bill of lading or invoice that the class II controlled substance in the container is a heel.
 - (2) Report within 30 days of the end of the control period the quantity (in kilograms) brought into the U.S. and certify:
 - (i) That the residual quantity (in kilograms) in each shipment is no more than 10 percent of the volume of the container;

(ii) That the residual quantity (in kilograms) in each shipment will either:

- (A) Remain in the container and be included in a future shipment;
- (B) Be recovered and transformed;
- (C) Be recovered and destroyed; or
- (D) Be recovered for a non-emissive use.

(3) Report on the final disposition of each shipment within 30 days of the end of the control period.

(g) **Process agents.** Any entity that uses a class II controlled substance as a process agent must comply, in addition to the recordkeeping and reporting requirements in § 82.25, with the following recordkeeping and reporting requirements for each facility that uses a class II controlled substance as a process agent:

(1) **Reporting—one-time report.** By February 7, 2025, or within 120 days of the date that an entity first uses a class II controlled substance as a process agent, whichever is later, any entity that uses a class II controlled substance as a process agent must submit to the Administrator a report containing the following information for each use of a class II controlled substance as a process agent:

- (i) The name and address of each facility and plant, and each responsible person's name, email address, and phone number;
- (ii) The name, purpose, and final product manufactured of each process agent application that uses a class II controlled substance;
- (iii) The start-up date of each facility and the start-up date of each plant that uses a class II controlled substance as a process agent;
- (iv) For each facility, the names and amounts of each product and byproduct manufactured in the process agent application during the previous control period, including amounts destroyed or used as a feedstock;
- (v) For each facility, the total air, fugitive air, and stack point air emissions of class II controlled substances used as a process agent during the previous control period;
- (vi) For each facility, a description of technologies currently being used and actions taken or currently under evaluation to minimize use or emissions of class II controlled substances used as process agents (including estimated emissions reductions associated with each); and
- (vii) For each facility, a description that includes details of the percentages of class II controlled substances used as a process agent and:
 - (A) Retained within the process agent application;
 - (B) Consumed in the process agent application;
 - (C) Recovered after the process agent application;
 - (D) Emitted; and
 - (E) Entrained in the final product.

- (2) **Annual reports.** Any entity that uses a class II controlled substance as a process agent must provide by February 14 of each year an annual report for the previous control period containing the following information for each use of the class II controlled substance as a process agent:
- (i) For each facility, contact information including email address and phone number for a primary and alternate contact person;
 - (ii) For each facility, the name and amount of each class II controlled substance initially introduced into the process agent application for use as a process agent, specified independently for paragraphs (g)(2)(ii)(A) through (G) of this section by whether the class II controlled substance was:
 - (A) Obtained as virgin;
 - (B) Obtained as used;
 - (C) Produced by the entity;
 - (D) Purchased from a U.S. producer;
 - (E) Imported;
 - (F) Reclaimed by the entity from a different use; and
 - (G) Reclaimed by another entity;
 - (iii) For each facility, the name and amount of each class II controlled substance used as a process agent and reused or recycled for use by the entity for continued use in the same process agent application at the same facility;
 - (iv) For each facility, the name and amount of each class II controlled substance used as a process agent that was ultimately:
 - (A) Transformed;
 - (B) Reused or recycled for use in a different process agent application; or
 - (C) Destroyed by approved destruction technologies;
 - (v) For each facility, the total air, fugitive air, and stack point air emissions of each class II controlled substance used as a process agent;
 - (vi) For each facility, the names and amounts of each product and byproduct manufactured in the process agent application during the previous control period, including amounts destroyed or used as a feedstock;
 - (vii) For each facility, a description of emission reduction actions for class II controlled substances used as a process agent taken since the last one-time or annual report, planned, or currently under evaluation; and
 - (viii) For each entity, any process agent application changes anticipated to result in increases for the next annual report, as compared to the previous control period and the average of the three previous control periods, of the following magnitude must be specified in a report submitted to EPA at least 180 days prior to implementing the change:
 - (A) Greater than 20 percent of the amount of class II controlled substance initially introduced for use as a process agent; or

- (B) At least one metric ton and 20 percent of the amount emitted during use as a process agent.
- (3) **Recordkeeping.** Every entity who uses a class II controlled substance as a process agent during a control period must maintain the following records, as applicable:
 - (i) Dated records of the quantity of each class II controlled substance initially introduced at each facility into the process application for use as a process agent;
 - (ii) Dated records of the quantity of each class II controlled substance produced at each facility for use as a process agent;
 - (iii) Records identifying the producer or importer of the class II controlled substance received at each facility for use as a process agent by the entity;
 - (iv) For each facility, copies of the invoices or receipts documenting the sale or other transfer of ownership of each class II controlled substance for use as a process agent to the entity;
 - (v) Dated records identifying the quantity of each product manufactured within each facility by using a class II controlled substance as a process agent;
 - (vi) For each facility, records of the date and the estimated quantity of any spill or release of each class II controlled substance used as a process agent that equals or exceeds 100 pounds;
 - (vii) For each facility, a description of the methodology used to measure and calculate emissions, and dated records of equipment parameters, measured data, supporting calculations, and other rationale used to validate reported emission quantities;
 - (viii) For each facility, dated records of the quantity of each class II controlled substance used as a process agent which is subsequently transformed or destroyed;
 - (ix) In the case where class II controlled substances used as a process agent were ultimately transformed by an entity other than the entity which last used the class II controlled substances as a process agent, a copy of the entity's transformation verification as provided under paragraph (e)(3) of this section; and
 - (x) In the case where class II controlled substances used as a process agent were ultimately destroyed by an entity other than the entity which last used the class II controlled substances as a process agent, a copy of the entity's destruction verification, as provided under paragraph (e)(5) of this section.
- (4) **Request for extension.** Any entity that uses a class II controlled substance as a process agent may request an extension to comply with paragraph (g)(1) of this section.
 - (i) This request must include the following information:
 - (A) Name of the facility submitting the request, contact information for a person at the facility, and the address of the facility;
 - (B) An explanation of the reasons that an extension is necessary and the timeline that would be practicable; and
 - (C) Supporting documentation of the circumstances.
 - (ii) The Administrator will review the request and, within five working days of receiving a complete request, provide notification of whether the request is granted and when the report is due.

- (5) **Notification that use has ceased.** Reports are no longer required for process agent use starting in the year after an entity notifies the Administrator that they have permanently ceased use of all class II controlled substances as a process agent, but the entity must continue to comply with all applicable recordkeeping requirements.

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§ 82.25 Emissions of controlled substances from industrial sources.

- (a) **Source applicability.** The requirements specified in this section apply to every entity which engages in any of the following activities:
- (1) Use of a controlled substance as a process agent.
 - (2) [Reserved]
- (b) **Emissions of controlled substances to report.** Every entity that engages in any activity listed in paragraph (a) of this section must report, for each applicable facility, emissions of the controlled substances in paragraph (b)(1) of this section from the processes listed in paragraph (b)(2) of this section.
- (1) **Emissions of controlled substances.** For purposes of reporting emissions under this section, the term “controlled substance” applies to the following controlled substances:
- (i) Each controlled substance used as a process agent.
 - (ii) [Reserved]
- (2) **Processes.** For purposes of this section, the term “process” applies to the following activities:
- (i) Each activity listed in paragraph (a) of this section;
 - (ii) Each separation process for the reuse or recycling of the controlled substance;
 - (iii) Each transformation process of the controlled substance, where the controlled substance is produced at the facility and used in processes resulting in its transformation at the same facility;
 - (iv) Each transformation process of the controlled substance at the facility, where one or more of the controlled substances transformed at the facility is produced at another facility; and
 - (v) Each destruction process of the controlled substance.
- (c) **Calculating emissions for controlled substances.** For every activity listed in paragraph (a) of this section, each entity must calculate emissions of the controlled substances from each process using the emission factor, emission calculation factor, or mass balance method specified in paragraphs (c)(1) through (4) of this section, as appropriate. The mass balance method may only be used for batch operations without on-site production or transformation of controlled substances. For destruction processes that destroy controlled substances, the entity must calculate emissions using the procedures in paragraph (c)(4) of this section.
- (1) **Emission factor and emission calculation factor methods.** To use the method in this paragraph (c)(1) for batch processes, each entity must use the methods in either paragraph (c)(1)(iii) (Emission Factor approach) or (iv) (Emission Calculation Factor approach) of this section. To use the method in this paragraph (c)(1) for continuous processes, the entity must first make a preliminary estimate

of the emissions from each individual continuous process vent under paragraph (c)(1)(i) of this section. If the entity's continuous process operates under different conditions as part of normal operations, that entity must also define the different operating scenarios and make a preliminary estimate of the emissions from the vent for each operating scenario. Then, compare the preliminary estimate for each continuous process vent (summed across operating scenarios) to the criteria in paragraph (c)(1)(ii) of this section to determine whether the process vent meets the criteria for using the emission factor method described in paragraph (c)(1)(iii) of this section or whether the process vent meets the criteria for using the emission calculation factor method described in paragraph (c)(1)(iv) of this section. For continuous process vents that meet the criteria for using the emission factor method described in paragraph (c)(1)(iii) of this section and that have more than one operating scenario, compare the preliminary estimate for each operating scenario to the criteria in paragraph (c)(1)(iii)(B) of this section to determine whether an emission factor must be developed for that operating scenario.

(i) **Preliminary estimate of emissions by process vent.** Each entity must estimate the annual emissions of the controlled substance for each process vent within each operating scenario of a continuous process using the approaches specified in paragraph (c)(1)(i)(A) or (B) of this section, accounting for any destruction as specified in paragraph (c)(1)(i)(C) of this section. The entity must determine emissions of controlled substances by process vent by using measurements, by using calculations based on chemical engineering principles and chemical property data, or by conducting an engineering assessment. The entity may use previously conducted measurements, calculations, or assessments if they represent current process operating conditions or process operating conditions that would result in higher controlled substance emissions than the current operating conditions and if they were performed in accordance with paragraph (c)(1)(i)(A), (B), or (C) of this section, as applicable. The entity must document all data, assumptions, and procedures used in the calculations or engineering assessment and keep a record of the emissions determination as required by paragraph (f)(1) of this section.

(A) **Engineering calculations.** For process vent emission calculations, each entity may use any of paragraph (c)(1)(i)(A)(1), (2), or (3) of this section.

(1) U.S. Environmental Protection Agency, Emission Inventory Improvement Program, Volume II: Chapter 16, Methods for Estimating Air Emissions from Chemical Manufacturing Facilities, August 2007, Final (incorporated by reference, see § 82.27).

(2) Each entity may determine the controlled substance emissions from any process vent within the process using the procedures specified in § 63.1257(d)(2)(i) and (d)(3)(i)(B) of this chapter, except as specified in paragraphs (c)(1)(i)(A)(2)(i) through (iv) of this section. For the purposes of this section, use of the term "HAP" in § 63.1257(d)(2)(i) and (d)(3)(i)(B) of this chapter means "controlled substance."

(i) To calculate emissions caused by the heating of a vessel without a process condenser to a temperature lower than the boiling point, each entity must use the procedures in § 63.1257(d)(2)(i)(C)(3) of this chapter.

(ii) To calculate emissions from depressurization of a vessel without a process condenser, each entity must use the procedures in § 63.1257(d)(2)(i)(D)(10) of this chapter.

- (iii) To calculate emissions from vacuum systems, the terms used in equation 33 to § 63.1257(d)(2)(i)(E) of this chapter are defined as follows. P_{system} means the absolute pressure of the receiving vessel. P^i means the partial pressure of the controlled substance determined at the exit temperature and exit pressure conditions of the condenser or at the conditions of the dedicated receiver. P_j means the partial pressure of condensables (including controlled substances) determined at the exit temperature and exit pressure conditions of the condenser or at the conditions of the dedicated receiver. $MW_{\text{controlled substance}}$ means the molecular weight of the controlled substance determined at the exit temperature and exit pressure conditions of the condenser or at the conditions of the dedicated receiver.
- (iv) To calculate emissions when a vessel is equipped with a process condenser or a control condenser, each entity must use the procedures in § 63.1257(d)(3)(i)(B) of this chapter, except as follows. Each entity must determine the flow rate of gas (or volume of gas), partial pressures of condensables, temperature (T), and controlled substance molecular weight ($MW_{\text{controlled substance}}$) at the exit temperature and exit pressure conditions of the condenser or at the conditions of the dedicated receiver. Each entity must assume that all of the components contained in the condenser exit vent stream are in equilibrium with the same components in the exit condensate stream (except for noncondensables). Each entity must perform a material balance for each component, if the condensate receiver composition is not known. For the emissions from purging, the term for time, t, must be used in equation 12 to § 63.1257(d)(2)(i)(B) of this chapter. Emissions from empty vessel purging must be calculated using equation 36 to § 63.1257(d)(2)(i)(H) of this chapter and the exit temperature and exit pressure conditions of the condenser or the conditions of the dedicated receiver.
- (3) Commercial software products that follow chemical engineering principles (e.g., including the calculation methodologies in paragraphs (c)(1)(i)(A)(1) and (2) of this section).
- (B) **Engineering assessments.** For process vent emissions determinations, each entity may conduct an engineering assessment to calculate uncontrolled emissions. An engineering assessment includes, but is not limited to, the following:
 - (1) Previous test results, provided the tests are representative of current operating practices of the process.
 - (2) Bench-scale or pilot-scale test data representative of the process operating conditions.
 - (3) Maximum flow rate, controlled substance emission rate, concentration, or other relevant parameters specified or implied within a permit limit applicable to the process vent.
 - (4) Design analysis based on chemical engineering principles, measurable process parameters, or physical or chemical laws or properties.

- (C) **Impact of destruction for the preliminary estimate.** If the process vent is vented to a destruction unit, each entity may reflect the impact of the destruction unit on emissions. In the emissions estimate, account for the following:
 - (1) The demonstrated destruction efficiencies of the device for the controlled substance in the vent stream for periods when the destruction device is in use.
 - (2) Any periods when the process vent is not vented to the destruction unit.
 - (D) **Use of typical recent values.** In the calculations in paragraphs (c)(1)(i)(A) through (C) of this section, the values used for the expected process activity and for the expected fraction of that activity, whose emissions will be vented to the properly functioning destruction unit, must be based on either typical recent values for the process or values that overestimate emissions from the process, unless there is a compelling reason to adopt a different value (e.g., installation of a destruction unit for a previously uncontrolled process). If there is such a reason, it must be documented in the monitoring plan.
- (ii) **Method selection for continuous process vents.**
- (A) Based on the calculations under paragraph (c)(1)(i) of this section, as well as any subsequent measurements and calculations under this section, rank the process vents based on controlled substance emissions, upstream of any destruction unit, summed across all operating scenarios, from largest to smallest estimated annual emissions of controlled substances. The continuous process vents that comprise the top quartile of estimated annual emissions of controlled substances must use the method in paragraph (c)(1)(iii) of this section (Emission Factor approach). The process vent emissions will be based on the past 3 years for the ranking analysis.
 - (B) The remaining continuous process vents that comprise the bottom three quartiles of estimated annual emissions of controlled substances may use either the emission factor method specified in paragraph (c)(1)(iii) of this section (Emission Factor approach) or a method specified in paragraph (c)(1)(iv) of this section (Emission Calculation Factor approach).
 - (1) Each entity must conduct emission testing for process-vent-specific emission factor development upstream of the destruction unit.
 - (2) The emission testing for process-vent-specific emission factor development may be conducted on the outlet side of a wet scrubber in place for acid gas reduction, if there is no appreciable reduction in the controlled substance by the wet scrubber.
- (iii) **Process-vent-specific emission factor method.** For each process vent, each entity must conduct an emission test according to the procedures in paragraph (d) of this section and measure the process activity, such as the feed rate, production rate, or other process activity rate, during the test as described in this paragraph (c)(1)(iii). All emissions test data and procedures used in developing emission factors must be documented according to paragraph (f) of this section. If more than one operating scenario applies to the process that contains the subject process vent, each entity must use the method in either paragraph (c)(1)(iii)(A) or (B) of this section.
- (A) Conduct a separate emissions test for operation under each operating scenario.

- (B) Conduct an emissions test for the operating scenario that is expected to have the largest emissions of controlled substances (considering both activity levels and emission calculation factors) on an annual basis. Also conduct an emissions test for each additional operating scenario for which the emission calculation factor differs by 15 percent or more from the emission calculation factor of the operating scenario that is expected to have the largest emissions (or of another operating scenario for which emission testing is performed), unless the difference between the operating scenarios is solely due to the application of a destruction unit to emissions under one of the operating scenarios. For any other operating scenarios, adjust the process-vent specific emission factor developed for the operating scenario that is expected to have the largest emissions (or for another operating scenario for which emission testing is performed) using the approach in paragraph (c)(1)(iii)(G) of this section.
- (C) Each entity must measure the process activity, such as the process feed rate, process production rate, or other process activity rate, as applicable, during the emissions test and calculate the rate for the test period, in kg (or another appropriate metric) per hour.
- (D) For continuous processes, each entity must calculate the hourly emission rate of each controlled substance using equation 1 to this paragraph (c)(1)(iii)(D) and determine the hourly emission rate of each controlled substance per process vent (and per operating scenario, as applicable) for the test run.

Equation 1 to Paragraph (c)(1)(iii)(D)

$$E_{ContPV} = \frac{C_{PV}}{10^6} * MW * Q_{PV} * \frac{1}{SV} * \frac{1}{10^3} * \frac{60}{1}$$

Where:

E_{ContPV} = Mass of controlled substance p emitted from process vent v from process i, operating scenario j, during the emission test during test run r (kg/hr).

C_{PV} = Concentration of controlled substance p during test run r of the emission test (ppmv).

MW = Molecular weight of controlled substance p (g/g-mole).

Q_{PV} = Flow rate of the process vent stream during test run r of the emission test (m³/min).

SV = Standard molar volume of gas (0.0240 m³/g-mole at 68 °F and 1 atm).

$1/10^3$ = Conversion factor (1 kilogram/1,000 grams).

$60/1$ = Conversion factor (60 minutes/1 hour).

- (E) Each entity must calculate a site-specific, process-vent-specific emission factor for each controlled substance for each process vent and each operating scenario, in kg of controlled substance per process activity rate (e.g., kg of feed or production), as

applicable, using equation 2 to this paragraph (c)(1)(iii)(E). For continuous processes, divide the hourly controlled substance emission rate during the test by the hourly process activity rate during the test runs.

Equation 2 to Paragraph (c)(1)(iii)(E)

$$EF_{PV} = \frac{\sum_1^r \left(\frac{E_{PV}}{Activity_{EmissionTest}} \right)}{r}$$

Where:

EF_{PV} = Emission factor for controlled substance p emitted from process vent v during process i, operating scenario j (e.g., kg emitted/kg activity).

E_{PV} = Mass of controlled substance p emitted from process vent v from process i, operating scenario j, during the emission test during test run r, for either continuous or batch (kg emitted/hr for continuous, kg emitted/batch for batch).

$Activity_{EmissionTest}$ = Process feed, process production, or other process activity rate for process i, operating scenario j, during the emission test during test run r (e.g., kg product/hr).

r = Number of test runs performed during the emission test.

- (F) If emissions testing is conducted upstream of the destruction unit, apply the destruction efficiencies of the device that have been demonstrated for the controlled substance in the vent stream to the controlled substance emissions for the process vent (and operating scenario, as applicable), using equation 3 to this paragraph (c)(1)(iii)(F). Each entity may apply the destruction efficiency only to the portion of the process activity during which emissions are vented to the properly functioning destruction unit (i.e., controlled).

Equation 3 to Paragraph (c)(1)(iii)(F)

$$E_{PV} = EF_{PV-U} * (Activity_U + Activity_C * (1-DE))$$

Where:

E_{PV} = Mass of controlled substance p emitted from process vent v from process i, operating scenario j, for the year, considering destruction efficiency (kg).

EF_{PV-U} = Emission factor (uncontrolled) for controlled substance p emitted from process vent v during process i, operating scenario j (kg emitted/kg product).

$Activity_U$ = Total process feed, process production, or other process activity for process i, operating scenario j, during the year for which the process vent is not vented to the properly functioning destruction unit (e.g., kg product).

Activity_C = Total process feed, process production, or other process activity for process i, operating scenario j, during the year for which the process vent is vented to the properly functioning destruction unit (e.g., kg product).

DE = Demonstrated destruction efficiency of the destruction unit (weight fraction).

(G) For process vents from processes with multiple operating scenarios, use equation 4 to this paragraph (c)(1)(iii)(G) to develop an adjusted process-vent-specific emission factor for each operating scenario whose emission calculation factor differs by less than 15 percent from the emission calculation factor of the operating scenario that is expected to have the largest emissions (or of another operating scenario for which emission testing is performed).

Equation 4 to Paragraph (c)(1)(iii)(G)

$$EF_{PVadj} = \frac{ECF_{UT}}{ECF_T} * EF_{PV}$$

Where:

EF_{PVadj} = Adjusted process-vent-specific emission factor for an untested operating scenario.

ECF_{UT} = Emission calculation factor for the untested operating scenario developed under paragraph (c)(4) of this section.

ECF_T = Emission calculation for the tested operating scenario developed under paragraph (c)(4) of this section.

EF_{PV} = Process vent specific emission factor for the tested operating scenario.

(H) Sum the emissions of each controlled substance from all process vents in each operating scenario and all operating scenarios in the process for the year to estimate the total process vent emissions of each controlled substance from the process, using equation 5 to this paragraph (c)(1)(iii)(H).

Equation 5 to Paragraph (c)(1)(iii)(H)

$$E_{Ppi} = \sum_{1}^o \sum_{1}^v E_{PV}$$

Where:

E_{Ppi} = Mass of controlled substance p emitted from process vents for process i for the year (kg).

E_{PV} = Mass of controlled substance p emitted from process vent v from process i, operating scenario j, for the year, considering destruction efficiency (kg).

v = Number of process vents in process i, operating scenario j.

o = Number of operating scenarios for process i.

- (iv) **Process-vent-specific emission calculation factor method.** For each process vent within an operating scenario, determine controlled substances emissions by calculations and determine the process activity rate, such as the feed rate, production rate, or other process activity rate, associated with the emission rate.
- (A) Each entity must calculate uncontrolled emissions of controlled substances by individual process vent, E_{PV} , by using measurements, by using calculations based on chemical engineering principles and chemical property data, or by conducting an engineering assessment. Use the procedures in paragraph (c)(1)(i)(A) or (B) of this section, except paragraph (c)(1)(i)(B)(3) of this section. The procedures in paragraphs (c)(1)(i)(A) and (B) of this section may be applied either to batch process vents or to continuous process vents. The uncontrolled emissions must be based on a typical batch or production rate under a defined operating scenario. The process activity rate associated with the uncontrolled emissions must be determined. The methods, data, and assumptions used to estimate emissions for each operating scenario must be selected to yield a best estimate (expected value) of emissions rather than an over- or underestimate of emissions for that operating scenario. All data, assumptions, and procedures used in the calculations or engineering assessment must be documented according to paragraph (f) of this section.
- (B) Each entity must calculate a site-specific, process-vent-specific emission calculation factor for each process vent each operating scenario, and each controlled substance, in kg of controlled substance per activity rate (e.g., kg of feed or production) as applicable, using equation 6 to this paragraph (c)(1)(iv)(B).

Equation 6 to Paragraph (c)(1)(iv)(B)

$$ECF_{PV} = \frac{E_{PV}}{Activity_{Representative}}$$

Where:

ECF_{PV} = Emission calculation factor for controlled substance p emitted from process vent v during process i, operating scenario j (e.g., kg emitted/kg product).

E_{PV} = Average mass of controlled substance p emitted, based on calculations, from process vent v from process i, operating scenario j, during the period or batch for which emissions were calculated, for either continuous or batch (kg emitted/hr for continuous, kg emitted/batch for batch).

Activity Representative = Process feed, process production, or other process activity rate corresponding to average mass of emissions based on calculations (e.g., kg product/hr for continuous, kg product/batch for batch).

- (C) Each entity must calculate emissions of each controlled substance for the process vent (and for each operating scenario, as applicable) for the year by multiplying the process-vent-specific emission calculation factor by the total process activity, as applicable, for the year, using equation 7 to this paragraph (c)(1)(iv)(C).

Equation 7 to Paragraph (c)(1)(iv)(C)

$$E_{PV} = ECF_{PV} * Activity$$

Where:

E_{PV} = Mass of controlled substance p emitted from process vent v from process i, operating scenario j, for the year (kg).

ECF_{PV} = Emission calculation factor for controlled substance p emitted from process vent v during process i, operating scenario j (kg emitted/activity) (e.g., kg emitted/kg product).

Activity = Process feed, process production, or other process activity for process i, operating scenario j, during the year.

- (D) If the process vent is vented to a destruction unit, apply the demonstrated destruction efficiency of the device to the controlled substance emissions for the process vent (and operating scenario, as applicable), using equation 8 to this paragraph (c)(1)(iv)(D). Apply the destruction efficiency only to the portion of the process activity that is vented to the properly functioning destruction unit (i.e., controlled).

Equation 8 to Paragraph (c)(1)(iv)(D)

$$E_{PV} = ECF_{PV} * (Activity_U + Activity_C * (1-DE))$$

Where:

E_{PV} = Mass of controlled substance p emitted from process vent v from process i, operating scenario j, for the year considering destruction efficiency (kg).

ECF_{PV} = Emission calculation factor for controlled substance p emitted from process vent v during process i, operating scenario j (e.g., kg emitted/kg product).

Activity_U = Total process feed, process production, or other process activity for process i, operating scenario j, during the year for which the process vent is not vented to the properly functioning destruction unit (e.g., kg product).

Activity_C = Total process feed, process production, or other process activity for process i, operating scenario j, during the year for which the process vent is vented to the properly functioning destruction unit (e.g., kg product).

DE = Demonstrated destruction efficiency of the destruction unit (weight fraction).

- (E) Sum the emissions of each controlled substance from all process vents in each operating scenario and all operating scenarios in the process for the year to estimate the total process vent emissions of each controlled substance from the process, using equation 9 to this paragraph (c)(1)(iv)(E).

Equation 9 to Paragraph (c)(1)(iv)(E)

$$E_{ppi} = \sum_{1}^o \sum_{1}^v E_{pV}$$

Where:

E_{ppi} = Mass of controlled substance p emitted from process vents for process i for the year (kg).

E_{pV} = Mass of controlled substance p emitted from process vent v from process i, operating scenario j, for the year, considering destruction efficiency (kg).

v = Number of process vents in process i, operating scenario j.

o = Number of operating scenarios in process i.

- (2) **Calculate emissions for equipment leaks (EL).** If activity is covered under paragraph (c)(1) of this section, each entity must calculate the emissions from pieces of equipment associated with processes covered under this section. If conducting monitoring of equipment in controlled substance service, monitoring must be conducted for those in light liquid and in gas and vapor service. If conducting monitoring of equipment in controlled substance service, the entity may exclude from monitoring each piece of equipment that is difficult-to-monitor, that is unsafe-to-monitor, that is insulated, or that is in heavy liquid service; the entity may exclude from monitoring each pump with dual mechanical seals, agitator with dual mechanical seals, pump with no external shaft, agitator with no external shaft; the entity may exclude from monitoring each pressure relief device in gas and vapor service with upstream rupture disk, each sampling connection system with closed-loop or closed-purge systems, and any pieces of equipment where leaks are routed through a closed vent system to a destruction unit. The entity must estimate emissions using another approach for those pieces of equipment excluded from monitoring. Equipment that is in controlled substance service for less than 300 hr/yr, equipment that is in vacuum service, pressure relief devices that are in light liquid service, and instrumentation systems are exempted from the requirements in this paragraph (c)(2).

- (i) The emissions from equipment leaks must be calculated using any of the procedures in paragraphs (c)(2)(i)(A), (B), (C), or (D) of this section.

- (A) ***Use of Average Emission Factor Approach in EPA protocol for equipment leak emission estimates.*** The emissions from equipment leaks may be calculated using the default Average Emission Factor Approach in EPA-453/R-95-017 (incorporated by reference, see § 82.27).
 - (B) ***Use of Other Approaches in EPA protocol for equipment leak emission estimates in conjunction with EPA Method 21.*** The emissions from equipment leaks may be calculated using one of the following methods in EPA-453/R-95-017 (incorporated by reference, see § 82.27): The Screening Ranges Approach; the EPA Correlation Approach; or the Unit-Specific Correlation Approach. If it is determined that EPA Method 21 in appendix A-7 to 40 CFR part 60 is appropriate for monitoring a controlled substance, and if the instrument is calibrated with a compound different from one or more of the controlled substances or surrogates to be measured, each entity must develop response factors for each controlled substance or for each surrogate to be measured using EPA Method 21. For each controlled substance or surrogate measured, the response factor must be less than 10. The response factor is the ratio of the known concentration of a controlled substance or surrogate to the observed meter reading when measured using an instrument calibrated with the reference compound.
 - (C) ***Use of Other Approaches in EPA protocol for equipment leak emission estimates in conjunction with site-specific leak monitoring methods.*** The emissions from equipment leaks may be calculated using one of the following methods in EPA-453/R-95-017 (incorporated by reference, see § 82.27): The Screening Ranges Approach; the EPA Correlation Approach; or the Unit-Specific Correlation Approach. Each entity may develop a site-specific leak monitoring method appropriate for monitoring controlled substances or surrogates to use along with these three approaches. The site-specific leak monitoring method must meet the requirements in paragraph (d)(5)(i) of this section.
 - (D) ***Use of site-specific leak monitoring methods.*** The emissions from equipment leaks may be calculated using a site-specific leak monitoring method. The site-specific leak monitoring method must meet the requirements in paragraph (d)(5)(i) of this section.
- (ii) Each entity must collect information on the number of each type of equipment, the service of each piece of equipment (gas, light liquid, heavy liquid), the concentration of each controlled substance in the stream, and the time period each piece of equipment was in service (e.g., hours per year). Depending on which approach followed, the entity may be required to collect information for equipment on the associated screening data concentrations for greater than or equal to 10,000 ppmv and associated screening data concentrations for less than 10,000 ppmv; associated actual screening data concentrations; or associated screening data and leak rate data (i.e., bagging) used to develop a unit-specific correlation.
 - (iii) Calculate and sum the emissions of each controlled substance in kilograms per year for equipment pieces for each process, E_{ELp} , annually. Each entity must include and estimate emissions for types of equipment that are excluded from monitoring, including difficult-to-monitor, unsafe-to-monitor and insulated pieces of equipment, pieces of equipment in heavy liquid service, pumps with dual mechanical seals, agitators with dual mechanical seals, pumps with no external shaft, agitators with no external shaft, pressure relief devices in gas and vapor service with upstream rupture disk, sampling connection systems with closed-loop or closed purge systems, and pieces of equipment where leaks are routed through a closed vent system to a destruction unit.

(3) **Calculate total controlled substance emissions for each process and for production or transformation processes at the facility.**

- (i) Estimate annually the total mass of each controlled substance emitted from each process, including emissions from process vents in paragraphs (c)(1)(iii) and (iv) of this section, as appropriate, and from equipment leaks in paragraph (c)(2) of this section, using equation 10 to this paragraph (c)(3)(i).

Equation 10 to Paragraph (c)(3)(i)

$$E_i = E_{Ppi} + E_{ELpi}$$

Where:

E_i = Total mass of each controlled substance p emitted from process i, annual basis (kg/year).

E_{Ppi} = Mass of controlled substance p emitted from all process vents and all operating scenarios in process i, annually (kg/year, calculated in equation 5 or 9 to this section, as appropriate).

E_{ELpi} = Mass of controlled substance p emitted from equipment leaks for pieces of equipment for process i, annually (kg/year, calculated in paragraph (c)(2)(iii) of this section).

- (ii) Estimate annually the total mass of each controlled substance emitted at the facility from each applicable process listed in paragraph (b)(2) of this section using equation 11 to this paragraph (c)(3)(ii). Develop separate totals for each applicable process listed in paragraph (b)(2) of this section.

Equation 11 to Paragraph (c)(3)(ii)

$$E = \sum_{i=1}^z E_i$$

Where:

E = Total mass of each controlled substance p emitted from all processes listed in paragraphs (b)(2)(i) through (iv) of this section, as appropriate (kilograms).

E_i = Total mass of each controlled substance p emitted from each process listed in paragraphs (b)(2)(i) through (iv) of this section, annual basis (kg/year, calculated in equation 10 to paragraph (c)(3)(i) of this section).

z = Total number of processes listed in paragraphs (b)(2)(i) through (iv) of this section, as appropriate.

- (4) **Mass balance method.** Before using the mass balance approach to estimate your controlled substance emissions from a process, you must ensure that the process and the equipment and methods used to measure the process meet either the error limits described in this paragraph (c)(4)

and calculated under paragraph (c)(4)(i) of this section or the requirements specified in paragraph (d)(4)(viii) of this section. If you choose to calculate the error limits, you must estimate the absolute and relative errors associated with using the mass balance approach on that process using equations 12 through 15 to this section in conjunction with equations 16 through 21 to this section. You may use the mass-balance approach to estimate emissions from the process if this calculation results in an absolute error of less than or equal to one metric ton of controlled substance per year or a relative error of less than or equal to 10 percent of the estimated controlled substance emissions. If you do not meet either of the error limits or the requirements of paragraph (d)(4)(viii) of this section, you must use the emission factor approach detailed in paragraphs (c)(1) through (3) of this section to estimate emissions from the process.

- (i) To perform the calculation, you must first calculate the absolute and relative errors associated with the quantities calculated using either equations 18 through 21 to this section or equation 28 to paragraph (c)(4)(xv) of this section. Alternatively, you may estimate these errors based on the variability of previous process measurements (e.g., the variability of measurements of stream concentrations), provided these measurements are representative of the current process and current measurement devices and techniques. Once errors have been calculated for the quantities in these equations, those errors must be used to calculate the errors in equations 16 and 17 to this section. You may omit the errors associated with equations 22 through 24 to this section.
 - (A) Where the measured quantity is a mass, the error in the mass must be equated to the accuracy or precision (whichever is larger) of the flowmeter, scale, or combination of volumetric and density measurements at the flow rate or mass measured.
 - (B) Where the measured quantity is a concentration of a stream component, the error of the concentration must be equated to the accuracy or precision (whichever is larger) with which you estimate the mean concentration of that stream component, accounting for the variability of the process, the frequency of the measurements, and the accuracy or precision (whichever is larger) of the analytical technique used to measure the concentration at the concentration measured. If the variability of process measurements is used to estimate the error, this variability shall be assumed to account both for the variability of the process and the precision of the analytical technique. Use standard statistical techniques such as the student's t distribution to estimate the error of the mean of the concentration measurements as a function of process variability and frequency of measurement.
 - (C) Equation 12 to this paragraph (c)(4)(i)(C) provides the general formula for calculating the absolute errors of sums and differences where the sum, S, is the summation of variables measured, a, b, c, etc. (e.g., $S = a + b + c$).

Equation 12 to Paragraph (c)(4)(i)(C)

$$e_{SA} = [(a * e_a)^2 + (b * e_b)^2 + (c * e_c)^2]^{1/2}$$

Where:

e_{SA} = Absolute error of the sum, expressed as one half of a 95 percent confidence interval.

e_a = Relative error of a, expressed as one half of a 95 percent confidence interval.

e_b = Relative error of b, expressed as one half of a 95 percent confidence interval.

e_c = Relative error of c, expressed as one half of a 95 percent confidence interval.

(D) Equation 13 to this paragraph (c)(4)(i)(D) provides the general formula for calculating the relative errors of sums and differences.

Equation 13 to Paragraph (c)(4)(i)(D)

$$e_{SR} = \frac{e_{SA}}{(a + b + c)}$$

Where:

e_{SR} = Relative error of the sum, expressed as one half of a 95 percent confidence interval.

e_{SA} = Absolute error of the sum, expressed as one half of a 95 percent confidence interval.

$a+b+c$ = Sum of the variables measured.

(E) Equation 14 to this paragraph (c)(4)(i)(E) provides the general formula for calculating the absolute errors of products (e.g., flow rates of controlled substances calculated as the product of the flow rate of the stream and the concentration of the controlled substance in the stream), where the product, P, is the result of multiplying the variables measured, a, b, c, etc. (e.g., $P = a*b*c$).

Equation 14 to Paragraph (c)(4)(i)(E)

$$e_{PA} = (a * b * c)(e_a^2 + e_b^2 + e_c^2)^{1/2}$$

Where:

e_{PA} = Absolute error of the product, expressed as one half of a 95 percent confidence interval.

e_a = Relative error of a, expressed as one half of a 95 percent confidence interval.

e_b = Relative error of b, expressed as one half of a 95 percent confidence interval.

e_c = Relative error of c, expressed as one half of a 95 percent confidence interval.

(F) Equation 15 to this paragraph (c)(4)(i)(F) provides the general formula for calculating the relative errors of products.

Equation 15 to Paragraph (c)(4)(i)(F)

$$e_{PR} = \frac{e_{PA}}{(a * b * c)}$$

Where:

e_{PR} = Relative error of the product, expressed as one half of a 95 percent confidence interval.

e_{PA} = Absolute error of the product, expressed as one half of a 95 percent confidence interval.

$a*b*c$ = Product of the variables measured.

- (G) Calculate the absolute error of the controlled substance emissions estimate by performing a preliminary estimate of the annual controlled substance emissions of the process using the method in paragraph (c)(4)(i)(H) of this section. Multiply this result by the relative error calculated for the mass of halogen emitted from the process in equation 15 to paragraph (c)(4)(i)(F) of this section.
- (H) To estimate the annual controlled substance emissions of the process for use in the error estimate, apply the methods set forth in paragraphs (c)(4)(ii) through (vii) and (ix) through (xvi) of this section to representative process measurements. If these process measurements represent less than one year of typical process activity, adjust the estimated emissions to account for one year of typical process activity. To estimate the terms FERd, FEP, and FEBk for use in the error estimate for equations 22, 23, and 24 to this section, you must either use emission testing, monitoring of emitted streams, and/or engineering calculations or assessments.
- (ii) The total mass of each controlled substance emitted annually from each controlled substance process must be estimated by using equation 16 to this paragraph (c)(4)(ii).

Equation 16 to Paragraph (c)(4)(ii)

$$E_{FCSf} = \sum_{t=1}^n (E_{Rp} + E_{Pp} + E_{Bp})$$

Where:

E_{Contp} = Total mass of each controlled substance p emitted annually from process i (metric tons).

$E_{Rp}-F_{Contp}$ = Total mass of controlled substance reactant p emitted from production process i over the period t (metric tons, calculated in equation 22 to paragraph (c)(4)(ix) of this section).

$E_{Pp}-F_{Contp}$ = Total mass of the controlled substance product p emitted from production process i over the period t (metric tons, calculated in equation 23 to paragraph (c)(4)(x) of this section).

$E_{BP} - F_{Contp}$ = Total mass of controlled substance byproduct p emitted from production process i over the period t (metric tons, calculated in equation 24 to paragraph (c)(4)(xi) of this section).

n = Number of concentration and flow measurement periods for the year.

- (iii) The total mass of halogen emitted from process i over the period t must be estimated at least monthly by calculating the difference between the total mass of halogen in the reactant(s) (or inputs, for processes that do not involve a chemical reaction) and the total mass of halogen in the product (or outputs, for processes that do not involve a chemical reaction), accounting for the total mass of halogen in any destroyed or recaptured streams that contain reactants, products, or byproducts (or inputs or outputs). This calculation must be performed using equation 17 to this paragraph (c)(4)(iii). An element other than a halogen may be used in the mass-balance equation, provided the element occurs in all of the controlled substances fed into or generated by the process. In this case, the mass fractions of the element in the reactants, products, and byproducts must be calculated as appropriate for that element.

Equation 17 to Paragraph (c)(4)(iii)

$$E_H = \sum_1^v (R_D * MFH_{RD}) - P * MFH_P - F_D$$

Where:

E_H = Total mass of halogen emitted from process i over the period t (metric tons).

R_d = Total mass of the halogen-containing reactant d that is fed into process i over the period t (metric tons).

P = Total mass of the halogen-containing product produced by process i over the period t (metric tons).

MFH_{Rd} = Mass fraction of halogen in reactant d, calculated in equation 25 to paragraph (c)(4)(xii) of this section.

MFH_P = Mass fraction of halogen in the product, calculated in equation 26 to paragraph (c)(4)(xiii) of this section.

F_D = Total mass of halogen in destroyed or recaptured streams from process i containing halogen-containing reactants, products, and byproducts over the period t, calculated in equation 18 to paragraph (c)(4)(iv) of this section.

v = Number of halogen-containing reactants fed into process i.

- (iv) The mass of total halogen in destroyed or recaptured streams containing halogen-containing reactants, products, and byproducts must be estimated at least monthly using equation 18 to this paragraph (c)(4)(iv) unless you use the alternative approach provided in paragraph (c)(4)(xv) of this section.

Equation 18 to Paragraph (c)(4)(iv)

$$F_D = \sum_{j=1}^q P_j * MFH_P + \sum_{k=1}^u \left[\left(\sum_{j=1}^q B_{kj} + \sum_{l=1}^x B_{kl} \right) * MFH_{Bk} \right] + \sum_{d=1}^v \left(\sum_{j=1}^q R_{dj} * MFH_{Rd} \right)$$

Where:

F_D = Total mass of halogen in destroyed or recaptured streams from process i containing halogen-containing reactants, products, and byproducts over the period t.

P_j = Mass of the halogen-containing product removed from process i in stream j and destroyed over the period t (calculated in equation 19 or 20 to this section).

B_{kj} = Mass of halogen-containing byproduct k removed from process i in stream j and destroyed over the period t (calculated in equation 19 or 20 to this section).

B_{kl} = Mass of halogen-containing byproduct k removed from process i in stream l and recaptured over the period t.

R_{dj} = Mass of halogen-containing reactant d removed from process i in stream j and destroyed over the period t (calculated in equation 19 or 20 to this section).

MFH_{Rd} = Mass fraction of halogen in reactant d, calculated in equation 25 to paragraph (c)(4)(xii) of this section.

MFH_P = Mass fraction of halogen in the product, calculated in equation 26 to paragraph (c)(4)(xiii) of this section.

MFH_{Bk} = Mass fraction of halogen in byproduct k, calculated in equation 27 to paragraph (c)(4)(xiv) of this section.

q = Number of streams destroyed in process i.

x = Number of streams recaptured in process i.

u = Number of halogen-containing byproducts generated in process i.

v = Number of halogen-containing reactants fed into process i.

(v) The mass of each controlled substance removed from process i in stream j and destroyed over the period t (i.e., P_j , B_{kj} , or R_{dj} , as applicable) must be estimated by applying the destruction efficiency of the device that has been demonstrated for the controlled substance p to controlled substance f using equation 19 to this paragraph (c)(4)(v).

Equation 19 to Paragraph (c)(4)(v)

$$MF_{\text{contpj}} = DE_{\text{Contp}} * C_{\text{contrpj}} * S_j$$

Where:

MF_{Contpj} = Mass of controlled substance p removed from process i in stream j and destroyed over the period t. (This may be P_j , B_{kj} , or R_{dj} , as applicable.)

DE_{Contp} = Destruction efficiency of the device that has been demonstrated for controlled substance p in stream j (fraction).

C_{Contpj} = Concentration (mass fraction) of controlled substance p in stream j removed from process i and fed into the destruction device over the period t. If this concentration is only a trace concentration, C_{Contrpj} is equal to zero.

S_j = Mass removed in stream j from process i and fed into the destruction device over the period t (metric tons).

(vi) The mass of each halogen-containing compound that is not a controlled substance and that is removed from process i in stream j and destroyed over the period t (i.e., $P_{>j}$, $B_{>kj}$, or $R_{>dj}$, as applicable) must be estimated using equation 20 to this paragraph (c)(4)(vi).

Equation 20 to Paragraph (c)(4)(vi)

$$M_{\text{hcgj}} = C_{\text{HCgj}} * S_j$$

Where:

M_{HCgj} = Mass of non-controlled substance halogen-containing compound g removed from process i in stream j and destroyed over the period t. (This may be P_j , B_{kj} , or R_{dj} , as applicable.)

C_{HCgj} = Concentration (mass fraction) of non-controlled substance halogen-containing compound g in stream j removed from process i and fed into the destruction device over the period t. If this concentration is only a trace concentration, C_{HCgj} is equal to zero.

S_j = Mass removed in stream j from process i and fed into the destruction device over the period t (metric tons).

(vii) The mass of halogen-containing byproduct k removed from process i in stream l and recaptured over the period t must be estimated using equation 21 to this paragraph (c)(4)(vii).

Equation 21 to Paragraph (c)(4)(vii)

$$B_{kl} = C_{Bkl} * S_l$$

Where:

B_{kl} = Mass of halogen-containing byproduct k removed from process i in stream l and recaptured over the period t (metric tons).

c_{Bkl} = Concentration (mass fraction) of halogen-containing byproduct k in stream l removed from process i and recaptured over the period t . If this concentration is only a trace concentration, c_{Bkl} is equal to zero.

S_l = Mass removed in stream l from process i and recaptured over the period t (metric tons).

- (viii) To estimate the terms FERd, FEP, and FEBk for equations 22, 23, and 24 to this section, you must account for the total mass of halogen emitted, EF, estimated in equation 17 to paragraph (c)(4)(iii) of this section. These emission characterization measurements must meet the requirements in paragraph (c)(4)(viii)(A), (B), or (C) of this section, as appropriate. The sum of the terms must equal 1. You must document the data and calculations that are used to speciate individual compounds and to estimate FERd, FEP, and FEBk. Exclude from your calculations the halogen included in FD. For example, exclude halogen-containing compounds that are not controlled substances and that result from the destruction of controlled substances by any destruction devices (e.g., the mass of HF created by combustion of a chlorofluorocarbon). However, include emissions of controlled substance that survive the destruction process.
- (A) If the calculations under paragraph (b)(1)(viii) of this section, or any subsequent measurements and calculations under this subpart, indicate that the process emits 0.1 metric tons controlled substance or more, estimate the emissions from each process vent, considering controls, using the methods in paragraph (c)(1)(i) of this section. You must characterize the emissions of any process vent that emits 0.1 metric tons controlled substance or more as specified in paragraph (d)(4)(iv) of this section.
- (B) For other vents, including vents from processes that emit less than 0.1 metric tons of controlled substance, you must characterize emissions as specified in paragraph (d)(4)(v) of this section.
- (C) For halogen emissions that are not accounted for by vent estimates, you must characterize emissions as specified in paragraph (d)(4)(vi) of this section.
- (ix) The total mass of halogen-containing reactant d emitted must be estimated at least monthly based on the total halogen emitted and the fraction that consists of halogen-containing reactants using equation 22 to this paragraph (c)(4)(ix). If the halogen-containing reactant d is not a controlled substance, you may assume that FER_d is zero.

Equation 22 to Paragraph (c)(4)(ix)

$$E_{R-it} = \frac{FER_d * E_H}{(\sum_1^v FER_d * MFH_{Rd} + FEP * MFH_P + \sum_{k=1}^u FEB_k * MFH_{Bk})}$$

Where:

E_{R-it} = Total mass of halogen-containing reactant d that is emitted from process i over the period t (metric tons).

FER_d = The fraction of the mass emitted that consists of the halogen-containing reactant d.

E_H = Total mass of halogen emissions from process i over the period t (metric tons), calculated in equation 17 to paragraph (c)(4)(iii) of this section.

FEP = The fraction of the mass emitted that consists of the halogen-containing product.

FEB_k = The fraction of the mass emitted that consists of halogen-containing byproduct k.

MFF_{Rd} = Mass fraction of halogen in reactant d, calculated in equation 25 to paragraph (c)(4)(xii) of this section.

MFH_P = Mass fraction of halogen in the product, calculated in equation 26 to paragraph (c)(4)(xiii) of this section.

MFH_{Bk} = Mass fraction of halogen in byproduct k, calculation in equation 27 to paragraph (c)(4)(xiv) of this section.

u = Number of halogen-containing byproducts generated in process i.

v = Number of halogen-containing reactants fed into process i.

- (x) The total mass of halogen-containing product emitted must be estimated at least monthly based on the total halogen emitted and the fraction that consists of halogen-containing products using equation 23 to this paragraph (c)(4)(x). If the halogen-containing product is not a controlled substance, you may assume that FEP is zero.

Equation 23 to Paragraph (c)(4)(x)

$$E_{P-it} = \frac{FEP * E_H}{(\sum_1^v FER_d * MFH_{Rd} + FEP * MFH_P + \sum_{k=1}^u FEB_k * MFH_{Bk})}$$

Where:

E_{P-it} = Total mass of halogen-containing product emitted from process i over the period t (metric tons).

FEP = The fraction of the mass emitted that consists of the halogen-containing product.

E_H = Total mass of halogen emissions from process i over the period t (metric tons), calculated in equation 17 to paragraph (c)(4)(iii) of this section.

FER_d = The fraction of the mass emitted that consists of halogen-containing reactant d.

FEB_k = The fraction of the mass emitted that consists of halogen-containing byproduct k.

MFH_{Rd} = Mass fraction of halogen in reactant d, calculated in equation 25 to paragraph (c)(4)(xii) of this section.

MFH_P = Mass fraction of halogen in the product, calculated in equation 26 to paragraph (c)(4)(xiii) of this section.

MFH_{Bk} = Mass fraction of halogen in byproduct k, calculation in equation 27 to paragraph (c)(4)(xiv) of this section.

u = Number of halogen-containing byproducts generated in process i.

v = Number of halogen-containing reactants fed into process i.

- (xi) The total mass of halogen-containing byproduct k emitted must be estimated at least monthly based on the total halogen emitted and the fraction that consists of halogen-containing byproducts using equation 24 to this paragraph (c)(4)(xi). If halogen-containing byproduct k is not a controlled substance, you may assume that FEB_k is zero.

Equation 24 to Paragraph (c)(4)(xi)

$$E_{Bk-it} = \frac{FEB_k * E_H}{(\sum_1^v FER_d * MFH_{Rd} + FEP * MFH_P + \sum_{k=1}^u FEB_k * MFH_{Bk})}$$

Where:

E_{Bk-it} = Total mass of halogen-containing byproduct k emitted from process i over the period t (metric tons).

FEB_k = The fraction of the mass emitted that consists of halogen-containing byproduct k.

FER_d = The fraction of the mass emitted that consists of halogen-containing reactant d.

FEP = The fraction of the mass emitted that consists of the halogen-containing product.

E_H = Total mass of halogen emissions from process i over the period t (metric tons), calculated in equation 17 to paragraph (c)(4)(iii) of this section.

MFH_{Rd} = Mass fraction of halogen in reactant d, calculated in equation 25 to paragraph (c)(4)(xii) of this section.

MFH_P = Mass fraction of halogen in the product, calculated in equation 26 to paragraph (c)(4)(xiii) of this section.

MFH_{Bk} = Mass fraction of halogen in byproduct k, calculation in equation 27 to paragraph (c)(4)(xiv) of this section.

u = Number of halogen-containing byproducts generated in process i.

v = Number of halogen-containing reactants fed into process i.

- (xii) The mass fraction of halogen in reactant d must be estimated using equation 25 to this paragraph (c)(4)(xii).

Equation 25 to Paragraph (c)(4)(xii)

$$MFH_{Rd} = MH_{Rd} * \frac{AW_H}{MW_{Rd}}$$

Where:

MFHRd = Mass fraction of halogen in reactant d (fraction).

MHRd = Moles halogen per mole of reactant d.

AWH = Atomic weight of halogen.

MWRd = Molecular weight of reactant d.

- (xiii) The mass fraction of halogen in the product must be estimated using equation 26 to this paragraph (c)(4)(xiii).

Equation 26 to Paragraph (c)(4)(xiii)

$$MFH_P = MH_P * \frac{AW_F}{MW_P}$$

Where:

MFHP = Mass fraction of halogen in the product (fraction).

MHP = Moles halogen per mole of product.

AW_H = Atomic weight of halogen.

MW_P = Molecular weight of the product produced.

- (xiv) The mass fraction of each applicable halogen in byproduct k must be estimated using equation 27 to this paragraph (c)(4)(xiv).

Equation 27 to Paragraph (c)(4)(xiv)

$$MFH_{Bk} = MH_{Bk} * \frac{AW_F}{MW_{Bk}}$$

Where:

MFHBk = Mass fraction of halogen in the product (fraction).

MHBk = Moles halogen per mole of byproduct k.

AWH = Atomic weight of halogen.

MWBk = Molecular weight of byproduct k.

(xv) As an alternative to using equation 18 to paragraph (c)(4)(iv) of this section as provided in paragraph (b)(4) of this section, you may estimate at least monthly the total mass of halogen in destroyed or recaptured streams containing halogen-containing compounds (including all halogen-containing reactants, products, and byproducts) using equation 28 to this paragraph (c)(4)(xv).

Equation 28 to Paragraph (c)(4)(xv)

$$F_D = \sum_{j=1}^q DE_{avgj} * c_{THj} * S_j + \sum_{l=1}^x c_{THl} * S_l$$

Where:

F_D = Total mass of halogen in destroyed or recaptured streams from process i containing halogen-containing reactants, products, and byproducts over the period t.

DE_{avgj} = Weighted average destruction efficiency of the destruction device for the halogen-containing compounds identified in destroyed stream j under paragraphs (d)(4)(iv)(B) and (d)(4)(v)(B) of this section (calculated in equation 28 to this paragraph (c)(4)(xv)) (fraction).

c_{THj} = Concentration (mass fraction) of total halogen in stream j removed from process i and fed into the destruction device over the period t. If this concentration is only a trace concentration, c_{THj} is equal to zero.

S_j = Mass removed in stream j from process i and fed into the destruction device over the period t (metric tons).

c_{THl} = Concentration (mass fraction) of total halogen in stream l removed from process i and recaptured over the period t. If this concentration is only a trace concentration, c_{Bkl} is equal to zero.

S_l = Mass removed in stream l from process i and recaptured over the period t.

q = Number of streams destroyed in process i.

x = Number of streams recaptured in process i.

- (xvi) For purposes of equation 28 to paragraph (c)(4)(xv) of this section, calculate the weighted average destruction efficiency applicable to a destroyed stream using equation 29 to this paragraph (c)(4)(xvi).

Equation 29 to Paragraph (c)(4)(xvi)

$$DE_{avgj} = \frac{\sum_{p=1}^w DE_{Contp} * c_{Contpj} * S_j * MFH_{Contp} + \sum_{g=1}^y c_{HCg} * S_j * MFH_g}{\sum_{p=1}^w c_{Contpj} * S_j * MFH_{Contp} + \sum_{g=1}^y c_{HCg} * S_j * MFH_g}$$

Where:

DE_{avgj} = Weighted average destruction efficiency of the destruction device for the halogen-containing compounds identified in destroyed stream j under paragraph (d)(4)(iv)(B) or (d)(4)(v)(B) of this section, as appropriate.

DE_{Contp} = Destruction efficiency of the device that has been demonstrated for controlled substance p in stream j (fraction).

c_{Contpj} = Concentration (mass fraction) of controlled substance p in stream j removed from process i and fed into the destruction device over the period t. If this concentration is only a trace concentration, c_{Contpj} is equal to zero.

c_{HCgj} = Concentration (mass fraction) of non-controlled substance halogen-containing compound g in stream j removed from process i and fed into the destruction device over the period t. If this concentration is only a trace concentration, c_{HCgj} is equal to zero.

S_j = Mass removed in stream j from process i and fed into the destruction device over the period t (metric tons).

MFH_{Contp} = Mass fraction of halogen in controlled substance p, calculated in equation 25, 26, or 27 to this section, as appropriate.

MFH_{HCg} = Mass fraction of halogen in non-controlled substance halogen-containing compound g, calculated in equation 25, 26, or 27 to this section, as appropriate.

w = Number of controlled substances in destroyed stream j.

y = Number of non-controlled substance halogen-containing compounds in destroyed stream j.

- (5) **Calculate controlled substance emissions from destruction of controlled substances.** Estimate annually the total mass of controlled substances emitted annually from destruction of controlled substances using equation 30 to this paragraph (c)(5):

Equation 30 to Paragraph (c)(5)

$$E_D = RE_D * (1 - DE)$$

Where:

E_D = The mass of controlled substances emitted annually from destruction of controlled substances (kilograms).

RE_D = The mass of controlled substances that are fed annually into the destruction unit (kilograms).

DE = Destruction efficiency of the destruction unit (fraction).

- (6) **Effective destruction efficiency for each process.** If using the emission factor or emission calculation factor method to calculate emissions from the process, use equation 31 to this paragraph (c)(6) to calculate the effective destruction efficiency for the process, including each process vent:

Equation 31 to Paragraph (c)(6)

$$DE_{Effective} = 1 - \frac{\sum_1^w (\sum_1^o \sum_1^v E_{PVp})}{\sum_1^w (\sum_1^o \sum_1^v ECF_{PV-Up} * (Activity_U + Activity_C)) + \sum_1^w (\sum_1^o \sum_1^v EF_{PV-Up} * (Activity_U + Activity_C))}$$

Where:

$DE_{Effective}$ = Effective destruction efficiency for process i (fraction).

E_{PVp} = Mass of controlled substance p emitted from process vent v from process i, operating scenario j, for the year, calculated in equation 3, 7, or 8 to this section (kg).

ECF_{PV-Up} = Emission calculation factor for controlled substance p emitted from process vent v during process i, operating scenario j, as used in equation 7 or 8 to this section (kg emitted/activity) (e.g., kg emitted/kg product), denoted as “ ECF_{PV} ” in those equations.

EF_{PV-Up} = Emission factor (uncontrolled) for controlled substance p emitted from process vent v during process i, operating scenario j, as used in equation 3 to paragraph (c)(1)(iii)(F) of this section (kg emitted/activity) (e.g., kg emitted/kg product), denoted as “ EF_{PV-U} ” in that equation.

$Activity_U$ = Total process feed, process production, or other process activity for process i, operating scenario j during the year, for which the process vent is not vented to the properly functioning destruction unit (i.e., uncontrolled).

$Activity_C$ = Total process feed, process production, or other process activity for process i, operating scenario j during the year, for which emissions are vented to the properly functioning destruction unit (i.e., controlled).

o = Number of operating scenarios for process i.

v = Number of process vents in process i, operating scenario j.

w = Number of controlled substances emitted from the process.

(d) **Monitoring and QA/QC requirements** –

- (1) **Initial scoping speciation to identify controlled substances from transformation processes.** Each entity that transforms controlled substances must conduct an initial scoping speciation to identify all controlled substances that may be generated or emitted from transformation processes that are subject to this section. The entity is not required to quantify emissions under this initial scoping speciation. Only controlled substance products and byproducts that occur in greater than trace concentrations in at least one stream must be identified under this paragraph (d)(1).
- (i) **Procedure.** To conduct the scoping speciation, select the stream(s) (including process streams or destroyed streams) or process vent(s) that would be expected to individually or collectively contain all of the controlled substance byproducts of the process at their maximum concentrations and sample and analyze the contents of these selected streams or process vents. For example, if controlled substance byproducts are separated into one low-boiling-point and one high-boiling-point stream, sample and analyze both of these streams. Alternatively, each entity may sample and analyze streams where controlled substance byproducts occur at less than their maximum concentrations, but the entity must ensure that the sensitivity of the analysis is sufficient to compensate for the expected difference in concentration. For example, if the entity samples and analyzes streams where controlled substance byproducts are expected to occur at one half their maximum concentrations elsewhere in the process, that entity must ensure that the sensitivity of the analysis is sufficient to detect controlled substance byproducts that occur at concentrations of 0.05 percent or higher. The entity does not have to sample and analyze every stream or process vent, *i.e.*, the entity does not have to sample and analyze a stream or process vent that contains only controlled substances that are contained in other streams or process vents that are being sampled and analyzed. Sampling and analysis must be conducted according to the procedures in paragraph (d)(5) of this section.
- (ii) **Previous measurements.** If testing of streams (including process streams or destroyed streams) or process vents were conducted less than 5 years before November 12, 2024, and the testing meets the requirements in paragraph (d)(1)(i) of this section, each entity may use the previous testing to satisfy this requirement.
- (2) **Emission factor testing.** If controlled substance emissions are determined using the site-specific process-vent-specific emission factor, each entity must meet the requirements in paragraphs (d)(2)(i) through (vii) of this section.
 - (i) **Process vent testing.** Conduct an emissions test that is based on representative performance of the process or operating scenario(s) of the process, as applicable. For process vents for which each entity performed an initial scoping speciation, include in the emission test any controlled substance that was identified in the initial scoping speciation. For process vents for which the entity did not perform an initial scoping speciation, include in the emission test any controlled substance that occurs in more than trace concentrations in the vent stream or, where a destruction unit is used, in the inlet to the destruction unit. The entity may include startup and shutdown events if the testing is sufficiently long or comprehensive to ensure that such events are not overrepresented in the emission factor. Malfunction events must not be included in the testing. If the entity does not detect a controlled substance that was identified in the scoping

speciation or that occurs in more than trace concentrations in the vent stream or in the inlet to the destruction unit, assume that controlled substance was emitted from the process vent, or from the destruction unit, at a concentration of one third of the detection limit.

- (ii) **Number of runs.** For continuous processes, sample the process vent for a minimum of three runs of 1 hour each. If the relative standard deviation (RSD) of the emission factor calculated based on the first three runs is greater than or equal to 0.15 for the emission factor, continue to sample the process vent for an additional three runs of 1 hour each.
- (iii) **Process activity measurements.** Determine the mass rate of process feed, process production, or other process activity as applicable during the test using flow meters, weigh scales, or other measurement devices or instruments with an accuracy and precision of ± 1 percent of full scale or better. These devices may be the same plant instruments or procedures that are used for accounting purposes (such as weigh hoppers, belt weigh feeders, combination of volume measurements and bulk density, etc.) if these devices or procedures meet the requirement. For monitoring ongoing process activity, use flow meters, weigh scales, or other measurement devices or instruments with an accuracy and precision of ± 1 percent of full scale or better.
- (iv) **Sample each process.** If process vents from separate processes are manifolded together to a common vent or to a common destruction unit, each entity must follow paragraph (d)(2)(iv)(A), (B), or (C) of this section.
 - (A) Each entity may sample emissions from each process in the ducts upstream from the point where the emissions are combined.
 - (B) Each entity may sample in the common duct or at the outlet of the destruction unit when only one process is operating.
 - (C) Each entity may sample the combined emissions and use engineering calculations and assessments as specified in paragraph (c)(1)(iv) of this section to allocate the emissions to each manifolded process vent, provided the sum of the calculated controlled substance emissions across the individual process vents is within 20 percent of the total controlled substance emissions measured during the manifolded testing.
- (v) **Emission test results.** The results of an emission test must include the analysis of samples, number of test runs, the results of the RSD analysis, the analytical method used, determination of emissions, the process activity, and raw data and must identify the process, the operating scenario, the process vents tested, and the controlled substances that were included in the test. The emissions test report must contain all information and data used to derive the process-vent-specific emission factor, as well as key process conditions during the test. Key process conditions include those that are normally monitored for process control purposes and may include but are not limited to yields, pressures, temperatures, etc. (e.g., of reactor vessels, distillation columns).
- (vi) **Emissions testing frequency.** Each entity must conduct emissions testing to develop the process-vent-specific emission factor under paragraph (d)(2)(vi)(A) or (B) of this section, whichever occurs first:
 - (A) **5-year revision.** Conduct an emissions test every 5 years. In the calculations under paragraph (c) of this section, apply the revised process-vent-specific emission factor to the process activity that occurs after the revision.

- (B) **Operating scenario change that affects the emission factor.** For planned operating scenario changes, each entity must estimate and compare the emission calculation factors for the changed operating scenario and for the original operating scenario whose process vent specific emission factor was measured. Use the calculation methods in paragraph (c)(1)(iv) of this section. If the emission calculation factor for the changed operating scenario is 15 percent or more different from the emission calculation factor for the previous operating scenario (this includes the cumulative change in the emission calculation factor since the most recent emissions test), the entity must conduct an emissions test to update the process-vent-specific emission factor, unless the difference between the operating scenarios is solely due to the application of a destruction unit to emissions under the changed operating scenario. Conduct the test before February 14 of the calendar year that immediately follows the change. In the calculations under paragraph (c) of this section, apply the revised process-vent-specific emission factor to the process activity that occurs after the operating scenario change.
- (vii) **Previous measurements.** If an emissions test was conducted less than 5 years before November 12, 2024, and the emissions testing meets the requirements in paragraphs (d)(2)(i) through (vii) of this section, the entity may use the previous emissions testing to develop process-vent-specific emission factors. For purposes of paragraph (d)(2)(vi)(A) of this section, the date of the previous emissions test rather than November 12, 2024, shall constitute the beginning of the 5-year re-measurement cycle.
- (3) **Emission calculation factor monitoring.** If controlled substance emissions were determined using the site-specific process-vent-specific emission calculation factor, each entity must meet the requirements in paragraphs (d)(3)(i) through (iv) of this section.
- (i) **Operating scenario.** Perform the emissions calculation for the process vent based on representative performance of the operating scenario of the process. If more than one operating scenario applies to the process that contains the subject process vent, you must conduct a separate emissions calculation for operation under each operating scenario. For each continuous process vent that contains more than trace concentrations of any controlled substance and for each batch process vent that contains more than trace concentrations of any controlled substance, develop the process-vent-specific emission calculation factor for each operating scenario. For continuous process vents, determine the emissions based on the process activity for the representative performance of the operating scenario. For batch process vents, determine emissions based on the process activity for each typical batch operating scenario.
- (ii) **Process activity measurements.** Use flow meters, weigh scales, or other measurement devices or instruments with an accuracy and precision of ± 1 percent of full scale or better for monitoring ongoing process activity.
- (iii) **Emission calculation results.** The emission calculation must be documented by identifying the process, the operating scenario, and the process vent(s). The documentation must contain the information and data used to calculate the process-vent-specific emission calculation factor.
- (iv) **Operating scenario change that affects the emission calculation factor.** For planned operating scenario changes that are expected to change the process-vent-specific emission calculation factor, each entity must conduct an emissions calculation to update the process-vent-specific

emission calculation factor. In the calculations under paragraph (c) of this section, apply the revised emission calculation factor to the process activity that occurs after the operating scenario change.

(v) **Previous calculations.** If an emissions calculation was performed for the process vent and operating scenario less than 5 years before November 12, 2024, and the emissions calculation meets the requirements in paragraphs (c)(1)(iv)(A) and (B) of this section and in paragraphs (d)(3)(i) through (iv) of this section, each entity may use the previous calculation to develop the site-specific process-vent-specific emission calculation factor.

(4) **Mass balance monitoring.** If you determine controlled substance emissions from any process using the mass balance method under paragraph (c)(4) of this section, you must estimate the total mass of each controlled substance emitted from that process at least monthly. Only streams that contain greater than trace concentrations of halogen-containing reactants, products, or byproducts must be monitored under this paragraph (d)(4).

(i) **Mass measurements.** Measure the following masses on a monthly or more frequent basis using flowmeters, weigh scales, or a combination of volumetric and density measurements with accuracies and precisions that allow the facility to meet the error criteria in paragraph (c)(4)(i) of this section:

(A) Total mass of each halogen-containing product produced. Account for any used halogen-containing product added into the production process upstream of the output measurement as directed at §§ 98.413(b) and 98.414(b) of this chapter.

(B) Total mass of each halogen-containing reactant fed into the process.

(C) The mass removed from the process in each stream fed into the destruction device.

(D) The mass removed from the process in each recaptured stream.

(ii) **Concentration measurements for use with paragraph (c)(4)(iv) of this section.** If you use paragraph (c)(4)(iv) of this section to estimate the mass of halogen in destroyed or recaptured streams, measure the following concentrations at least once each calendar month during which the process is operating, on a schedule to ensure that the measurements are representative of the full range of process conditions (e.g., catalyst age). Measure more frequently if this is necessary to meet the error criteria in paragraph (c)(4)(i) of this section. Use equipment and methods (e.g., gas chromatography) that comply with paragraph (d)(5) of this section and that have an accuracy and precision that allow the facility to meet the error criteria in paragraph (c)(4)(i) of this section. Only halogen-containing reactants, products, and byproducts that occur in a stream in greater than trace concentrations must be monitored under this paragraph (d)(4)(ii).

(A) The concentration (mass fraction) of the halogen-containing product in each stream that is fed into the destruction device.

(B) The concentration (mass fraction) of each halogen-containing byproduct in each stream that is fed into the destruction device.

(C) The concentration (mass fraction) of each halogen-containing reactant in each stream that is fed into the destruction device.

- (D) The concentration (mass fraction) of each halogen-containing byproduct in each stream that is recaptured (C_{Bkl}).
- (iii) **Concentration measurements for use with paragraph (c)(4)(xv) of this section.** If you use paragraph (c)(4)(xv) of this section to estimate the mass of halogen in destroyed or recaptured streams, measure the concentrations listed in paragraphs (d)(4)(iii)(A) and (B) of this section at least once each calendar month during which the process is operating, on a schedule to ensure that the measurements are representative of the full range of process conditions (e.g., catalyst age). Measure more frequently if this is necessary to meet the error criteria in paragraph (c)(4)(i) of this section. Use equipment and methods (e.g., gas chromatography) that comply with paragraph (d)(5) of this section and that have an accuracy and precision that allow the facility to meet the error criteria in paragraph (c)(4)(i) of this section. Only halogen-containing reactants, products, and byproducts that occur in a stream in greater than trace concentrations must be monitored under this paragraph (d)(4)(iii).
 - (A) The concentration (mass fraction) of total halogen in each stream that is fed into the destruction device.
 - (B) The concentration (mass fraction) of total halogen in each stream that is recaptured.
- (iv) **Emissions characterization: process vents emitting 0.1 metric tons or more.** To characterize emissions from any process vent emitting 0.1 metric tons of controlled substances or more, comply with paragraphs (d)(4)(iv)(A) through (E) of this section, as appropriate. Only halogen-containing reactants, products, and byproducts that occur in a stream in greater than trace concentrations must be monitored under this paragraph (d)(4)(iv).
 - (A) **Uncontrolled emissions.** If emissions from the process vent are not routed through a destruction device, sample and analyze emissions at the process vent or stack or sample and analyze emitted streams before the process vent. If the process has more than one operating scenario, you must either perform the emission characterization for each operating scenario or perform the emission characterization for the operating scenario that is expected to have the largest emissions and adjust the emission characterization for other scenarios using engineering calculations and assessments as specified in paragraph (c)(1)(iv) of this section. To perform the characterization, take three samples under conditions that are representative for the operating scenario. Measure the concentration of each halogen-containing compound in each sample. Use equipment and methods that comply with paragraph (d)(5) of this section. Calculate the average concentration of each halogen-containing compound across all three samples.
 - (B) **Controlled emissions using paragraph (c)(4)(xv) of this section.** If you use paragraph (c)(4)(xv) of this section to estimate the total mass of halogen in destroyed or recaptured streams, and if the emissions from the process vent are routed through a destruction device, characterize emissions as specified in paragraph (d)(4)(iv)(A) of this section before the destruction device. Apply the destruction efficiency demonstrated for each controlled substance in the destroyed stream to that controlled substance. Exclude from the characterization halogen-containing compounds that are not controlled substances.
 - (C) **Controlled emissions using paragraph (c)(4)(iv) of this section.** If you use paragraph (c)(4)(iv) of this section to estimate the mass of halogen in destroyed or recaptured streams, and if the emissions from the process vent are routed through a destruction device, characterize the process vent's emissions monthly (or more frequently) using the

monthly (or more frequent) measurements under paragraphs (d)(4)(i)(C) and (d)(4)(ii)(A) through (C) of this section. Apply the destruction efficiency demonstrated for each controlled substance in the destroyed stream to that controlled substance. Exclude from the characterization halogen-containing compounds that are not controlled substances.

(D) **Emissions characterization frequency.** You must repeat emission characterizations performed under paragraphs (d)(4)(iv)(A) and (B) of this section under paragraph (d)(4)(iv)(D)(1) or (2) of this section, whichever occurs first:

(1) **5-year revision.** Repeat the emission characterization every 5 years. In the calculations under paragraph (c) of this section, apply the revised emission characterization to the process activity that occurs after the revision.

(2) **Operating scenario change that affects the emission characterization.** For planned operating scenario changes, you must estimate and compare the emission calculation factors for the changed operating scenario and for the original operating scenario whose process vent specific emission factor was measured. Use the engineering calculations and assessments specified in paragraph (c)(1)(iv) of this section. If the share of total halogen-containing compound emissions represented by any controlled substance changes under the changed operating scenario by 15 percent or more of the total, relative to the previous operating scenario (this includes the cumulative change in the emission calculation factor since the last emissions test), you must repeat the emission characterization. Perform the emission characterization before February 14 of the year that immediately follows the change. In the calculations under paragraph (c) of this section, apply the revised emission characterization to the process activity that occurs after the operating scenario change.

(E) **Subsequent measurements.** If a process vent with controlled substance emissions less than 0.1 metric tons, per paragraph (c)(1)(ii) of this section, is later found to have controlled substance emissions of 0.1 metric tons or greater, you must perform an emission characterization under this paragraph (d)(4)(iv)(E) during the following year.

(v) **Emissions characterization: process vents emitting less than 0.1 metric tons.** To characterize emissions from any process vent emitting less than 0.1 metric tons, comply with paragraphs (d)(4)(v)(A) and (B) of this section, as appropriate. Only halogen-containing reactants, products, and byproducts that occur in a stream in greater than trace concentrations must be monitored under this paragraph (d)(4)(v).

(A) **Uncontrolled emissions.** If emissions from the process vent are not routed through a destruction device, emission measurements must consist of sampling and analysis of emissions at the process vent or stack, sampling and analysis of emitted streams before the process vent, previous test results, provided the tests are representative of current operating conditions of the process, or bench-scale or pilot-scale test data representative of the process operating conditions.

(B) **Controlled emissions using paragraph (c)(4)(xv) of this section.** If you use paragraph (c)(4)(xv) of this section to estimate the total mass of halogen in destroyed or recaptured streams, and if the emissions from the process vent are routed through a destruction device, characterize emissions as specified in paragraph (d)(4)(v)(A) of this section before

the destruction device. Apply the destruction efficiency demonstrated for each controlled substance in the destroyed stream to that controlled substance. Exclude from the characterization halogen-containing compounds that are not controlled substances.

- (C) **Controlled emissions using paragraph (c)(4)(iv) of this section.** If you use paragraph (c)(4)(iv) of this section to estimate the mass of halogen in destroyed or recaptured streams, and if the emissions from the process vent are routed through a destruction device, characterize the process vent's emissions monthly (or more frequently) using the monthly (or more frequent) measurements under paragraphs (d)(4)(i)(C) and (d)(4)(ii)(A) through (C) of this section. Apply the destruction efficiency demonstrated for each controlled substance in the destroyed stream to that controlled substance. Exclude from the characterization halogen-containing compounds that are not controlled substances.
- (vi) **Emissions characterization: emissions not accounted for by process vent estimates.** Calculate the weighted average emission characterization across the process vents before any destruction devices. Apply the weighted average emission characterization for all the process vents to any halogen emissions that are not accounted for by process vent estimates.
- (vii) **Impurities in reactants.** If any halogen-containing impurity is fed into a process along with a reactant (or other input) in greater than trace concentrations, this impurity shall be monitored under this section and included in the calculations under paragraph (c) of this section in the same manner as reactants fed into the process, fed into the destruction device, recaptured, or emitted, except the concentration of the impurity in the mass fed into the process shall be measured, and the mass of the impurity fed into the process shall be calculated as the product of the concentration of the impurity and the mass fed into the process. The mass of the reactant fed into the process may be reduced to account for the mass of the impurity.
- (viii) **Alternative to error calculation.** As an alternative to calculating the relative and absolute errors associated with the estimate of emissions under this paragraph (d)(4), you may comply with the precision, accuracy, and measurement and calculation frequency requirements of paragraph (d)(4)(viii)(A) through (C) of this section.
 - (A) **Mass measurements.** Measure the masses specified in paragraph (d)(4)(i) of this section using flowmeters, weigh scales, or a combination of volumetric and density measurements with accuracies and precisions of ± 0.2 percent of full scale or better.
 - (B) **Concentration measurements.** Measure the concentrations specified in paragraph (d)(4)(ii) or (iii) of this section, as applicable, using analytical methods with accuracies and precisions of ± 10 percent or better.
 - (C) **Measurement and calculation frequency.** Perform the mass measurements specified in paragraph (d)(4)(i) of this section and the concentration measurements specified in paragraph (d)(4)(ii) or (iii) of this section, as applicable, at least weekly, and calculate emissions at least weekly.
- (5) **Emission and stream testing, including analytical methods.** Select and document testing and analytical methods as follows:
 - (i) **Sampling and mass measurement for emission testing.** For emission testing in process vents or at the stack, use methods for sampling, measuring volumetric flow rates, non-controlled substance gas analysis, and measuring stack gas moisture that have been validated using a scientifically sound validation protocol.

- (A) **Sample and velocity traverses.** Acceptable methods include but are not limited to EPA Method 1 or 1A in appendix A-1 to 40 CFR part 60.
 - (B) **Velocity and volumetric flow rates.** Acceptable methods include but are not limited to EPA Method 2, 2A, 2B, 2C, 2D, 2F, or 2G in appendix A-1 to 40 CFR part 60. Alternatives that may be used for determining flow rates include Other Test Method 24 (incorporated by reference, see § 82.27) and ALT-012 (incorporated by reference, see § 82.27).
 - (C) **Non-controlled substance gas analysis.** Acceptable methods include but are not limited to EPA Method 3, 3A, or 3B in appendix A-1 to 40 CFR part 60.
 - (D) **Stack gas moisture.** Acceptable methods include but are not limited to EPA Method 4 in appendix A-1 to 40 CFR part 60.
- (ii) **Analytical methods.** Use a quality-assured analytical measurement technology capable of detecting the analyte of interest at the concentration of interest and use a sampling and analytical procedure validated with the analyte of interest at the concentration of interest. Where calibration standards for the analyte are not available, a chemically similar surrogate may be used. Acceptable analytical measurement technologies include but are not limited to gas chromatography (GC) with an appropriate detector, infrared (IR), Fourier transform infrared (FTIR), and nuclear magnetic resonance (NMR). Acceptable methods for determining controlled substances include EPA Method 18 in appendix A-1 to 40 CFR part 60, EPA Method 320 in appendix A to 40 CFR part 63, EPA 430-R-10-003 (incorporated by reference, see § 82.27), ASTM D6348-03 (incorporated by reference, see § 82.27), or other analytical methods validated using EPA Method 301 at appendix A to 40 CFR part 63. The validation protocol may include analytical technology manufacturer specifications or recommendations.
- (iii) **Documentation in the monitoring plan.** Describe the sampling, measurement, and analytical method(s) used under paragraphs (d)(5)(i) and (ii) of this section in the monitoring plan. Identify the methods used to obtain the samples and measurements listed under paragraphs (d)(5)(i)(A) through (D) of this section. At a minimum, include in the description of the analytical method a description of the analytical measurement equipment and procedures, quantitative estimates of the method's accuracy and precision for the analytes of interest at the concentrations of interest, as well as a description of how these accuracies and precisions were estimated, including the validation protocol used.
- (6) **Emission monitoring for pieces of equipment.** If conducting a site-specific leak detection method or monitoring approach for pieces of equipment, each entity must follow paragraph (d)(6)(i) or (ii) of this section and follow paragraph (d)(6)(iii) of this section.
- (i) **Site-specific leak monitoring approach.** Each entity may develop a site-specific leak monitoring approach. The entity must validate the leak monitoring method and describe the method and the validation in the monitoring plan. To validate the site-specific method, the entity may, for example, release a known rate of the controlled substances or surrogates of interest, or may compare the results of the site-specific method to those of a method that has been validated for the controlled substances or surrogates of interest. In the description of the leak detection method and its validation, include a detailed description of the method, including the procedures and equipment used and any sampling strategies. Also include the rationale behind the method, including why the method is expected to result in an unbiased estimate of emissions from equipment leaks. If the method is based on methods that are used to detect or quantify leaks or other emissions in other regulations, standards, or guidelines, identify and

describe the regulations, standards, or guidelines and why their methods are applicable to emissions of controlled substances or surrogates from leaks. Account for possible sources of error in the method, e.g., instrument detection limits, measurement biases, and sampling biases. Describe validation efforts, including but not limited to any comparisons against standard leaks or concentrations, any comparisons against other methods, and their results. If using the Screening Ranges Approach, the EPA Correlation Approach, or the Unit-Specific Correlation Approach with a monitoring instrument that does not meet all of the specifications in EPA Method 21 in appendix A-7 to 40 CFR part 60, then explain how and why the monitoring instrument, as used at the facility, would nevertheless be expected to accurately detect and quantify emissions of controlled substances or surrogates from process equipment, and describe how accuracy was verified. For all methods, provide a quantitative estimate of the accuracy and precision of the method.

- (ii) **EPA Method 21 monitoring.** If it is determined that EPA Method 21 in appendix A-7 to 40 CFR part 60 is appropriate for monitoring a controlled substance, conduct the screening value concentration measurements using EPA Method 21 to determine the screening range data or the actual screening value data for the Screening Ranges Approach, EPA Correlation Approach, or the Unit-Specific Correlation Approach. For the one-time testing to develop the Unit-Specific Correlation equations in EPA-453/R-95-017 (incorporated by reference, see § 82.27), conduct the screening value concentration measurements using EPA Method 21 and the bagging procedures to measure mass emissions. Concentration measurements of bagged samples must be conducted using gas chromatography following analytical procedures in EPA Method 18 in appendix A-1 to 40 CFR part 60 or other method according to this paragraph (d)(6). Use methane or other appropriate compound as the calibration gas.
 - (iii) **Frequency of measurement and sampling.** If estimating emissions based on monitoring of equipment, each entity must conduct monitoring at least annually. Sample at least one-third of equipment annually (except for equipment that is unsafe-to-monitor, difficult-to-monitor, insulated, or in heavy liquid service, pumps with dual mechanical seals, agitators with dual mechanical seals, pumps with no external shaft, agitators with no external shaft, pressure relief devices in gas and vapor service with an upstream rupture disk, sampling connection systems with closed-loop or closed purge systems, and pieces of equipment whose leaks are routed through a closed vent system to a destruction unit), changing the sample each year such that at the end of three years, all equipment in the process (that is not subject to the above-listed exceptions) has been monitored. If estimating emissions based on a sample of the equipment in the process, ensure that the sample is representative of the equipment in the process. If there are multiple processes that have similar types of equipment in similar service, and that perform activities on similar controlled substances (in terms of chemical composition, molecular weight, and vapor pressure) at similar pressures and concentrations, then the entity may annually sample all of the equipment in one third of these processes rather than one third of the equipment in each process.
- (7) **Destruction unit performance testing.** If venting or otherwise feeding controlled substances into a destruction unit and apply the destruction efficiency of the device to one or more controlled substances in paragraph (c) of this section, each entity must conduct emissions testing to determine the destruction efficiency for each controlled substance to which the destruction efficiency was applied. The entity must either determine the destruction efficiency for the most-difficult-to-destroy controlled substance fed into the device (or a surrogate that is still more difficult to destroy) and apply that destruction efficiency to all the controlled substances fed into the device

or alternatively determine different destruction efficiencies for different groups of controlled substances using the most-difficult-to-destroy controlled substance of each group (or a surrogate that is still more difficult to destroy).

- (i) ***Destruction efficiency testing.*** Each entity must sample the inlet and outlet of the destruction unit for a minimum of three runs of 1 hour each to determine the destruction efficiency. The entity must conduct the emissions testing using the methods in paragraph (d)(5) of this section. To determine the destruction efficiency, emission testing must be conducted when operating at high loads reasonably expected to occur (*i.e.*, representative of high total controlled substance load that will be sent to the device) and when destroying the most-difficult-to-destroy controlled substance (or a surrogate that is still more difficult to destroy) that is fed into the device from the processes subject to this section or that belongs to the group of controlled substances for which destruction efficiency is to be established. If the outlet concentration of a controlled substance that is fed into the device is below the detection limit of the method, the entity may use an outlet concentration of one-third the detection limit to estimate the destruction efficiency.
 - (A) For all other controlled substances that are vented to the destruction unit in any stream in more than trace concentrations, each entity must test and determine the destruction efficiency achieved for the most-difficult-to-destroy controlled substance or surrogate vented to the destruction unit. Examples of acceptable surrogates include the Class 1 compounds (ranked 1 through 34) in Appendix D, Table D-1 of "Guidance on Setting Permit Conditions and Reporting Trial Burn Results; Volume II of the Hazardous Waste Incineration Guidance Series," January 1989, EPA Publication EPA 625/6-89/019. A copy of this publication can be obtained by contacting the Environmental Protection Agency, 1200 Pennsylvania Avenue NW., Washington, DC 20460, (202) 272-0167, <https://www.epa.gov>.
 - (B) [Reserved]
- (ii) ***Destruction efficiency testing frequency.*** Each entity must conduct emissions testing to determine the destruction efficiency as provided in paragraph (d)(7)(ii)(A) or (B) of this section, whichever occurs first:
 - (A) ***Conduct an emissions test every 5 years.*** In the calculations under paragraph (c) of this section, apply the updated destruction efficiency to the destruction that occurs after the test.
 - (B) ***Destruction unit changes that affect the destruction efficiency.*** If making a change to the destruction unit that would be expected to affect the destruction efficiency, each entity must conduct an emissions test to update the destruction efficiency. Conduct the test before February 14 of the year that immediately follows the change. In the calculations under paragraph (c) of this section, apply the updated destruction efficiency to the destruction that occurs after the change to the device.
- (iii) ***Previous testing.*** If an emissions test was conducted within the 5 years prior to November 12, 2024, and the emissions testing meets the requirements in paragraph (d)(7)(i) of this section, each entity may use the destruction efficiency determined during this previous emissions testing. For purposes of paragraph (d)(7)(ii)(A) of this section, the date of the previous emissions test rather than November 12, 2024, shall constitute the beginning of the 5-year re-measurement cycle.

- (iv) **Hazardous waste combustor testing.** If a destruction unit used to destroy a controlled substance is subject to testing under subpart EEE of part 63 of this chapter or any portion of parts 260 through 270 of this chapter, each entity may apply the destruction efficiency specifically determined for controlled substances under that test if the testing meets the criteria in paragraph (d)(7)(i)(A) of this section. If the testing of the destruction efficiency under subpart EEE of part 63 was conducted more than 5 years ago, the entity may use the most recent destruction efficiency test provided that the design, operation, and maintenance of the destruction unit has not changed since the last destruction efficiency test in a manner that could affect the ability to achieve the destruction efficiency, and the hazardous waste is fed into the normal flame zone.
- (8) **Mass of previously produced controlled substances fed into a destruction unit.** Each entity must measure the mass of each controlled substance that is fed into the destruction unit in more than trace concentrations. Such controlled substances include but are not limited to quantities that are shipped to the facility by another facility for destruction and quantities that are returned to the facility for reclamation but are found to be irretrievably contaminated and are therefore destroyed. The entity must use flowmeters, weigh scales, or a combination of volumetric and density measurements with an accuracy and precision of ± 1 percent of full scale or better. If the measured mass includes more than trace concentrations of materials other than the controlled substance being destroyed, the entity must measure the concentration of the controlled substance being destroyed. The entity must multiply this concentration (mass fraction) by the mass measurement to obtain the mass of the controlled substance fed into the destruction unit.
- (9) **Emissions due to malfunctions of destruction unit.** In their estimates of the mass of controlled substances destroyed, facilities that destroy controlled substances must account for any temporary reductions in the destruction efficiency that result from any malfunctions of the destruction unit, including periods of operation outside of the operating conditions defined in operating permit requirements and/or outside of the destruction unit's manufacturer's specifications.
- (10) **Emissions due to process startup, shutdown, or malfunctions.** For each process listed in paragraph (b) of this section, each entity must account for emissions of controlled substance that occur at each facility as a result of startups, shutdowns, and malfunctions, either recording controlled substance emissions during these events, or documenting that these events do not result in significant controlled substance emissions. Facilities may use the calculation methods in paragraph (c)(1)(i) of this section to estimate emissions during startups, shutdowns, and malfunctions.
- (11) **Development of initial parameters.** Initial scoping speciations, emissions testing, emission factor development, emission calculation factor development, emission characterization development, and destruction efficiency determinations must be completed by February 7, 2025, for processes and operating scenarios that operate between October 10, 2024, and November 12, 2024. For other processes and operating scenarios, initial scoping specifications, emissions testing, emission factor development, emission calculation factor development, emission characterization development, and destruction efficiency determinations must be complete by February 14 of the year following the year in which the process or operating scenario commences or recommences.
- (12) **Calibration for volumetric and density measurements.** Calibrate all flow meters, weigh scales, and combinations of volumetric and density measures using monitoring instruments traceable to the International System of Units (SI) through the National Institute of Standards and Technology (NIST) or other recognized national measurement institute. Recalibrate all flow meters, weigh scales, and

combinations of volumetric and density measures at the minimum frequency specified by the manufacturer. Use any of the following applicable flow meter test methods or the calibration procedures specified by the flow meter, weigh-scale, or other volumetric or density measure manufacturer.

- (i) ASME MFC-3M-2004 Measurement of Fluid Flow in Pipes Using Orifice, Nozzle, and Venturi (incorporated by reference, see § 82.27).
 - (ii) ASME MFC-4M-1986 (Reaffirmed 2016) Measurement of Gas Flow by Turbine Meters (incorporated by reference, see § 82.27).
 - (iii) ASME-MFC-5M-1985, (Reaffirmed 1994) Measurement of Liquid Flow in Closed Conduits Using Transit-Time Ultrasonic Flowmeters (incorporated by reference, see § 82.27).
 - (iv) ASME MFC-6M-1998 Measurement of Fluid Flow in Pipes Using Vortex Flowmeters (incorporated by reference, see § 82.27).
 - (v) ASME MFC-7M-1987 (Reaffirmed 1992) Measurement of Gas Flow by Means of Critical Flow Venturi Nozzles (incorporated by reference, see § 82.27).
 - (vi) ASME MFC-9M-1988 (Reaffirmed 2001) Measurement of Liquid Flow in Closed Conduits by Weighing Method (incorporated by reference, see § 82.27).
 - (vii) ASME MFC-11M-2006 Measurement of Fluid Flow by Means of Coriolis Mass Flowmeters (incorporated by reference, see § 82.27).
 - (viii) ASME MFC-14M-2003 Measurement of Fluid Flow Using Small Bore Precision Orifice Meters (incorporated by reference, see § 82.27).
- (13) **Calibration for concentration determinations.** All analytical equipment used to determine the concentration of controlled substances, including but not limited to gas chromatographs and associated detectors, IR, FTIR, and NMR devices, must be calibrated at a frequency needed to support the type of analysis specified in the monitoring plan as required under paragraph (d)(5)(iii) of this section. Quality assurance samples at the concentrations of concern must be used for the calibration. Such quality assurance samples must consist of or be prepared from certified standards of the analytes of concern where available; if not available, calibration must be performed by a method specified in the monitoring plan.

(e) **Data reporting requirements —**

- (1) **All facilities.** In addition to the information required by § 82.13, for class I controlled substances, and § 82.24, for class II controlled substances, each entity must report the information in paragraphs (e)(1)(ii) through (iv) of this section according to the schedule in paragraph (e)(1)(i) of this section.
- (i) **Frequency of reporting under this paragraph (e)(1).** The information in paragraphs (e)(1)(ii) through (v) of this section must be reported annually, as applicable.
 - (ii) **Process identification.** For each process listed in paragraph (b)(2) of this section, each entity must provide:
 - (A) A description and identification of the process listed in paragraph (b)(2) of this section.
 - (B) A description and number, letter, or other identifier for each process vent associated with the process. This identifier must be a consistent name reported from year to year.

- (C) The type of method(s) (i.e., process-vent-specific emission factor, process-vent-specific emission calculation factor, or mass balance) and each applicable analytical approach (e.g., compliance options under paragraphs (c)(1)(i) and (d)(4) of this section) used to determine the mass emissions from each process vent associated with the process.
 - (D) The type of method(s) (e.g., site-specific leak monitoring approach or EPA Method 21 monitoring) and each applicable analytical approach (e.g., compliance options under paragraphs (c)(2)(i) and (d)(4) of this section) used to determine the mass emissions from equipment leaks associated with the process.
 - (iii) **Process emissions.** For each controlled substance, each entity must report the total mass in kilograms of the controlled substance emitted from the processes listed in paragraph (b)(2) of this section.
 - (iv) **Effective destruction efficiency.** For each process and controlled substance, report the effective destruction efficiency, $DE_{\text{effective}}$, calculated for that process using equation 31 to paragraph (c)(6) of this section.
 - (v) **Monitoring plan.** The monitoring plan, as specified in paragraph (f)(6) of this section, including any revisions since the prior year's submission as applicable.
- (2) **Reporting for emission factor and emission calculation factor approach.** For processes whose emissions are determined using the emission factor approach under paragraph (c)(1)(iii) of this section or the emission calculation factor under paragraph (c)(1)(iv) of this section, each entity must report the following for each process.
- (i) The identity and quantity of the process activity used to estimate emissions (e.g., tons of product produced or tons of reactant consumed) for each process vent associated with the process.
 - (ii) The site-specific, process-vent-specific emission factor(s) or emission calculation factor for each process vent associated with the process.
 - (iii) For each controlled substance, the mass emitted from each process vent associated with the process, in kilograms.
 - (iv) For each controlled substance, the total mass emitted from equipment leaks, in kilograms.
- (3) **Reporting for mass balance approach.** For processes whose emissions are determined using the mass-balance approach under paragraph (c)(4) of this section, you must report the information listed in paragraphs (e)(3)(i) through (xiii) of this section for each process on an annual basis. Identify and separately report controlled substance emissions from transformation processes where the controlled substance reactants are produced at another facility. If you use an element other than a halogen in the mass-balance equation pursuant to paragraph (c)(4)(iii) of this section, substitute that element for the halogen in the reporting requirements of this paragraph (e)(3).
- (i) If you calculate the relative and absolute errors under paragraph (c)(4)(i) of this section, the absolute and relative errors calculated under paragraph (c)(4)(i) of this section, as well as the data (including quantities and their accuracies and precisions) used in these calculations.
 - (ii) The balanced chemical equation that describes the reaction used to manufacture the controlled substance product and each controlled substance transformation product.

- (iii) The mass and chemical formula of each controlled substance reactant emitted from the process in metric tons.
- (iv) The mass and chemical formula of the controlled substance product emitted from the process in metric tons.
- (v) The mass and chemical formula of each controlled substance byproduct emitted from the process in metric tons.
- (vi) The mass and chemical formula of each controlled substance reactant that is fed into the process (metric tons).
- (vii) The mass and chemical formula of each halogen-containing product produced by the process (metric tons).
- (viii) If you use paragraph (c)(4)(iv) of this section to estimate the total mass of halogen in destroyed or recaptured streams, report the following.
 - (A) The mass and chemical formula of each halogen-containing product that is removed from the process and fed into the destruction device (metric tons).
 - (B) The mass and chemical formula of each halogen-containing byproduct that is removed from the process and fed into the destruction device (metric tons).
 - (C) The mass and chemical formula of each halogen-containing reactant that is removed from the process and fed into the destruction device (metric tons).
 - (D) The mass and chemical formula of each halogen-containing byproduct that is removed from the process and recaptured (metric tons).
 - (E) The demonstrated destruction efficiency of the destruction device for each controlled substance fed into the device from the process in greater than trace concentrations (fraction).
- (ix) If you use paragraph (c)(4)(xv) of this section to estimate the total mass of halogen in destroyed or recaptured streams, report the following.
 - (A) The mass of halogen in each stream that is fed into the destruction device (metric tons).
 - (B) The mass of halogen that is recaptured (metric tons).
 - (C) The weighted average destruction efficiency of the destruction device calculated for each stream under paragraph (c)(4)(xvi) of this section.
- (x) The fraction of the mass emitted that consists of each halogen-containing reactant.
- (xi) The fraction of the mass emitted that consists of the halogen-containing product.
- (xii) The fraction of the mass emitted that consists of each halogen-containing byproduct.
- (xiii) The method used to estimate the total mass of halogen in destroyed or recaptured streams (specify paragraph (c)(4)(iv) or (xv) of this section).

- (4) **Reporting of destruction unit excess emission data.** Each facility that destroys a controlled substance must report the excess emissions that result from malfunctions of the destruction unit, and these excess emissions must be reflected in the controlled substance estimates in paragraph (c)(1) of this section. Such excess emissions would occur if the destruction efficiency was reduced due to the malfunction.
- (5) **Reporting of destruction unit testing.** By February 7, 2025, or by February 14 of the year immediately following the year in which it begins controlled substance destruction, each facility that destroys controlled substances must submit a report containing the information in paragraphs (e)(5)(i) through (iii) of this section. This report is one-time unless a change is made to the destruction unit that would be expected to affect its destruction efficiencies.
- (i) Chemical identity of the controlled substance(s) used in the performance test conducted to determine destruction efficiency, including surrogates, and information on why the surrogate is sufficient to demonstrate the destruction efficiency for each controlled substance, consistent with requirements in paragraph (d)(7)(i) of this section, vented to the destruction unit.
 - (ii) Date of the most recent destruction unit test.
 - (iii) Name of all applicable Federal or State regulations that may apply to the destruction process.
- (6) **Reporting for destruction.** Each facility that destroys controlled substances must report, separately from the controlled substance emissions reported under paragraph (e)(2) of this section, the following for each previously produced controlled substance destroyed:
- (i) The mass of the controlled substance emitted from the destruction unit (kilograms).
 - (ii) [Reserved]
- (7) **Reporting of controlled substance products of incomplete combustion (PICs) of controlled substances.** Each facility that destroys controlled substances must submit a one-time report by February 7, 2025, or by February 14 of the year immediately following the year in which it begins controlled substance destruction, that describes any measurements, research, or analysis that it has performed or obtained that relate to the formation of products of incomplete combustion that are controlled substances during the destruction of controlled substances. The report must include the methods and results of any measurement or modeling studies, including the products of incomplete combustion for which the exhaust stream was analyzed, as well as copies of relevant scientific papers, if available, or citations of the papers, if they are not. No new testing is required to fulfill the requirement of this paragraph (e)(7).
- (f) **Records that must be retained.** Each entity must retain the dated records specified in paragraphs (f)(1) through (6) of this section, as applicable, and be able to provide such information to EPA within 5 business days of the date the records are requested.
- (1) **Process information records.**
- (i) Identify all processes subject to this section. Include the unit identification as appropriate, the process identification reported for the process under paragraphs (e)(1)(ii)(A) through (B) of this section, and the product with which the process is associated.
 - (ii) Monthly and annual records, as applicable, of all analyses and calculations conducted as required under paragraph (c) of this section, including the data monitored under paragraph (d) of this section, and all information reported as required under paragraph (e) of this section.

- (2) **Scoping speciation.** Retain records documenting the information collected under paragraph (d)(1) of this section.
- (3) **Emission factor and emission calculation factor method.** Retain the following records for each process for which the emission factor or emission calculation factor method was used to estimate emissions.
 - (i) Identify all continuous process vents with emissions of controlled substances that are included in the top 25 percent of continuous process vents, and all continuous process vents in the remaining group (i.e., 75 percent of continuous process vents with lower emissions of controlled substances). Include the data and calculation used to develop the preliminary estimate of emissions for each process vent.
 - (ii) Identify all batch process vents.
 - (iii) For each vent, identify the method used to develop the factor (i.e., emission factor by emissions test or emission calculation factor).
 - (iv) The emissions test data and reports (see paragraph (d)(2)(v) of this section) and the calculations used to determine the process-vent-specific emission factor, including the actual process-vent-specific emission factor, the average hourly emission rate of each controlled substance from the process vent during the test and the process feed rate, process production rate, or other process activity rate during the test.
 - (v) The process-vent-specific emission calculation factor and the calculations used to determine the process-vent-specific emission calculation factor.
 - (vi) The annual process production quantity or other process activity information in the appropriate units, along with the dates and time period during which the process was operating and dates and time periods the process vents are vented to the destruction unit. As an alternative to date and time periods when process vents are vented to the destruction unit, a facility may track dates and time periods that process vents by-pass the destruction unit.
 - (vii) Calculations used to determine annual emissions of each controlled substance for each process and the total controlled substance emissions for all processes, i.e., total for facility.
- (4) **Mass-balance method.** Retain the following records for each process for which the mass-balance method was used to estimate emissions. If you use an element other than a halogen in the mass-balance equation pursuant to paragraph (c)(4)(iii) of this section, substitute that element for the halogen in the recordkeeping requirements of this paragraph (f)(4).
 - (i) The data and calculations used to estimate the absolute and relative errors associated with use of the mass-balance approach.
 - (ii) The data and calculations used to estimate the mass of halogen emitted from the process.
 - (iii) The data and calculations used to determine the fractions of the mass emitted consisting of each reactant (FERd), product (FEP), and byproduct (FEBk), including the preliminary calculations in paragraph (c)(4)(viii)(A) of this section.
- (5) **Destruction efficiency testing.** A facility that destroys controlled substances and reflects this destruction in paragraph (c) of this section must retain the emissions performance testing reports (including revised reports) for each destruction unit. The emissions performance testing report must

contain all information and data used to derive the destruction efficiency for each controlled substance whose destruction the facility reflects in paragraph (c) of this section, as well as the key process and device conditions during the test. This information includes the following:

- (i) Destruction efficiency (DE) determined for each controlled substance whose destruction the facility reflects in paragraph (c) of this section, in accordance with paragraph (d)(7)(i)(A) of this section.
 - (ii) Chemical identity of the controlled substance(s) used in the performance test conducted to determine destruction efficiency, including surrogates, and information on why the surrogate is sufficient to demonstrate destruction efficiency for each controlled substance, consistent with requirements in paragraph (d)(7)(i)(A) of this section, vented to the destruction unit.
 - (iii) Mass flow rate of the stream containing the controlled substance or surrogate into the device during the test.
 - (iv) Concentration (mass fraction) of each controlled substance or surrogate in the stream flowing into the device during the test.
 - (v) Concentration (mass fraction) of each controlled substance or surrogate at the outlet of the destruction unit during the test.
 - (vi) Mass flow rate at the outlet of the destruction unit during the test.
 - (vii) Test methods and analytical methods used to determine the mass flow rates and controlled substance (or surrogate) concentrations of the streams flowing into and out of the destruction unit during the test.
 - (viii) Destruction unit conditions that are normally monitored for device control, such as temperature, total mass flow rates into the device, and CO or O₂ levels.
 - (ix) Name of all applicable Federal or State regulations that may apply to the destruction process.
- (6) **Equipment leak records.** If the equipment is subject to paragraph (c)(2) of this section, each entity must maintain information on the number of each type of equipment, the service of each piece of equipment (gas, light liquid, heavy liquid); the concentration of each controlled substance in the stream; each piece of equipment excluded from monitoring requirement; the time period each piece of equipment was in service, and the emission calculations for each controlled substance for all processes. Depending on the equipment leak monitoring approach followed, each entity must maintain information for equipment on the associated screening data concentrations for greater than or equal to 10,000 ppmv and associated screening data concentrations for less than 10,000 ppmv; associated actual screening data concentrations; and associated screening data and leak rate data (i.e., bagging) used to develop a unit-specific correlation. If a site-specific leak detection approach was developed and followed, provide the records for monitoring events and the emissions estimation calculations, as appropriate, consistent with the approach for equipment leak emission estimation in the monitoring plan.
- (7) **All facilities.** Dated records documenting the initial and periodic calibration of all analytical equipment used to determine the concentration of controlled substances, including but not limited to gas chromatographs, gas chromatography-mass spectrometry, gas chromatograph-electron capture detector, FTIR, and NMR devices, and all mass measurement equipment such as weigh

scales, flowmeters, and volumetric and density measures used to measure the quantities reported under this section, including the industry standards or manufacturer directions used for calibration pursuant to paragraphs (d)(5), (6), (12), and (13) of this section.

- (8) **Controlled substance monitoring plan.** A Controlled Substance Monitoring Plan must be completed by February 7, 2025, or within 120 days of the date that an entity first meets the criteria in paragraph (a) of this section.
- (i) At a minimum, the monitoring plan shall include the elements listed in this paragraph (f)(8)(i) of this section.
- (A) Identification of positions of responsibility (*i.e.*, job titles) for collection of the emission data.
- (B) Explanation of the processes and methods used to collect the necessary data for calculations under this section.
- (C) Description of the procedures and methods that are used for quality assurance, maintenance, and repair of all continuous monitoring systems, flow meters, and other instrumentation used to provide data for the controlled substances reported under this part.
- (ii) The monitoring plan may rely on references to existing corporate documents (*e.g.*, standard operating procedures, quality assurance programs under appendix F to 40 CFR part 60 or appendix B to 40 CFR part 75, and other documents) provided that the elements required by paragraph (f)(8)(i) of this section are easily recognizable.
- (iii) The owner or operator shall revise the monitoring as needed to reflect changes in production processes, monitoring instrumentation, and quality assurance procedures; or to improve procedures for the maintenance and repair of monitoring systems to reduce the frequency of monitoring equipment downtime.

[89 FR 82433, Oct. 10, 2024]

§ 82.26 Treatment of data submitted under this subpart.

- (a) Sections 2.201 through 2.215 and 2.301 of this chapter do not apply to data submitted under this subpart that EPA has determined through rulemaking to be either of the following:
- (1) Emission data, as defined in § 2.301(a)(2) of this chapter, determined in accordance with section 114(c) and 307(d) of the Clean Air Act; or
- (2) Data not otherwise entitled to confidential treatment.
- (b) Except as otherwise provided in paragraph (d) of this section and §§ 2.201 through 2.208 and 2.301(c) and (d) of this chapter do not apply to data submitted under this part that EPA has determined through rulemaking to be entitled to confidential treatment. EPA shall treat that information as confidential in accordance with the provisions of § 2.211 of this chapter, subject to paragraph (d) of this section and § 2.209 of this chapter.

- (c) Upon receiving a request under 5 U.S.C. 552 for data submitted under this part that EPA has determined through rulemaking to be entitled to confidential treatment, the relevant Agency official shall furnish the requestor a notice that the information has been determined to be entitled to confidential treatment and that the request is therefore denied. The notice shall include or cite to the appropriate EPA determination.
- (d) A determination made through rulemaking that information submitted under this part is entitled to confidential treatment shall continue in effect unless, subsequent to the confidentiality determination through rulemaking, EPA takes one of the following actions:
 - (1) EPA determines through a subsequent rulemaking that the information is emission data or data not otherwise entitled to confidential treatment; or
 - (2) The Office of General Counsel issues a final determination, based on the requirements of 5 U.S.C. 552(b)(4), stating that the information is no longer entitled to confidential treatment because of change in the applicable law or newly discovered or changed facts. Prior to making such final determination, EPA shall afford the business an opportunity to submit comments on pertinent issues in the manner described by §§ 2.204(e) and 2.205(b) of this chapter. If, after consideration of any timely comments submitted by the business, the Office of General Counsel makes a revised final determination that the information is not entitled to confidential treatment, the relevant agency official will notify the business in accordance with the procedures described in § 2.205(f)(2) of this chapter.

[89 FR 82450, Oct. 10, 2024]

§ 82.27 Incorporation by reference.

- (a)
 - (1) Certain material is incorporated by reference into this subpart with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. All approved incorporation by reference (IBR) material is available for inspection at EPA and at the National Archives and Records Administration (NARA). Contact EPA at: U.S. EPA's Air and Radiation Docket; EPA West Building, Room 3334, 1301 Constitution Ave. NW, Washington, DC 20460, 202-566-1742. For information on the availability of this material at NARA, visit www.archives.gov/federal-register/cfr/ibr-locations or email fr.inspection@nara.gov.
 - (2) The IBR material may be obtained from the sources in the following paragraphs of this section or from one or more private resellers listed in this paragraph (a)(2). For material that is no longer commercially available, contact: U.S. EPA's Air and Radiation Docket; EPA West Building, Room 3334, 1301 Constitution Ave. NW, Washington, DC 20460; a-and-rdocket@epa.gov.
 - (i) Accuris Standards Store, 321 Inverness Drive, South Englewood, CO 80112; phone: (800) 332-6077; website: <https://accuristech.com>.
 - (ii) American National Standards Institute (ANSI), 25 West 43rd Street, Fourth Floor, New York, NY 10036-7417; phone: (212) 642-4980; email: info@ansi.org; website: www.ansi.org.
 - (iii) GlobalSpec, 257 Fuller Road, Suite NFE 1100, Albany, NY 12203-3621; phone: (800) 261-2052; website: <https://standards.globalspec.com>.
 - (iv) Nimonik Document Center, 401 Roland Way, Suite 224, Oakland, CA 94624; phone (650) 591-7600; email: info@document-center.com; website: www.document-center.com.

- (b) American Society of Mechanical Engineers (ASME), Two Park Avenue, New York, NY 10016, phone: 800.843.2763, email: CustomerCare@asme.org; website: www.asme.org.
 - (1) ASME MFC-3M-2004, Measurement of Fluid Flow in Pipes Using Orifice, Nozzle, and Venturi, issued August 15, 2005; IBR approved for § 82.25(d).
 - (2) ASME MFC-4M-1986 (Reaffirmed 2016), Measurement of Gas Flow by Turbine Meters, reaffirmed 2016, IBR approved for § 82.25(d).
 - (3) ASME MFC-5M-1985 (Reaffirmed 1994), Measurement of Liquid Flow in Closed Conduits Using Transit-Time Ultrasonic Flow Meters, copyright 1985; IBR approved for § 82.25(d).
 - (4) ASME MFC-6M-1998, Measurement of Fluid Flow in Pipes Using Vortex Flowmeters, July 4, 1998; IBR approved for § 82.25(d).
 - (5) ASME MFC-7M-1987 (Reaffirmed 1992), Measurement of Gas Flow by Means of Critical Flow Venturi Nozzles, copyright 1987; IBR approved for § 82.25(d).
 - (6) ASME MFC-9M-1988 (Reaffirmed 2001), Measurement of Liquid Flow in Closed Conduits by Weighing Method, reaffirmed 2001; IBR approved for § 82.25(d).
 - (7) ASME MFC-11M-2006, Measurement of Fluid Flow by Means of Coriolis Mass Flowmeters, issued March 30, 2007; IBR approved for § 82.25(d).
 - (8) ASME MFC-14M-2003, Measurement of Fluid Flow Using Small Bore Precision Orifice Meters, issued April 17, 2003; IBR approved for § 82.25(d).
- (c) ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428; phone: 610.832.9500; email: service@astm.org; website: www.astm.org/.
 - (1) ASTM D6348-03 Standard Test Method for Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform Infrared (FTIR) Spectroscopy, approved October 1, 2003, IBR approved for § 82.25(d).
 - (2) [Reserved]
- (d) U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington, DC 20460; phone: 202.272.0167; website: www.epa.gov.
 - (1) Approved Alternative Method 012: An Alternate Procedure for Stack Gas Volumetric Flow Rate Determination (Tracer Gas) (ALT-012), U.S. Environmental Protection Agency Emission Measurement Center, May 23, 1994, IBR approved for § 82.25(d).
 - (2) Emissions Inventory Improvement Program, Volume II: Chapter 16, Methods for Estimating Air Emissions from Chemical Manufacturing Facilities, August 2007, Final, IBR approved for § 82.25(c).
 - (3) Protocol for Equipment Leak Emission Estimates, EPA-453/R-95-017, November 1995 (EPA-453/R-95-017), IBR approved for § 82.25(c) and (d).
 - (4) Protocol for Measuring Destruction or Removal Efficiency (DRE) of Fluorinated Greenhouse Gas Abatement Equipment in Electronics Manufacturing, Version 1, EPA-430-R-10-003, March 2010 (EPA 430-R-10-003), IBR approved for § 82.25 (d).
 - (5) Tracer Gas Protocol for the Determination of Volumetric Flow Rate Through the Ring Pipe of the Xact Multi-Metals Monitoring System, also known as Other Test Method 24 (Tracer Gas Protocol), Eli Lilly and Company Tippecanoe Laboratories, September 2006, IBR approved for § 82.25(d).

[89 FR 82450, Oct. 10, 2024]

Appendix A to Subpart A of Part 82—Class I Controlled Substances

Class 1 controlled substances	ODP
A. Group I:	
CFCl ₃ -Trichlorofluoromethane (CFC-II)	1.0
CF ₂ Cl ₂ -Dichlorodifluoromethane (CFC-12)	1.0
C ₂ F ₃ Cl ₃ -Trichlorotrifluoroethane (CFC-113)	0.8
C ₂ F ₄ Cl ₂ -Dichlorotetrafluoroethane (CFC-114)	1.0
C ₂ F ₅ Cl-Monochloropentafluoroethane (CFC-115)	0.6
All isomers of the above chemicals	
B. Group II:	
CF ₂ ClBr-Bromochlorodifluoromethane (Halon-1211)	3.0
CF ₃ Br-Bromotrifluoromethane (Halon-1301)	10.0
C ₂ F ₄ Br ₂ -Dibromotetrafluoroethane (Halon-2402)	6.0
All isomers of the above chemicals	
C. Group III:	
CF ₃ Cl-Chlorotrifluoromethane (CFC-13)	1.0
C ₂ FCl ₅ -(CFC-111)	1.0
C ₂ F ₂ Cl ₄ -(CFC-112)	1.0
C ₃ FCl ₇ -(CFC-211)	1.0
C ₃ F ₂ Cl ₆ -(CFC-212)	1.0
C ₃ F ₃ Cl ₅ -(CFC-213)	1.0
C ₃ F ₄ Cl ₄ -(CFC-214)	1.0
C ₃ F ₅ Cl ₃ -(CFC-215)	1.0
C ₃ F ₆ Cl ₂ -(CFC-216)	1.0
C ₃ F ₇ Cl-(CFC-217)	1.0
All isomers of the above chemicals	
D. Group IV: CCl ₄ -Carbon Tetrachloride	1.1
E. Group V:	
C ₂ H ₃ Cl ₃ -1,1,1 Trichloroethane (Methyl chloroform)	0.1
All isomers of the above chemical except 1,1,2-trichloroethane	
F. Group VI: CH ₃ Br—Bromomethane (Methyl Bromide)	0.7
G. Group VII:	
CHFBR ₂	1.00
CHF ₂ Br (HBFC-2201)	0.74
CH ₂ FBr	0.73
C ₂ HFBr ₄	0.3-0.8
C ₂ HF ₂ Br ₃	0.5-1.8

Class 1 controlled substances	ODP
C ₂ HF ₃ Br ₂	0.4-1.6
C ₂ HF ₄ Br	0.7-1.2
C ₂ H ₂ FBr ₃	0.1-1.1
C ₂ H ₂ F ₂ Br ₂	0.2-1.5
C ₂ H ₂ F ₃ Br	0.7-1.6
C ₂ H ₂ FBr ₂	0.1-1.7
C ₂ H ₃ F ₂ Br	0.2-1.1
C ₂ H ₄ FBr	0.07-0.1
C ₃ HFBr ₆	0.3-1.5
C ₃ HF ₂ Br ₅	0.2-1.9
C ₃ HF ₃ Br ₄	0.3-1.8
C ₃ HF ₄ Br ₃	0.5-2.2
C ₃ HF ₅ Br ₂	0.9-2.0
C ₃ HF ₆ Br	0.7-3.3
C ₃ H ₂ FBr ₅	0.1-1.9
C ₃ H ₂ F ₂ Br ₄	0.2-2.1
C ₃ H ₂ F ₃ Br ₃	0.2-5.6
C ₃ H ₂ F ₄ Br ₂	0.3-7.5
C ₃ H ₂ F ₅ Br	0.9-14
C ₃ H ₃ FBr ₄	0.08-1.9
C ₃ H ₃ F ₂ Br ₃	0.1-3.1
C ₃ H ₃ F ₃ Br ₂	0.1-2.5
C ₃ H ₃ F ₄ Br	0.3-4.4
C ₃ H ₄ FBr ₃	0.03-0.3
C ₃ H ₄ F ₂ Br ₂	0.1-1.0
C ₃ H ₄ F ₃ Br	0.07-0.8
C ₃ H ₅ FBr ₂	0.04-0.4
C ₃ H ₅ F ₂ Br	0.07-0.8
C ₃ H ₆ FB	0.02-0.7
H. Group VIII: CH ₂ BrCl (Chlorobromomethane 0.12	

[60 FR 24986, May 10, 1995, as amended at 68 FR 42892, July 18, 2003]

Appendix B to Subpart A of Part 82—Class II Controlled Substances^{ab}

Controlled substance	ODP
1. HCFC-21 (CHFCI ₂) Dichlorofluoromethane	0.04
2. HCFC-22 (CHF ₂ Cl) Monochlorodifluoromethane	0.055
3. HCFC-31 (CH ₂ FCI) Monochlorofluoromethane	0.02
4. HCFC-121 (C ₂ HFCl ₄) Tetrachlorofluoroethane	0.01-0.04
5. HCFC-122 (C ₂ HF ₂ Cl ₃) Trichlorodifluoroethane	0.02-0.08
6. HCFC-123 (C ₂ HF ₃ Cl ₂) Dichlorotrifluoroethane	0.02
7. HCFC-124 (C ₂ HF ₄ Cl) Monochlorotetrafluoroethane	0.022
8. HCFC-131 (C ₂ H ₂ FCI ₃) Trichlorofluoroethane	0.007-0.05
9. HCFC-132 (C ₂ H ₂ F ₂ Cl ₂) Dichlorodifluoroethane	0.008-0.05
10. HCFC-133 (C ₂ H ₂ F ₃ Cl) Monochlorotrifluoroethane	0.02-0.06
11. HCFC-141 (C ₂ H ₃ FCI ₂) Dichlorofluoroethane	0.005-0.07
12. HCFC-141b (CH ₃ CFCl ₂) Dichlorofluoroethane	0.11
13. HCFC-142 (C ₂ H ₃ F ₂ Cl) Chlorodifluoroethane	0.008-0.07
14. HCFC-142b (CH ₃ CF ₂ Cl) Monochlorodifluoroethane	0.065
15. HCFC-151 (C ₂ H ₄ FCI) Chlorofluoroethane	0.003-0.005
16. HCFC-221 (C ₃ HFCI ₆) Hexachlorofluoropropane	0.015-0.07
17. HCFC-222 (C ₃ HF ₂ Cl ₅) Pentachlorodifluoropropane	0.01-0.09
18. HCFC-223 (C ₃ HF ₃ Cl ₄) Tetrachlorotrifluoropropane	0.01-0.08
19. HCFC-224 (C ₃ HF ₄ Cl ₃) Trichlorotetrafluoropropane	0.01-0.09
20. HCFC-225 (C ₃ HF ₅ Cl ₂) Dichloropentafluoropropane	0.02-0.07
21. HCFC-225ca (CF ₃ CF ₂ CHCl ₂) Dichloropentafluoropropane	0.025
22. HCFC-225cb (CF ₂ ClCF ₂ CHClF) Dichloropentafluoropropane	0.033
23. HCFC-226 (C ₃ HF ₆ Cl) Monochlorohexafluoropropane	0.02-0.1
24. HCFC-231 (C ₃ H ₂ FCI ₅) Pentachlorofluoropropane	0.05-0.09
25. HCFC-232 (C ₃ H ₂ F ₂ Cl ₄) Tetrachlorodifluoropropane	0.008-0.1
26. HCFC-233 (C ₃ H ₂ F ₃ Cl ₃) Trichlorotrifluoropropane	0.007-0.23
27. HCFC-234 (C ₃ H ₂ F ₄ Cl ₂) Dichlorotetrafluoropropane	0.01-0.28
28. HCFC-235 (C ₃ H ₂ F ₅ Cl) Monochloropentafluoropropane	0.03-0.52
29. HCFC-241 (C ₃ H ₃ FCI ₄) Tetrachlorofluoropropane	0.004-0.09
30. HCFC-242 (C ₃ H ₃ F ₂ Cl ₃) Trichlorodifluoropropane	0.005-0.13

^a According to Annex C of the Montreal Protocol, "Where a range of ODPs is indicated, the highest value in that range shall be used for the purposes of the Protocol. The ODPs listed as single value have been determined from calculations based on laboratory measurements. Those listed as a range are based on estimates and are less certain. The range pertains to an isomeric group. The upper value is the estimate of the ODP of the isomer with the highest ODP, and the lower value is the estimate of the ODP of the isomer with the lowest ODP.

^b This table includes all isomers of the substances above, regardless of whether the isomer is explicitly listed on its own.

Controlled substance	ODP
31. HCFC-243 (C3H3F3Cl2) Dichlorotrifluoropropane	0.007-0.12
32. HCFC-244 (C3H3F4Cl) Monochlorotetrafluoropropane	0.009-0.14
33. HCFC-251 (C3H4FCl3) Monochlorotetrafluoropropane	0.001-0.01
34. HCFC-252 (C3H4F2Cl2) Dichlorodifluoropropane	0.005-0.04
35. HCFC-253 (C3H4F3Cl) Monochlorotrifluoropropane	0.003-0.03
36. HCFC-261 (C3H5FCl2) Dichlorofluoropropane	0.002-0.02
37. HCFC-262 (C3H5F2Cl) Monochlorodifluoropropane	0.002-0.02
38. HCFC-271 (C3H6FCl) Monochlorofluoropropane	0.001-0.03

^a According to Annex C of the Montreal Protocol, "Where a range of ODPs is indicated, the highest value in that range shall be used for the purposes of the Protocol. The ODPs listed as single value have been determined from calculations based on laboratory measurements. Those listed as a range are based on estimates and are less certain. The range pertains to an isomeric group. The upper value is the estimate of the ODP of the isomer with the highest ODP, and the lower value is the estimate of the ODP of the isomer with the lowest ODP.

^b This table includes all isomers of the substances above, regardless of whether the isomer is explicitly listed on its own.

[79 FR 64288, Oct. 28, 2014]

Appendix C to Subpart A of Part 82 [Reserved]

Appendix D to Subpart A of Part 82—Harmonized Tariff Schedule Description of Products That May Contain Controlled Substances in Appendix A, Class I, Groups I and II

This appendix is based on information provided by the Ozone Secretariat of the United Nations Ozone Environment Programme.** The Appendix lists available U.S. harmonized tariff schedule codes identifying headings and subheadings for Annex D products that may contain controlled substances.

The Harmonized Tariff Schedule of the United States uses an enumeration system to identify products imported and exported to and from the U.S. This system relies on a four digit heading, a four digit subheading and additional two digit statistical suffix to characterize products. The United States uses the suffix for its own statistical records and analyses. This Appendix lists only headings and subheadings.

While some can be readily associated with harmonized system codes, many products cannot be tied to HS classifications unless their exact composition and the presentation are known. It should be noted that the specified HS classifications represent the most likely headings and subheadings which may contain substances controlled by the Montreal Protocol. The codes given should only be used as a starting point; further verification is needed to ascertain whether or not the products actually contain controlled substances.

Category 1. Automobile and Truck Air Conditioning Units (whether incorporated in vehicles or not)

There are no separate code numbers for air conditioning units specially used in automobiles and trucks. Although a code has been proposed for car air conditioners, it is not yet officially listed in the Harmonized Tariff Schedule (see category 2). The following codes apply to the vehicles potentially containing air conditioning units.

Heading/ Subheading	Article Description
8701.(10, 20, 30, 90)***	Tractors.
8702	Public-transport type passenger motor vehicles.
8702.10	With compression-ignition internal-combustion piston engine (diesel or semi-diesel).
8702.90	Other.
8703	Motor cars and other motor vehicles principally designed for the transport of persons (other than those of heading 8702), including station wagons and racing cars.
8703.10	Vehicles specially designed for traveling on snow; golf carts and similar vehicles; includes subheading 10.10 and 10.50.
8703.(21, 22, 23, 24)	Other vehicles, with spark-ignition internal combustion reciprocating engines.
8703.(31, 32, 33, 90)	Other vehicles, with compression-ignition internal combustion piston engine (diesel or semi-diesel).
8704	Motor vehicles for the transport of goods.
8704.10.(10, 50)	Dumpers designed for off-highway use.
8704.(21, 22, 23)	Other, with compression-ignition internal combustion piston engine (diesel or semi-diesel).
8704.(31, 32, 90)	Other, with compression-ignition internal combustion piston engine.
8705	Special purpose motor vehicles, other than those principally designed for the transport of persons or goods (for example, wreckers, mobile cranes, fire fighting vehicles, concrete mixers, road sweepers, spraying vehicles, mobile workshops, mobile radiological units).
8705.10	Crane lorries.
8705.20	Mobile drilling derricks.
8705.30	Fire fighting vehicles.
8705.90	Other.

***At this time vehicle air conditioning units are considered components of vehicles or are classified under the general category for air conditioning and refrigeration equipment. Vehicles containing air conditioners are therefore considered products containing controlled substances.

Category 2. Domestic and Commercial Refrigeration and Air Conditioning/Heat Pump Equipment

Domestic and commercial air conditioning and refrigeration equipment fall primarily under headings 8415 and 8418.

<i>Heading/ Subheading</i>	<i>Article Description</i>
8415	Air conditioning machines, comprising a motor-driven fan and elements for changing the temperature and humidity, including those machines in which the humidity cannot be separately regulated.
8415.20	Proposed code for air conditioning of a kind used for persons, in motor vehicles.
8415.10.00	A/C window or wall types, self-contained.
8415.81.00	Other, except parts, incorporating a refrigerating unit and a valve for reversal of the cooling/heat cycle.
8415.82.00	Other, incorporating a refrigerating unit— Self-contained machines and remote condenser type air conditioners (not for year-round use). Year-round units (for heating and cooling). Air Conditioning evaporator coils. Dehumidifiers. Other air conditioning machines incorporating a refrigerating unit.
8415.83	Automotive air conditioners.
8418	Refrigerators, freezers and other refrigerating or freezing equipment, electric or other; heat pumps, other than air conditioning machines of heading 8415; parts thereof.
8418.10.00	Combined refrigerator-freezers, fitted with separate external doors.
8418.21.00	Refrigerators, household type, Compression type.
8418.22.00	Absorption type, electrical.
8418.29.00	Other.
8418.30.00	Freezers of the chest type.
8418.40	Freezers of the upright type.
8418.50.0040	Other refrigerating or freezing chests, cabinets, display counters, showcases and similar refrigerating or freezing furniture.
8418.61.00	Other refrigerating or freezing equipment; heat pumps.
8418.69	Other— Icemaking machines. Drinking water coolers, self-contained. Soda fountain and beer dispensing equipment. Centrifugal liquid chilling refrigerating units. Absorption liquid chilling units. Reciprocating liquid chilling units. Other refrigerating or freezing equipment (household or other).
8479.89.10	Dehumidifiers (other than those under 8415 or 8424 classified as “machines and

***Heading/
Subheading***

Article Description

mechanical appliances having individual functions, not specified or included elsewhere”).

Category 3. Aerosol Products

An array of different products use controlled substances as aerosols and in aerosol applications. Not all aerosol applications use controlled substances, however. The codes given below represent the most likely classifications for products containing controlled substances. The product codes listed include **** :

- varnishes
- perfumes
- preparations for use on hair
- preparations for oral and dental hygiene
- shaving preparations
- personal deodorants, bath preparations
- prepared room deodorizers
- soaps
- lubricants
- polishes and creams
- explosives
- insecticides, fungicides, herbicides, disinfectants
- arms and ammunition
- household products such as footwear or leather polishes

- other miscellaneous products

Heading/ Subheading	Article Description
3208	Paints and varnishes ***** (including enamels and lacquers) based on synthetic polymers of chemically modified natural polymers, dispersed or dissolved in a non-aqueous medium.
3208.10	Based on polyesters.
3208.20	Based on acrylic or vinyl polymers.
3208.90	Other.
3209	Paints and varnishes (including enamels and lacquers) based on synthetic polymers or chemically modified natural polymers, dispersed or dissolved in an aqueous medium.
3209.10	Based on acrylic or vinyl polymers.
3209.90	Other.
3210.00	Other paints and varnishes (including enamels, lacquers and distempers) and prepared water pigments of a kind used for finishing leather.
3212.90	Dyes and other coloring matter put up in forms or packings for retail sale.
3303.00	Perfumes and toilet waters.
3304.30	Manicure or pedicure preparations.
3305.10	Shampoos.
3305.20	Preparations for permanent waving or straightening.
3305.30	Hair lacquers.
3305.90	Other hair preparations.
3306.10	Dentrifices.
3306.90	Other dental (this may include breath sprays).
3307.10	Pre-shave, shaving or after-shave preparations.
3307.20	Personal deodorants and antiperspirants.
3307.30	Perfumed bath salts and other bath preparations.
3307.49	Other (this may include preparations for perfuming or deodorizing rooms, including odoriferous preparations used during religious rites, whether or not perfumed or having disinfectant properties).
3307.90	Other (this may include depilatory products and other perfumery, cosmetic or toilet preparations, not elsewhere specified or included)
3403	Lubricating preparations (including cutting-oil preparations, bolt or nut release preparations, anti-rust or anti-corrosion preparations and mould release preparations, based on lubricants), and preparations of a kind used for the oil or grease treatment of textile materials, leather, fur skins or other materials, but excluding preparations containing, as basic constituents, 70 percent or more by weight of petroleum oils or of oils obtained from bituminous minerals.

***** Although paints do not generally use contain controlled substances, some varnishes use CFC 113 and 1,1,1, trichlorethane as solvents.

Heading/ Subheading	Article Description
3402	Organic surface-active agents (other than soap); surface-active preparations, washing preparations and cleaning operations, whether or not containing soap, other than those of 3401.
3402.20	Preparations put up for retail sale.
3402.19	Other preparations containing petroleum oils or oils obtained from bituminous minerals.
3403	Lubricating preparations consisting of mixtures containing silicone greases or oils, as the case may be.
2710.00	Preparations not elsewhere specified or included, containing by weight 70 percent or more of petroleum oils or of oils obtained from bituminous minerals, these oils being the basic constituents of the preparations.
3403.11	Lubricants containing petroleum oils or oils obtained from bituminous minerals used for preparations from the treatment of textile materials, leather, fur skins or other materials.
3403.19	Other preparations containing petroleum oils or oils obtained from bituminous minerals.
3405	Polishes and creams, for footwear, furniture, floors, coachwork, glass or metal, scouring pastes and powders and similar preparations excluding waxes of heading 3404.
3405.10	Polishes and creams for footwear or leather.
3405.20	Polishes for wooden furniture, floors or other woodwork.
36	Explosives.
3808	Insecticides, rodenticides, fungicides, herbicides, anti-sprouting products and plant-growth regulators, disinfectants and similar products, put up in forms or packings for retail sale or as preparations or articles (for example, sulphur-treated bands, wicks and candles, and fly papers).
3808.10	Insecticides.
3808.20	Fungicides.
3808.30	Herbicides, anti-sprouting products and plant growth regulators.
3808.40	Disinfectants.
3808.90	Other insecticides, fungicides.
3809.10	Finishing agents, dye carriers to accelerate the dyeing or fixing of dye-stuffs and other products and preparations (for example, dressings and mordants) of a kind used in the textile, paper, leather or like industries, not elsewhere specified or included, with a basis of amylaceous substances.
3814	Organic composite solvents and thinners (not elsewhere specified or included) and the prepared paint or varnish removers.
3910	Silicones in primary forms.
9304	Other arms (for example, spring, air or gas guns and pistols, truncheons), excluding
***** Although paints do not generally use contain controlled substances, some varnishes use CFC 113 and 1,1,1, trichlorethane as solvents.	

Heading/ Subheading	Article Description
	those of heading No. 93.07. Thus, aerosol spray cans containing tear gas may be classified under this subheading.
0404.90	Products consisting of natural milk constituents, whether or not containing added sugar or other sweetening matter, not elsewhere specified or included.
1517.90	Edible mixtures or preparations of animal or vegetable fats or oils or of fractions of different fats or oils of this chapter, other than edible fats or oils or their fractions of heading No. 15.16.
2106.90	Food preparations not elsewhere specified or included.
<i>***** Although paints do not generally use contain controlled substances, some varnishes use CFC 113 and 1,1,1,trichlorethane as solvents.</i>	

Category 4. Portable Fire Extinguishers

Heading/ Subheading	Article Description
8424	Mechanical appliances (whether or not hand operated) for projecting, dispersing, or spraying liquids or powders; fire extinguishers whether or not charged, spray guns and similar appliances; steam or sand blasting machines and similar jet projecting machines.
8424.10	Fire extinguishers, whether or not charged.

Category 5. Insulation Boards, Panels and Pipe Covers

These goods have to be classified according to their composition and presentation. For example, if the insulation materials are made of polyurethane, polystyrene, polyolefin and phenolic plastics, then they may be classified Chapter 39, for "Plastics and articles thereof". The exact description of the products at issue is necessary before a classification can be given. *****

Heading/ Subheading	Article Description
3917.21 to 3917.39	Tubes, pipes and hoses of plastics.
3920.10 to 3920.99	Plates, sheets, film, foil and strip made of plastics, non-cellular and not reinforced, laminated, supported or similarly combined with other materials.

Heading/ Subheading	Article Description
3921.11 to 3921.90	Other plates, sheets, film, foil and strip, made of plastics.
3925.90	Builders' ware made of plastics, not elsewhere specified or included.
3926.90	Articles made of plastics, not elsewhere specified or included.

Category 6. Pre-Polymers

According to the Explanatory Notes to the Harmonized Commodity Description and Coding System, "prepolymers are products which are characterized by some repetition of monomer units although they may contain unreacted monomers. Prepolymers are not normally used as such but are intended to be transformed into higher molecular weight polymers by further polymerization. Therefore the term does not cover finished products, such as diisobutylenes or mixed polyethylene glycols with very low molecular weight. Examples are epoxides based with epichlorohydrin, and polymeric isocyanates."

Heading/Subheading	Article Description
3901	Pre-polymers based on ethylene (in primary forms).
3902	Pre-polymers based on propylene or other olefins (in primary forms).
3903, 3907, 3909	Pre-polymers based on styrene (in primary forms), epoxide and phenols.

** "A Note Regarding the Harmonized System Code Numbers for the Products Listed in Annex D." Adopted by Decision IV/15 paragraph 3, of the Fourth Meeting of the Parties in Copenhagen, 23-25 November, 1992.

**** Other categories of products that may contain controlled substances are listed below. EPA is currently working to match them with appropriate codes. They include: coatings and electronic equipment (e.g., electrical motors), coatings or cleaning fluids for aircraft maintenance, mold release agents (e.g. for production of plastic or elastomeric materials), water and oil repellant (potentially under HS 3402), spray undercoats (potentially under "paints and varnishes"), spot removers, brake cleaners, safety sprays (e.g., mace cans), animal repellant, noise horns (e.g., for use on boats), weld inspection developers, freezants, gum removers, intruder alarms, tire inflators, dusters (for electronic and non-electronic applications), spray shoe polish, and suede protectors.

***** This category may include insulating board for building panels and windows and doors. It also includes rigid appliance insulation for pipes, tanks, trucks, trailers, containers, train cars & ships, refrigerators, freezers, beverage vending machines, bulk beverage dispensers, water coolers and heaters and ice machines.

Appendix E to Subpart A of Part 82—Article 5 Parties

Parties operating under Article 5 of the Montreal Protocol as of March 26, 2014 are listed below. An updated list can be located at: http://ozone.unep.org/new_site/en/parties_under_article5_para1.php.

Afghanistan, Albania, Algeria, Angola, Antigua & Barbuda, Argentina, Armenia, Bahamas, Bahrain, Bangladesh, Barbados, Belize, Benin, Bhutan, Bolivia (Plurinational State of), Bosnia and Herzegovina, Botswana, Brazil, Brunei Darussalam, Burkina Faso, Burundi, Cambodia, Cameroon, Cape Verde, Central African Republic, Chad, Chile, China, Colombia, Comoros, Congo, Congo (Democratic Republic of), Cook Islands, Cost Rica, Côte d'Ivoire, Cuba, Djibouti, Dominica, Dominican Republic, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Ethiopia, Fiji, Gabon, Gambia, Georgia, Ghana, Grenada, Guatemala, Guinea, Guinea Bissau, Guyana, Haiti, Honduras, India, Indonesia, Iran (Islamic Republic of), Iraq, Jamaica, Jordan, Kenya, Kiribati, Korea (Democratic People's Republic of), Korea (Republic of), Kuwait, Kyrgyzstan, Lao (People's Democratic Republic), Lebanon, Lesotho, Liberia, Libya, Madagascar, Malawi, Malaysia, Maldives, Mali, Marshall Islands Mauritania, Mauritius, Mexico, Micronesia (Federal States of), Moldova (Republic of), Mongolia, Montenegro, Morocco, Mozambique, Myanmar, Namibia, Nauru, Nepal, Nicaragua, Niger, Nigeria, Niue, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Qatar, Rwanda, Saint Kitts and Nevis, Saint Lucia, Saint Vincent & the Grenadines, Samoa, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, Seychelles, Sierra Leone, Singapore, Solomon Islands, Somalia, South Africa, South Sudan*, Sri Lanka, Sudan, Suriname, Swaziland, Syrian Arab Republic, Tanzania (United Republic of), Thailand, The Former Yugoslav Republic of Macedonia, Timor-Leste, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, United Arab Emirates, Uruguay, Vanuatu, Venezuela (Bolivarian Republic of), Viet Nam, Yemen, Zambia, Zimbabwe.

* temporarily categorized as Article 5 pending submission of ODS consumption data

[79 FR 16687, Mar. 26, 2014]

Appendix F to Subpart A of Part 82—Listing of Ozone-Depleting Chemicals

Controlled substance	ODP	AT L	CLP	BLP
A. Class I:				
1. Group I:				
CFCl ₃ -Trichlorofluoromethane (CFC-11)	1.0	60.0	1.0	0.00
CF ₂ Cl ₂ -Dichlorodifluoromethane (CFC-12)	1.0	120.0	1.5	0.00
C ₂ F ₃ Cl ₃ -Trichlorotrifluoroethane (CFC-113)	0.8	90.0	1.11	0.00
C ₂ F ₄ Cl ₂ -Dichlorotetrafluoroethane (CFC-114)	1.0	200.00	1.8	0.00
C ₂ F ₅ Cl-Monochloropentafluoroethane (CFC-115)	0.6	400.0	2.0	0.00
All isomers of the above chemicals		[Reserved]		
2. Group II:				
CF ₂ ClBr-Bromochlorodifluoromethane (Halon-1211)	3.0	12	0.06	0.13
		-18	-.08	-.03
CF ₃ Br-Bromotrifluoromethane (Halon-1301)	10.0	72	0.00	1.00
		-107		
C ₂ F ₄ Br ₂ -Dibromotetrafluoroethane (Halon-2402)	6.0	23	0.00	0.30
		-28		-.37
All isomers of the above chemicals		[Reserved]		
3. Group III:				

Controlled substance	ODP	AT L	CLP	BLP
CF ₃ Cl-Chlorotrifluoromethane (CFC-13)	1.0 -250	120 -1.83	0.88	0.00
C ₂ FCl ₅ - (CFC-111)	1.0 -90	60 -1.56	1.04	0.00
C ₂ F ₂ Cl ₄ - (CFC-112)	1.0 -90	60 -1.35	0.90	0.00
C ₃ FCl ₇ - (CFC-211)	1.0 -500	100 -8.81	1.76	0.00
C ₃ F ₂ Cl ₆ - (CFC-212)	1.0 -500	100 -7.98	1.60	0.00
C ₃ F ₃ Cl ₅ - (CFC-213)	1.0 -500	100 -7.06	1.41	0.00
C ₃ F ₄ Cl ₄ - (CFC-214)	1.0 -500	100 -6.01	1.20	0.00
C ₃ F ₅ Cl ₃ - (CFC-215)	1.0 -500	100 -4.82	0.96	0.00
C ₃ F ₆ Cl ₂ - (CFC-216)	1.0 -500	100 -3.45	0.69	0.00
C ₃ F ₇ Cl- (CFC-217)	1.0 -500	100 -1.87	0.37	0.00
All isomers of the above chemicals		[Reserved]		
4. Group IV:				
CCl ₄ -Carbon Tetrachloride	1.1	50.0	1.0	0.00
5. Group V:				
C ₂ H ₃ Cl ₃ -1,1,1 Trichloroethane (Methyl chloroform)	0.1	6.3	0.11	0.00
All isomers of the above chemical except 1,1,2-trichloroethane		[Reserved]		
6. Group VI:				
CH ₃ Br-Bromomethane (Methyl Bromide)	0.7		[Reserved]	
7. Group VII:				
CHFBr ₂ -	1.00		[Reserved]	
CHF ₂ Br-(HBFC-22B1)	0.74		[Reserved]	
CH ₂ FBr	0.73		[Reserved]	
C ₂ HFBr ₄	0.3-0.8		[Reserved]	
C ₂ HF ₂ Br ₃	0.5-1.8		[Reserved]	
C ₂ HF ₃ Br ₂	0.4-16		[Reserved]	
C ₂ HF ₄ Br	0.7-1.2		[Reserved]	
C ₂ H ₂ FBr ₃	0.1-1.1		[Reserved]	
C ₂ H ₂ F ₂ Br ₂	0.2-1.5		[Reserved]	

Controlled substance	ODP	AT L	CLP	BLP
C ₂ H ₂ F ₃ Br	0.7-1.6		[Reserved]	
C ₂ H ₃ FBr ₂	0.1-1.7		[Reserved]	
C ₂ H ₃ F ₂ Br	0.2-1.1		[Reserved]	
C ₂ H ₄ FBr	0.07-0.1		[Reserved]	
C ₃ HFBr ₆	0.3-1.5		[Reserved]	
C ₃ HF ₂ Br ₅	0.2-1.9		[Reserved]	
C ₃ HF ₃ Br ₄	0.3-1.8		[Reserved]	
C ₃ HF ₄ Br ₃	0.5-2.2		[Reserved]	
C ₃ HF ₅ Br ₂	0.9-2.0		[Reserved]	
C ₃ HF ₆ Br	0.7-3.3		[Reserved]	
C ₃ H ₂ FBr ₅	0.1-1.9		[Reserved]	
C ₃ H ₂ F ₂ Br ₄	0.2-2.1		[Reserved]	
C ₃ H ₂ F ₃ Br ₃	0.2-5.6		[Reserved]	
C ₃ H ₂ F ₄ Br ₂	0.3-7.5		[Reserved]	
C ₃ H ₂ F ₅ Br	0.9-1.4		[Reserved]	
C ₃ H ₃ FBr ₄	0.08-1.9		[Reserved]	
C ₃ H ₃ F ₂ Br ₃	0.1-3.1		[Reserved]	
C ₃ H ₃ F ₃ Br ₂	0.1-2.5		[Reserved]	
C ₃ H ₃ F ₄ Br	0.3-4.4		[Reserved]	
C ₃ H ₄ FBr ₃	0.03-0.3		[Reserved]	
C ₃ H ₄ F ₂ Br ₂	0.1-1.0		[Reserved]	
C ₃ H ₄ F ₃ Br	0.07-0.8		[Reserved]	
C ₃ H ₅ FBr ₂	0.04-0.4		[Reserved]	
C ₃ H ₅ F ₂ Br	0.07-0.8		[Reserved]	
C ₃ H ₆ FB	0.02-0.7		[Reserved]	
8. Group VIII:				
CH ₂ BrCl (Chlorobromomethane)	0.12		[Reserved]	
B. Class II:				
CHFCI ₂ -Dichlorofluoromethane (HCFC-21)	[Reserved]	2.1	0.03	0.00
CHF ₂ Cl-Chlorodifluoromethane (HCFC-22)	0.05	15.3	0.14	0.00
CH ₂ FCl-Chlorofluoromethane (HCFC-31)	[Reserved]	1.44	0.02	0.00
C ₂ HFCl ₄ - (HCFC-121)	[Reserved]	0.6	0.01	0.00
C ₂ HF ₂ Cl ₃ - (HCFC-122)	[Reserved]	1.4	0.02	0.00
C ₂ HF ₃ Cl ₂ - (HCFC-123)	0.02	1.6	0.016	0.00
C ₂ HF ₄ Cl- (HCFC-124)	0.02	6.6	0.04	0.00
C ₂ H ₂ FCl ₃ - (HCFC-131)	[Reserved]	4.0	0.06	0.00
C ₂ H ₂ F ₂ Cl ₂ - (HCFC-132b)	[Reserved]	4.2	0.05	0.00
C ₂ H ₂ F ₃ Cl- (HCFC-133a)	[Reserved]	4.8	0.03	0.00
C ₂ H ₃ FCl ₂ - (HCFC-141b)	0.12	7.8	0.10	0.00

Controlled substance	ODP	AT L	CLP	BLP
C ₂ H ₃ F ₂ Cl- (HCFC-142b)	0.06	19.1	0.14	0.00
C ₃ HFCl ₆ - (HCFC-221)	[Reserved]			0.00
C ₃ HF ₂ Cl ₅ - (HCFC-222)	[Reserved]			0.00
C ₃ HF ₃ Cl ₄ - (HCFC-223)	[Reserved]			0.00
C ₃ HF ₄ Cl ₃ - (HCFC-224)	[Reserved]			0.00
C ₃ HF ₅ Cl ₂ - (HCFC-225ca)	[Reserved]	1.5	0.01	0.00
		-1.7		
(HCFC-225cb)	[Reserved]	5.1	0.04	0.00
C ₃ HF ₆ Cl- (HCFC-226)	[Reserved]			0.00
C ₃ H ₂ FCl ₅ - (HCFC-231)	[Reserved]			0.00
C ₃ H ₂ F ₂ 4- (HCFC-232)	[Reserved]			0.00
C ₃ H ₂ F ₃ Cl ₃ - (HCFC-233)	[Reserved]			0.00
C ₃ H ₂ F ₄ Cl ₂ - (HCFC-234)	[Reserved]			0.00
C ₃ H ₂ F ₅ Cl- (HCFC-235)	[Reserved]			0.00
C ₃ H ₃ FCl ₄ - (HCFC-241)	[Reserved]			0.00
C ₃ H ₃ F ₂ Cl ₃ - (HCFC-242)	[Reserved]			0.00
C ₃ H ₃ F ₃ Cl ₂ - (HCFC-243)	[Reserved]			0.00
C ₃ H ₃ F ₄ Cl- (HCFC-244)	[Reserved]			0.00
C ₃ H ₄ FCl ₃ - (HCFC-251)	[Reserved]			0.00
C ₃ H ₄ F ₂ Cl ₂ - (HCFC-252)	[Reserved]			0.00
C ₃ H ₄ F ₃ Cl- (HCFC-253)	[Reserved]			0.00
C ₃ H ₅ FCl ₂ - (HCFC-261)	[Reserved]			0.00
C ₂ H ₅ F ₂ Cl- (HCFC-262)	[Reserved]			0.00
C ₃ H ₆ FCl- (HCFC-271)	[Reserved]			0.00
All isomers of the above chemicals		[Reserved]		

[60 FR 24986, May 10, 1995, as amended at 68 FR 42894, July 18, 2003]

Appendix G to Subpart A of Part 82—UNEP Recommendations for Conditions Applied to Exemption for Essential Laboratory and Analytical Uses

1. Essential laboratory and analytical uses are identified at this time to include equipment calibration; use as extraction solvents, diluents, or carriers for chemical analysis; biochemical research; inert solvents for chemical reactions, as a carrier or laboratory chemical and other critical analytical and laboratory purposes. Pursuant to Decision XI/15 of the Parties to the Montreal Protocol, effective January 1, 2002 the following uses of class I controlled substances are not considered essential under the global laboratory exemption:
 - a. Testing of oil and grease and total petroleum hydrocarbons in water;
 - b. Testing of tar in road-paving materials; and

c. Forensic finger printing.

Production for essential laboratory and analytical purposes is authorized provided that these laboratory and analytical chemicals shall contain only controlled substances manufactured to the following purities:

CTC (reagent grade)—99.5

1 ,1,1,-trichloroethane—99.5

CFC-11—99.5

CFC-13—99.5

CFC-12—99.5

CFC-113—99.5

CFC-114—99.5

Other w/ Boiling P>20 degrees C—99.5

Other w/ Boiling P<20 degrees C—99.0

d. Testing of organic matter in coal.

2. These pure, controlled substances can be subsequently mixed by manufacturers, agents or distributors with other chemicals controlled or not controlled by the Montreal Protocol as is customary for laboratory and analytical uses.
3. These high purity substances and mixtures containing controlled substances shall be supplied only in re-closable containers or high pressure cylinders smaller than three litres or in 10 millilitre or smaller glass ampoules, marked clearly as substances that deplete the ozone layer, restricted to laboratory use and analytical purposes and specifying that used or surplus substances should be collected and recycled, if practical. The material should be destroyed if recycling is not practical.
4. Parties shall annually report for each controlled substance produced: the purity; the quantity; the application, specific test standard, or procedure requiring its uses; and the status of efforts to eliminate its use in each application. Parties shall also submit copies of published instructions, standards, specifications, and regulations requiring the use of the controlled substance.
5. Pursuant to Decision XVIII/15 of the Parties to the Montreal Protocol, methyl bromide is exempted for the following approved essential laboratory and analytical purposes listed in following items (a) through (d). Use of methyl bromide for field trials is not an approved use under the global laboratory and analytical use exemption. The provisions of Appendix G, paragraphs (1), (2), (3), and (4), regarding purity, mixing, container, and reporting requirements for other exempt ODSs, also apply to the use of methyl bromide under this exemption.
 - a. Methyl bromide is exempted as an approved essential laboratory and analytical use as a reference or standard to calibrate equipment which uses methyl bromide, to monitor methyl bromide emission levels, or to determine methyl bromide residue levels in goods, plants and commodities;

- b. Methyl bromide is exempted as an approved essential laboratory and analytical when used in laboratory toxicological studies;
- c. Methyl bromide is exempted as an approved essential laboratory and analytical use to compare the efficacy of methyl bromide and its alternatives inside a laboratory; and
- d. Methyl bromide is exempted as an approved essential laboratory and analytical use as a laboratory agent which is destroyed in a chemical reaction in the manner of feedstock.

[60 FR 24986, May 10, 1995, as amended at 67 FR 6362, Feb. 11, 2002; 72 FR 73269, Dec. 27, 2007]

Appendix H to Subpart A of Part 82—Clean Air Act Amendments of 1990 Phaseout Schedule for Production of Ozone-Depleting Substances

Date	Carbon tetrachloride (percent)	Methyl chloroform (percent)	Other class substances (percent)
1994	70	85	65
1995	15	70	50
1996	15	50	40
1997	15	50	15
1998	15	50	15
1999	15	50	15
2000		20	
2001		20	

Appendix I to Subpart A of Part 82—Global Warming Potentials (Mass Basis), Referenced to the Absolute GWP for the Adopted Carbon Cycle Model CO₂ Decay Response and Future CO₂ Atmospheric Concentrations Held Constant at Current Levels. (Only Direct Effects Are Considered.)

Species (chemical)	Chemical formula	Global warming potential (time horizon)		
		20 years	100 years	500 years
CFC-11	CFCl ₃	5000	4000	1400
CFC-12	CF ₂ Cl ₂	7900	8500	4200
CFC-13	CClF ₃	8100	11700	13600
CFC-113	C ₂ F ₃ Cl ₃	5000	5000	2300

AUnited Nations Environment Programme (UNEP), February 1995, Scientific Assessment of Ozone Depletion: 1994, Chapter 13, "Ozone Depleting Potentials, Global Warming Potentials and Future Chlorine/Bromine Loading," and do not reflect review of scientific documents published after that date.

Species (chemical)	Chemical formula	Global warming potential (time horizon)		
		20 years	100 years	500 years
CFC-114	C ₂ F ₄ Cl ₂	6900	9300	8300
CFC-115	C ₂ F ₅ Cl	6200	9300	13000
H-1301	CF ₃ Br	6200	5600	2200
Carbon Tet	CCl ₄	2000	1400	500
Methyl Chl	CH ₃ CCl ₃	360	110	35
HCFC-22	CF ₂ HCl	4300	1700	520
HCFC-141b	C ₂ FH ₃ Cl ₂	1800	630	200
HCFC-142b	C ₂ F ₂ H ₃ Cl	4200	2000	630
HCFC-123	C ₂ F ₃ HCl ₂	300	93	29
HCFC-124	C ₂ F ₄ HCl	1500	480	150
HCFC-225ca	C ₃ F ₅ HCl ₂	550	170	52
HCFC-225cb	C ₃ F ₅ HCl ₂	1700	530	170

AUnited Nations Environment Programme (UNEP), February 1995, Scientific Assessment of Ozone Depletion: 1994, Chapter 13, "Ozone Depleting Potentials, Global Warming Potentials and Future Chlorine/Bromine Loading," and do not reflect review of scientific documents published after that date.

[61 FR 1285, Jan. 19, 1996]

Appendix J to Subpart A of Part 82—Parties to the Montreal Protocol Classied Under Article 5(1) That Have Banned the Import of Controlled Products That Rely on Class I Controlled Substances for Their Continuing Functioning [Reserved]

Appendix K to Subpart A of Part 82—Commodity Codes From the Harmonized Tariff Schedule for Controlled Substances and Used Controlled Substances

Description of commodity or chemical	Commodity code from harmonized tariff schedule
<i>Class II:</i>	
HCFC-22 (Chlorodifluoromethane)	2903.71.0000
HCFC-123 (Dichlorotrifluoroethane)	2903.72.0020
HCFC-124 (Monochlorotetrafluoroethane)	2903.79.1000
HCFC-141b (Dichlorofluoroethane)	2903.73.0000
HCFC-142b (Chlorodifluoroethane)	2903.74.0000
HCFC-225ca, HCFC-225cb (Dichloropentafluoropropanes)	2903.75.0000
HCFC-21, HCFC-31, HCFC-133, and other HCFCs	2903.79.9070
HCFC Mixtures (R-401A, R-402A, etc.)	3824.74.0000

Description of commodity or chemical	Commodity code from harmonized tariff schedule
<i>Class I:</i>	
CFC-11 (Trichlorofluoromethane)	2903.77.0010
CFC-12 (Dichlorodifluoromethane)	2903.77.0050
CFC-113 (Trichlorotrifluoroethane)	2903.77.0020
CFC-114 (Dichlorotetrafluoroethane)	2903.77.0030
CFC-115 (Monochloropentafluoroethane)	2903.77.0040
CFC-13, CFC-111, CFC-112, CFC-211, CFC-212, CFC-213, CFC-214, CFC-215, CFC-216, CFC-217, and other CFCs	2903.77.0080
CFC Mixtures (R-500, R-502, etc.)	3824.71.0100
Carbon Tetrachloride	2903.14.0000
Halon 1301 (Bromotrifluoromethane)	2903.76.0010
Halon, other	2903.76.0050
Methyl Bromide	2903.39.1520
Methyl Chloroform	2903.19.6010

[85 FR 15299, Mar. 17, 2020]

Appendix L to Subpart A of Part 82—Approved Critical Uses and Limiting Critical Conditions for Those Uses

Column A	Column B	Column C
Approved Critical Uses	Approved Critical User, Location of Use	Limiting Critical Conditions that exist, or that the approved critical user reasonably expects could arise without methyl bromide fumigation:
PRE-PLANT USES		
Strawberry Fruit	California growers in 2015 and 2016.	Moderate to severe black root rot or crown rot Moderate to severe yellow or purple nutsedge infestation Moderate to severe nematode infestation Local township limits prohibiting 1,3-dichloropropene
POST-HARVEST USES		
Dry Cured	Members of the National Country Ham Association	Red legged ham beetle

Column A	Column B	Column C
Pork Products	and the American Association of Meat Processors, Nahunta Pork Center (North Carolina), and Gwaltney of Smithfield Inc.	infestation Cheese/ham skipper infestation Dermestid beetle infestation Ham mite infestation

[80 FR 61992, Oct. 15, 2015]

This content is from the eCFR and is authoritative but unofficial.

Title 40 —Protection of Environment
Chapter I —Environmental Protection Agency
Subchapter C —Air Programs
Part 82 —Protection of Stratospheric Ozone

Authority: 42 U.S.C. 7414, 7601, 7671-7671q.

Source: 57 FR 33787, July 30, 1992, unless otherwise noted.

Subpart E The Labeling of Products Using Ozone-Depleting Substances

- § 82.100 Purpose.
- § 82.102 Applicability.
- § 82.104 Definitions.
- § 82.106 Warning statement requirements.
- § 82.108 Placement of warning statement.
- § 82.110 Form of label bearing warning statement.
- § 82.112 Removal of label bearing warning statement.
- § 82.114 Compliance by manufacturers and importers with requirements for labeling of containers of controlled substances, or products containing controlled substances.
- § 82.116 Compliance by manufacturers or importers incorporating products manufactured with controlled substances.
- § 82.118 Compliance by wholesalers, distributors and retailers.
- § 82.120 Petitions.
- § 82.122 Certification, recordkeeping, and notice requirements.
- § 82.124 Prohibitions.

Subpart E—The Labeling of Products Using Ozone-Depleting Substances

Source: 60 FR 4020, Jan. 19, 1995, unless otherwise noted.

§ 82.100 Purpose.

The purpose of this subpart is to require warning statements on containers of, and products containing or manufactured with, certain ozone-depleting substances, pursuant to section 611 of the Clean Air Act, as amended.

§ 82.102 Applicability.

- (a) In the case of substances designated as class I or class II substances as of February 11, 1993, the applicable date of the requirements in this paragraph (a) is May 15, 1993. In the case of any substance designated as a class I or class II substance after February 11, 1993, the applicable date of the requirements in this paragraph (a) is one year after the designation of such substance as a class I or

class II substance unless otherwise specified in the designation. On the applicable date indicated in this paragraph (a), the requirements of this subpart shall apply to the following containers and products except as exempted under paragraph (c) of this section:

- (1) All containers in which a class I or class II substance is stored or transported.
 - (2) All products containing a class I substance.
 - (3) All products directly manufactured with a process that uses a class I substance, unless otherwise exempted by this subpart or, unless the Administrator determines for a particular product that there are no substitute products or manufacturing processes for such product that do not rely on the use of a class I substance, that reduce overall risk to human health and the environment, and that are currently or potentially available. If the Administrator makes such a determination for a particular product, then the requirements of this subpart are effective for such product no later than January 1, 2015.
- (b) Applicable January 1, 2015 in any case, or one year after any determination between May 15, 1993 and January 1, 2015, by the Administrator for a particular product that there are substitute products or manufacturing processes for such product that do not rely on the use of a class I or class II substance, that reduce the overall risk to human health and the environment, and that are currently or potentially available, the requirements of this subpart shall apply to the following:
- (1) All products containing a class II substance.
 - (2) All products manufactured with a process that uses a class II substance.
- (c) The requirements of this subpart shall not apply to products manufactured prior to May 15, 1993, provided that the manufacturer submits documentation to EPA upon request showing that the product was manufactured prior to that date.

§ 82.104 Definitions.

- (a) **Class I substance** means any substance designated as class I in 40 CFR part 82, appendix A to subpart A, including chlorofluorocarbons, halons, carbon tetrachloride and methyl chloroform and any other substance so designated by the Agency at a later date.
- (b) **Class II substance** means any substance designated as class II in 40 CFR part 82, appendix A to subpart A, including hydrochlorofluorocarbons and any other substance so designated by the Agency at a later date.
- (c) **Completely destroy** means to cause the destruction of a controlled substance by one of the destruction processes approved by the Parties and listed in § 82.3 at a demonstrable destruction efficiency of 98 percent or more or a greater destruction efficiency if required under other applicable Federal regulations.
- (d) **Consumer** means a commercial or non-commercial purchaser of a product or container that has been introduced into interstate commerce.
- (e) **Container** means the immediate vessel in which a controlled substance is stored or transported.
- (f) **Container containing** means a container that physically holds a controlled substance within its structure that is intended to be transferred to another container, vessel or piece of equipment in order to realize its intended use.
- (g) **Controlled substance** means a class I or class II ozone-depleting substance.

- (h) **Destruction** means the expiration of a controlled substance to the destruction efficiency actually achieved, unless considered completely destroyed as defined in this section. Such destruction might result in a commercially useful end product but such usefulness would be secondary to the act of destruction. Destruction must be achieved using one of the controlled processes approved by the Parties and listed in the definition of *destruction* in § 82.3.
- (i) **Distributor** means a person to whom a product is delivered or sold for purposes of subsequent resale, delivery or export.
- (j) **Export** means the transport of virgin, used, or recycled class I or class II substances or products manufactured or containing class I or class II substances from inside the United States or its territories to persons outside the United States or its territories, excluding United States military bases and ships for on-board use.
- (k) **Exporter** means the person who contracts to sell class I or class II substances or products manufactured with or containing class I or class II substances for export or transfers such substances or products to his affiliate in another country.
- (l) **Import** means to land on, bring into, or introduce into, or attempt to land on, bring into, or introduce into any place subject to the jurisdiction of the United States whether or not such landing, bringing, or introduction constitutes an importation within the meaning of the customs laws of the United States, with the exception of temporary off-loading of products manufactured with or containers containing class I or class II substances from a ship are used for servicing of that ship.
- (m) **Importer** means any person who imports a controlled substance, a product containing a controlled substance, a product manufactured with a controlled substance, or any other chemical substance (including a chemical substance shipped as part of a mixture or article), into the United States. "Importer" includes the person primarily liable for the payment of any duties on the merchandise or an authorized agent acting on his or her behalf. The term also includes, as appropriate:
 - (1) The consignee;
 - (2) The importer of record;
 - (3) The actual owner if an actual owner's declaration and superseding bond has been filed; or
 - (4) The transferee, if the right to draw merchandise in a bonded warehouse has been transferred.
- (n) **Interstate commerce** means the distribution or transportation of any product between one state, territory, possession or the District of Columbia, and another state, territory, possession or the District of Columbia, or the sale, use or manufacture of any product in more than one state, territory, possession or District of Columbia. The entry points for which a product is introduced into interstate commerce are the release of a product from the facility in which the product was manufactured, the entry into a warehouse from which the domestic manufacturer releases the product for sale or distribution, and at the site of United States Customs clearance.
- (o) **Manufactured with a controlled substance** means that the manufacturer of the product itself used a controlled substance directly in the product's manufacturing, but the product itself does not contain more than trace quantities of the controlled substance at the point of introduction into interstate commerce. The following situations are excluded from the meaning of the phrase "manufactured with" a controlled substance:
 - (1) Where a product has not had physical contact with the controlled substance;

- (2) Where the manufacturing equipment or the product has had physical contact with a controlled substance in an intermittent manner, not as a routine part of the direct manufacturing process;
 - (3) Where the controlled substance has been transformed, except for trace quantities; or
 - (4) Where the controlled substance has been completely destroyed.
- (p) **Potentially available** means that adequate information exists to make a determination that the substitute is technologically feasible, environmentally acceptable and economically viable.
- (q) **Principal display panel (PDP)** means the entire portion of the surface of a product, container or its outer packaging that is most likely to be displayed, shown, presented, or examined under customary conditions of retail sale. The area of the PDP is not limited to the portion of the surface covered with existing labeling; rather it includes the entire surface, excluding flanges, shoulders, handles, or necks.
- (r) **Product** means an item or category of items manufactured from raw or recycled materials, or other products, which is used to perform a function or task.
- (s) **Product containing** means a product including, but not limited to, containers, vessels, or pieces of equipment, that physically holds a controlled substance at the point of sale to the ultimate consumer which remains within the product.
- (t) **Promotional printed material** means any informational or advertising material (including, but not limited to, written advertisements, brochures, circulars, desk references and fact sheets) that is prepared by the manufacturer for display or promotion concerning a product or container, and that does not accompany the product to the consumer.
- (u) **Retailer** means a person to whom a product is delivered or sold, if such delivery or sale is for purposes of sale or distribution in commerce to consumers who buy such product for purposes other than resale.
- (v) **Spare parts** means those parts that are supplied by a manufacturer to another manufacturer, distributor, or retailer, for purposes of replacing similar parts with such parts in the repair of a product.
- (w) **Supplemental printed material** means any informational material (including, but not limited to, package inserts, fact sheets, invoices, material safety data sheets, procurement and specification sheets, or other material) which accompanies a product or container to the consumer at the time of purchase.
- (x) **Transform** means to use and entirely consume a class I or class II substance, except for trace quantities, by changing it into one or more substances not subject to this subpart in the manufacturing process of a product or chemical.
- (y) **Type size** means the actual height of the printed image of each capital letter as it appears on a label.
- (z) **Ultimate consumer** means the first commercial or non-commercial purchaser of a container or product that is not intended for re-introduction into interstate commerce as a final product or as part of another product.
- (aa) **Warning label** means the warning statement required by section 611 of the Act. The term warning statement shall be synonymous with warning label for purposes of this subpart.
- (bb) **Waste** means, for purposes of this subpart, items or substances that are discarded with the intent that such items or substances will serve no further useful purpose.
- (cc) **Wholesaler** means a person to whom a product is delivered or sold, if such delivery or sale is for purposes of sale or distribution to retailers who buy such product for purposes of resale.

[60 FR 4020, Jan. 19, 1995, as amended at 81 FR 6768, Feb. 9, 2016; 85 FR 15300, Mar. 17, 2020]

§ 82.106 Warning statement requirements.

(a) *Required warning statements.*

- (1) Unless otherwise exempted by this subpart, each container or product identified in § 82.102(a) or (b) shall bear the following warning statement, meeting the requirements of this subpart for placement and form:

WARNING: Contains [or Manufactured with, if applicable] *[insert name of substance]*, a substance which harms public health and environment by destroying ozone in the upper atmosphere.

- (2) Each container of fire suppression agent containing HCFC-123 produced or imported on or after January 1, 2020 shall bear the following warning statement, meeting the requirements of this subpart for placement and form:

WARNING: Contains *[insert name of substance]*, a substance which harms public health and environment by destroying ozone in the upper atmosphere. Use Only for Recharge of Equipment Manufactured before January 1, 2020.

- (3) Each container of fire suppression agent containing reclaimed HCFC-123 or HCFC-123 that was imported prior to January 1, 2020, shall bear the following warning statement, meeting the requirements of this subpart for placement and form:

WARNING: Contains *[insert name of substance]*, a substance which harms public health and environment by destroying ozone in the upper atmosphere. For use in any equipment.

(b) *Exemptions from warning label requirement.* The following products need not bear a warning label:

- (1) Products containing trace quantities of a controlled substance remaining as a residue or impurity due to a chemical reaction, and where the controlled substance serves no useful purpose in or for the product itself. However, if such product was manufactured using the controlled substance, the product is required to be labeled as a "product manufactured with" the controlled substance, unless otherwise exempted;
- (2) Containers containing a controlled substance in which trace quantities of that controlled substance remain as a residue or impurity;
- (3) Waste containing controlled substances or blends of controlled substances bound for discard;
- (4) Products manufactured using methyl chloroform or CFC-113 by persons who can demonstrate and certify a 95% reduction in overall usage from their 1990 calendar year usage of methyl chloroform or CFC-113 as solvents during a twelve (12) month period ending within sixty (60) days of such certification or during the most recently completed calendar year. In calculating such reduction, persons may subtract from quantities used those quantities for which they possess accessible data that establishes the amount of methyl chloroform or CFC-113 transformed. Such subtraction must be performed for both the applicable twelve month period and the 1990 calendar year. If at any time future usage exceeds the 95% reduction, all products manufactured with methyl chloroform or CFC-113 as solvents by that person must be labeled immediately. No person may qualify for this exemption after May 15, 1994;

- (5) Products intended only for export outside of the United States shall not be considered “products introduced into interstate commerce” provided such products are clearly designated as intended for export only;
 - (6) Products that are otherwise not subject to the requirements of this subpart that are being repaired, using a process that uses a controlled substance.
 - (7) Products, processes, or substitute chemicals undergoing research and development, by which a controlled substance is used. Such products must be labeled when they are introduced into interstate commerce.
- (c) **Interference with other required labeling information.** The warning statement shall not interfere with, detract from, or mar any labeling information required on the labeling by federal or state law.

[60 FR 4020, Jan. 19, 1995, as amended at 85 FR 15300, Mar. 17, 2020]

§ 82.108 Placement of warning statement.

The warning statement shall be placed so as to satisfy the requirement of the Act that the warning statement be “clearly legible and conspicuous.” The warning statement is clearly legible and conspicuous if it appears with such prominence and conspicuousness as to render it likely to be read and understood by consumers under normal conditions of purchase. Such placement includes, but is not limited to, the following:

- (a) **Display panel placement.** For any affected product or container that has a display panel that is normally viewed by the purchaser at the time of the purchase, the warning statement described in § 82.106 may appear on any such display panel of the affected product or container such that it is “clearly legible and conspicuous” at the time of the purchase. If the warning statement appears on the principal display panel or outer packaging of any such affected product or container, the warning statement shall qualify as “clearly legible and conspicuous,” as long as the label also fulfills all other requirements of this subpart and is not obscured by any outer packaging, as required by paragraph (b) of this section. The warning statement need not appear on such display panel if either:
 - (1) The warning statement appears on the outer packaging of the product or container, consistent with paragraph (b) of this section, and is clearly legible and conspicuous; or
 - (2) The warning statement is placed in a manner consistent with paragraph (c) of this section.
- (b) **Outer packaging.** If the product or container is normally packaged, wrapped, or otherwise covered when viewed by the purchaser at the time of the purchase the warning statement described in § 82.106 shall appear on any outer packaging, wrapping or other covering used in the retail display of the product or container, such that the warning statement is clearly legible and conspicuous at the time of the purchase. If the outer packaging has a display panel that is normally viewed by the purchaser at the time of the purchase, the warning statement shall appear on such display panel. If the warning statement so appears on such product's or container's outer packaging, it need not appear on the surface of the product or container, as long as the statement also fulfills all other requirements of this subpart. The warning statement need not appear on such outer packaging if either:
 - (1) The warning statement appears on the surface of the product or container, consistent with paragraph (a) of this section, and is clearly legible and conspicuous through any outer packaging, wrapping or other covering used in display; or
 - (2) The warning statement is placed in a manner consistent with paragraph (c) of this section.

- (c) **Alternative placement.** The warning statement may be placed on a hang tag, tape, card, sticker, invoice, bill of lading, supplemental printed material, or similar overlabeling that is securely attached to the container, product, outer packaging or display case, or accompanies the product containing or manufactured with a controlled substance or a container containing class I or class II substances through its sale to the consumer or ultimate consumer. For prescription medical products that have been found to be essential for patient health by the Food and Drug Administration, the warning statement may be placed in supplemental printed material intended to be read by the prescribing physician, as long as the following statement is placed on the product, its packaging, or supplemental printed material intended to be read by the patient: "This product contains [insert name of substance], a substance which harms the environment by depleting ozone in the upper atmosphere." In any case, the warning statement must be clearly legible and conspicuous at the time of the purchase.
- (d) **Products not viewed by the purchaser at the time of purchase.** Where the purchaser of a product cannot view a product, its packaging or alternative labeling such that the warning statement is clearly legible and conspicuous at the time of purchase, as specified under paragraphs (a), (b), or (c) of this section, the warning statement may be placed in the following manner:
- (1) Where promotional printed material is prepared for display or distribution, the warning statement may be placed on such promotional printed material such that it is clearly legible and conspicuous at the time of purchase; or
 - (2) The warning statement may be placed on the product, on its outer packaging, or on alternative labeling, consistent with paragraphs (a), (b), or (c) of this section, such that the warning statement is clearly legible and conspicuous at the time of product delivery, if the product may be returned by the purchaser at or after the time of delivery or if the purchase is not complete until the time of delivery (e.g., products delivered C.O.D.).

§ 82.110 Form of label bearing warning statement.

- (a) **Conspicuousness and contrast.** The warning statement shall appear in conspicuous and legible type by typography, layout, and color with other printed matter on the label. The warning statement shall appear in sharp contrast to any background upon which it appears. Examples of combinations of colors which may not satisfy the proposed requirement for sharp contrast are: black letters on a dark blue or dark green background, dark red letters on a light red background, light red letters on a reflective silver background, and white letters on a light gray or tan background.
- (b) **Name of substance.** The name of the class I or class II substance to be inserted into the warning statement shall be the standard chemical name of the substance as listed in 40 CFR part 82, appendix A to subpart A, except that:
- (1) The acronym "CFC" may be substituted for "chlorofluorocarbon."
 - (2) The acronym "HCFC" may be substituted for "hydrochlorofluorocarbon."
 - (3) The term "1,1,1-trichloroethane" may be substituted for "methyl chloroform."
- (c) **Combined statement for multiple controlled substances.** If a container containing or a product contains or is manufactured with, more than one class I or class II substance, the warning statement may include the names of all of the substances in a single warning statement, provided that the combined statement clearly distinguishes which substances the container or product contains and which were used in the manufacturing process.
- (d) **Format.**

- (1) The warning statement shall be blocked within a square or rectangular area, with or without a border.
- (2) The warning statement shall appear in lines that are parallel to the surrounding text on the product's PDP, display panel, supplemental printed material or promotional printed material.
- (e) **Type style.** The ratio of the height of a capital letter to its width shall be such that the height of the letter is no more than 3 times its width; the signal word "WARNING" shall appear in all capital letters.
- (f) **Type size.** The warning statement shall appear at least as large as the type sizes prescribed by this paragraph. The type size refers to the height of the capital letters. A larger type size materially enhances the legibility of the statement and is desirable.
- (1) **Display panel or outer packaging.** Minimum type size requirements for the warning statement are given in Table 1 to this paragraph and are based upon the area of the display panel of the product or container. Where the statement is on outer packaging, as well as the display panel area, the statement shall appear in the same minimum type size as on the display panel.

TABLE 1 TO § 82.110(f)(1)

	Area of display panel (sq. in.)					
	0-2	>2-5	>5-10	>10-15	>15-30	>30
Type size (in.) ¹						
Signal word	3/64	1/16	3/32	7/64	1/8	5/32
Statement	3/64	3/64	1/16	3/32	3/32	7/64

>Means greater than.

¹ Minimum height of printed image of letters.

- (2) **Alternative placement.** The minimum type size for the warning statement on any alternative placement which meets the requirements of § 82.108(c) is 3/32 inches for the signal word and 1/16 of an inch for the statement.
- (3) **Promotional printed material.** The minimum type size for the warning statement on promotional printed material is 3/32 inches for the signal word and 1/16 of an inch for the statement, or the type size of any surrounding text, whichever is larger.

[60 FR 4020, Jan. 19, 1995, as amended at 79 FR 64289, Oct. 28, 2014]

§ 82.112 Removal of label bearing warning statement.

- (a) **Prohibition on removal.** Except as described in paragraph (b) or (c) of this section, any warning statement that accompanies a product or container introduced into interstate commerce, as required by this subpart, must remain with the product or container and any product incorporating such product or container, up to and including the point of sale to the ultimate consumer.

- (b) ***Incorporation of warning statement by subsequent manufacturers.*** A manufacturer of a product that incorporates a product that is accompanied by a label bearing the warning statement may remove such label from the incorporated product if the information on such label is incorporated into a warning statement accompanying the manufacturer's product, or if, pursuant to paragraph (c) of this section, the manufacturer of the product is not required to pass through the information contained on or incorporated in the product's label.
- (c) ***Manufacturers that incorporate products manufactured with controlled substances.*** A manufacturer that incorporates into its own product a component product that was purchased from another manufacturer, was manufactured with a process that uses a controlled substance(s), but does not contain such substance(s), may remove such label from the incorporated product and need not apply a warning statement to its own product, if the manufacturer does not use a controlled substance in its own manufacturing process. A manufacturer that uses controlled substances in its own manufacturing process, and is otherwise subject to the regulations of this subpart, must label pursuant to § 82.106, but need not include information regarding the incorporated product on the required label.
- (d) ***Manufacturers, distributors, wholesalers, retailers that sell spare parts manufactured with controlled substances solely for repair.*** Manufacturers, distributors, wholesalers, and retailers that purchase spare parts manufactured with a class I or class II substance from another manufacturer or supplier, and sell such spare parts for the sole purpose of repair, are not required to pass through an applicable warning label if such products are removed from the original packaging provided by the manufacturer from whom the products are purchased. Manufacturers of the spare parts manufactured with controlled substances must still label their products; furthermore, manufacturers, importers, and distributors of such products must pass through the labeling information as long as products remain assembled and packaged in the manner assembled and packaged by the original manufacturer. This exemption shall not apply if a spare part is later used for manufacture and/or for purposes other than repair.

[60 FR 4020, Jan. 19, 1995, as amended at 79 FR 64289, Oct. 28, 2014]

§ 82.114 Compliance by manufacturers and importers with requirements for labeling of containers of controlled substances, or products containing controlled substances.

- (a) ***Compliance by manufacturers and importers with requirements for labeling of containers of controlled substances, or products containing controlled substances.*** Each manufacturer of a product incorporating another product or container containing a controlled substance, to which § 82.102 (a)(1), or, (a)(2) or (b)(1) applies, that is purchased or obtained from another manufacturer or supplier, is required to pass through and incorporate the labeling information that accompanies such incorporated product in a warning statement accompanying the manufacturer's finished product. Each importer of a product, or container containing a controlled substance, to which § 82.102 (a)(1), (a)(2), or (b)(1) applies, including a component product or container incorporated into the product, that is purchased from a foreign manufacturer or supplier, is required to apply a label, or to ensure that a label has been properly applied, at the site of U.S. Customs clearance.
- (b) ***Reliance on reasonable belief.*** The manufacturer or importer of a product that incorporates another product container from another manufacturer or supplier may rely on the labeling information (or lack thereof) that it receives with the product, and is not required to independently investigate whether the requirements of this subpart are applicable to such purchased product or container, as long as the manufacturer reasonably believes that the supplier or foreign manufacturer is reliably and accurately complying with the requirements of this subpart.

- (c) **Contractual obligations.** A manufacturer's or importer's contractual relationship with its supplier under which the supplier is required to accurately label, consistent with the requirements of this subpart, any products containing a controlled substance or containers of a controlled substance that are supplied to the manufacturer or importer, is evidence of reasonable belief.

§ 82.116 Compliance by manufacturers or importers incorporating products manufactured with controlled substances.

- (a) **Compliance by manufacturers or importers incorporating products manufactured with controlled substances, or importing products manufactured with controlled substances.** Each manufacturer or importer of a product incorporating another product to which § 82.102 (a)(3) or (b)(2) applies, that is purchased from another manufacturer or supplier, is not required to pass through and incorporate the labeling information that accompanies such incorporated product in a warning statement accompanying the manufacturer's or importer's finished product. Importers of products to which § 82.102 (a)(3) or (b)(2) applies are required to apply a label, or to ensure that a label has been properly applied at the site of U.S. Customs clearance.
- (b) **Reliance on reasonable belief.** The importer of a product purchased or obtained from a foreign manufacturer or supplier, which product may have been manufactured with a controlled substance, may rely on the information that it receives with the purchased product, and is not required to independently investigate whether the requirements of this subpart are applicable to the purchased or obtained product, as long as the importer reasonably believes that there was no use of controlled substances by the final manufacturer of the product being imported.
- (c) **Contractual obligations.** An importer's contractual relationship with its supplier under which the supplier is required to accurately label, consistent with the requirements of this subpart, any products manufactured with a controlled substance that are supplied to the importer, or to certify to the importer whether a product was or was not manufactured with a controlled substance is evidence of reasonable belief.

§ 82.118 Compliance by wholesalers, distributors and retailers.

- (a) **Requirement of compliance by wholesalers, distributors and retailers.** All wholesalers, distributors and retailers of products or containers to which this subpart applies are required to pass through the labeling information that accompanies the product, except those purchasing from other manufacturers or suppliers spare parts manufactured with controlled substances and selling those parts for the demonstrable sole purpose of repair.
- (b) **Reliance on reasonable belief.** The wholesaler, distributor or retailer of a product may rely on the labeling information that it receives with the product or container, and is not required to independently investigate whether the requirements of this subpart are applicable to the product or container, as long as the wholesaler, distributor or retailer reasonably believes that the supplier of the product or container is reliably and accurately complying with the requirements of this subpart.
- (c) **Contractual obligations.** A wholesaler, distributor or retailer's contractual relationship with its supplier under which the supplier is required to accurately label, consistent with the requirements of this subpart, any products manufactured with a controlled substance that are supplied to the wholesaler, distributor or retailer is evidence of reasonable belief.

§ 82.120 Petitions.

- (a) **Requirements for procedure and timing.** Persons seeking to apply the requirements of this regulation to a product containing a class II substance or a product manufactured with a class I or a class II substance which is not otherwise subject to the requirements, or to temporarily exempt a product manufactured with a class I substance, based on a showing of a lack of currently or potentially available alternatives, from the requirements of this regulation may submit petitions to: Labeling Program Manager, Stratospheric Protection Division, Office of Atmospheric Programs, U.S. Environmental Protection Agency, 6202-J, 1200 Pennsylvania Ave., NW., Washington, DC 20460. Such persons must label their products while such petitions are under review by the Agency.
- (b) **Requirement for adequate data.** Any petition submitted under paragraph (a) of this section shall be accompanied by adequate data, as defined in § 82.120(c). If adequate data are not included by the petitioner, the Agency may return the petition and request specific additional information.
- (c) **Adequate data.** A petition shall be considered by the Agency to be supported by adequate data if it includes all of the following:
- (1) A part clearly labeled "Section I.A." which contains the petitioner's full name, company or organization name, address and telephone number, the product that is the subject of the petition, and, in the case of a petition to temporarily exempt a product manufactured with a class I substance from the labeling requirement, the manufacturer or manufacturers of that product.
 - (2) For petitions to temporarily exempt a product manufactured with a class I substance only, a part clearly labeled "Section I.A.T." which states the length of time for which an exemption is requested.
 - (3) A part clearly labeled "Section I.B." which includes the following statement, signed by the petitioner or an authorized representative:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this petition and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information."
 - (4) A part clearly labeled "Section I.C." which fully explains the basis for the petitioner's request that EPA add the labeling requirements to or remove them from the product which is the subject of the petition, based specifically upon the technical facility or laboratory tests, literature, or economic analysis described in paragraphs (c) (5), (6) and (7) of this section.
 - (5) A part clearly labeled "Section II.A." which fully describes any technical facility or laboratory tests used to support the petitioner's claim.
 - (6) A part clearly labeled "Section II.B." which fully explains any values taken from literature or estimated on the basis of known information that are used to support the petitioner's claim.
 - (7) A part clearly labeled "Section II.C." which fully explains any economic analysis used to support the petitioner's claim.
- (d) **Criteria for evaluating petitions.** Adequate data in support of any petition to the Agency to add a product to the labeling requirement or temporarily remove a product from the labeling requirement will be evaluated based upon a showing of sufficient quality and scope by the petitioner of whether there are or are not substitute products or manufacturing processes for such product:

- (1) That do not rely on the use of such class I or class II substance;
- (2) That reduce the overall risk to human health and the environment; and
- (3) That are currently or potentially available.

(e) *Procedure for acceptance or denial of petition.*

- (1) If a petition submitted under this section contains adequate data, as defined under paragraph (c) of this section, the Agency shall within 180 days after receiving the complete petition either accept the petition or deny the petition.
- (2) If the Agency makes a decision to accept a petition to apply the requirements of this regulation to a product containing or manufactured with a class II substance, the Agency will notify the petitioner and publish a proposed rule in the FEDERAL REGISTER to apply the labeling requirements to the product.
- (3) If the Agency makes a decision to deny a petition to apply the requirements of this regulation to a product containing or manufactured with a class II substance, the Agency will notify the petitioner and publish an explanation of the petition denial in the FEDERAL REGISTER.
- (4) If the Agency makes a decision to accept a petition to temporarily exempt a product manufactured with a class I substance from the requirements of this regulation, the Agency will notify the petitioner and publish a proposed rule in the FEDERAL REGISTER to temporarily exempt the product from the labeling requirements. Upon notification by the Agency, such manufacturer may immediately cease its labeling process for such exempted products.
- (5) If the Agency makes a decision to deny a petition to temporarily exempt a product manufactured with a class I substance from the requirements of this regulation, the Agency will notify the petitioner and may, in appropriate circumstances, publish an explanation of the petition denial in the FEDERAL REGISTER.

§ 82.122 Certification, recordkeeping, and notice requirements.

(a) *Certification.*

- (1) Persons claiming the exemption provided in § 82.106(b)(4) must submit a written certification to the following address: Labeling Program Manager, Stratospheric Protection Division, Office of Atmospheric Programs, 6205-T, 1200 Pennsylvania Ave. NW., Washington DC 20460.
- (2) The certification must contain the following information:
 - (i) The exact location of documents verifying calendar year 1990 usage and the 95% reduced usage during a twelve month period;
 - (ii) A description of the records maintained at that location;
 - (iii) A description of the type of system used to track usage;
 - (iv) An indication of which 12 month period reflects the 95% reduced usage, and;
 - (v) Name, address, and telephone number of a contact person.

- (3) Persons who submit certifications postmarked on or before May 15, 1993, need not place warning labels on their products manufactured using CFC-113 or methyl chloroform as a solvent. Persons who submit certifications postmarked after May 15, 1993, must label their products manufactured using CFC-113 or methyl chloroform as a solvent for 14 days following such submittal of the certification.
- (4) Persons certifying must also include a statement that indicates their future annual use will at no time exceed 5% of their 1990 usage.
- (5) Certifications must be signed by the owner or a responsible corporate officer.
- (6) If the Administrator determines that a person's certification is incomplete or that information supporting the exemption is inadequate, then products manufactured using CFC-113 or methyl chloroform as a solvent by such person must be labeled pursuant to § 82.106(a).
- (b) **Recordkeeping.** Persons claiming the exemption under section 82.106(b)(2) must retain supporting documentation at one of their facilities.
- (c) **Notice Requirements.** Persons who claim an exemption under § 82.106(b)(2) must submit a notice to the address in paragraph (a)(1) of this section within 30 days of the end of any 12 month period in which their usage of CFC-113 or methyl chloroform used as a solvent exceeds the 95% reduction from calendar year 1990.

[60 FR 4020, Jan. 19, 1995, as amended at 79 FR 64289, Oct. 28, 2014]

§ 82.124 Prohibitions.

- (a) **Warning statement —**
 - (1) **Absence or presence of warning statement.**
 - (i) Applicable May 15, 1993, except as indicated in paragraph (a)(5) of this section, no container or product identified in § 82.102(a) may be introduced into interstate commerce unless it bears a warning statement that complies with the requirements of § 82.106(a) of this subpart, unless such labeling is not required under § 82.102(c), § 82.106(b), § 82.112 (c) or (d), § 82.116(a), § 82.118(a), or temporarily exempted pursuant to § 82.120.
 - (ii) On January 1, 2015, or any time between May 15, 1993 and January 1, 2015 that the Administrator determines for a particular product manufactured with or containing a class II substance that there are substitute products or manufacturing processes for such product that do not rely on the use of a class I or class II substance, that reduce the overall risk to human health and the environment, and that are currently or potentially available, no product identified in § 82.102(b) may be introduced into interstate commerce unless it bears a warning statement that complies with the requirements of § 82.106, unless such labeling is not required under § 82.106(b), § 82.112 (c) or (d), § 82.116(a) or § 82.118(a).
 - (2) **Placement of warning statement.**
 - (i) On May 15, 1993, except as indicated in paragraph (a)(5) of this section, no container or product identified in § 82.102(a) may be introduced into interstate commerce unless it bears a warning statement that complies with the requirements of § 82.108 of this subpart, unless such labeling is not required under § 82.102(c), § 82.106(b), § 82.112 (c) or (d), § 82.116(a), § 82.118(a), or temporarily exempted pursuant to § 82.120.

- (ii) On January 1, 2015, or any time between May 15, 1993 and January 1, 2015 that the Administrator determines for a particular product manufactured with or containing a class II substance that there are substitute products or manufacturing processes for such product that do not rely on the use of a class I or class II substance, that reduce the overall risk to human health and the environment, and that are currently or potentially available, no product identified in § 82.102(b) may be introduced into interstate commerce unless it bears a warning statement that complies with the requirements of § 82.108 of this subpart, unless such labeling is not required under § 82.106(b), § 82.112 (c) or (d), § 82.116(a) or § 82.118(a).
- (3) *Form of label bearing warning statement.*
 - (i) Applicable May 15, 1993, except as indicated in paragraph (a)(5) of this section, no container or product identified in § 82.102(a) may be introduced into interstate commerce unless it bears a warning statement that complies with the requirements of § 82.110, unless such labeling is not required pursuant to § 82.102(c), § 82.106(b), § 82.112 (c) or (d), § 82.116(a), § 82.118(a), or temporarily exempted pursuant to § 82.120.
 - (ii) On January 1, 2015, or any time between May 15, 1993 and January 1, 2015 that the Agency determines for a particular product manufactured with or containing a class II substance, that there are substitute products or manufacturing processes that do not rely on the use of a class I or class II substance, that reduce the overall risk to human health and the environment, and that are currently or potentially available, no product identified in § 82.102(b) may be introduced into interstate commerce unless it bears a warning statement that complies with the requirements of § 82.110, unless such labeling is not required pursuant to § 82.106(b), § 82.112 (c) or (d), § 82.116(a), or § 82.118(a).
- (4) On or after May 15, 1993, no person may modify, remove or interfere with any warning statement required by this subpart, except as described in § 82.112.
- (5) In the case of any substance designated as a class I or class II substance after February 11, 1993, the prohibitions in paragraphs (a)(1)(i), (a)(2)(i), and (a)(3)(i) of this section shall be applicable one year after the designation of such substance as a class I or class II substance unless otherwise specified in the designation.

This content is from the eCFR and is authoritative but unofficial.

Title 40 —Protection of Environment
Chapter I —Environmental Protection Agency
Subchapter C —Air Programs
Part 82 —Protection of Stratospheric Ozone

Authority: 42 U.S.C. 7414, 7601, 7671-7671q.

Source: 57 FR 33787, July 30, 1992, unless otherwise noted.

Subpart F Recycling and Emissions Reduction

§ 82.150 Purpose and scope.

§ 82.152 Definitions.

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§ 82.164 Reclaimer certification.

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§ 82.168 Incorporation by Reference.

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Appendix A to Subpart F of Part 82

Specifications for Refrigerants

Appendix A1 to Subpart F of Part 82

Generic Maximum Contaminant Levels

Appendix B1 to Subpart F of Part 82

Performance of Refrigerant Recovery, Recycling and/or Reclaim
Equipment

Appendix B2 to Subpart F of Part 82

Performance of Refrigerant Recovery, Recycling, and/or Reclaim
Equipment

Appendix B3 to Subpart F of Part 82

Performance of Refrigerant Recovery, Recycling, and/or Reclaim
Equipment

Appendix B4 to Subpart F of Part 82

Performance and Safety of Flammable Refrigerant Recovery and/

or Recycling Equipment

Appendix C to Subpart F of Part 82

Method for Testing Recovery Devices for Use With Small
Appliances

Appendix D to Subpart F of Part 82

Standards for Becoming a Certifying Program for Technicians

Appendix E to Subpart F of Part 82

Test Procedure for Leaks From Containers Holding Two Pounds
or Less of Refrigerant for Use in an MVAC

Subpart F—Recycling and Emissions Reduction

Source: 58 FR 28712, May 14, 1993, unless otherwise noted.

§ 82.150 Purpose and scope.

- (a) The purpose of this subpart is to reduce emissions of class I and class II refrigerants and their non-exempt substitutes to the lowest achievable level by maximizing the recapture and recycling of such refrigerants during the maintenance, service, repair, and disposal of appliances and restricting the sale of refrigerants consisting in whole or in part of a class I or class II ozone-depleting substance or their non-exempt substitutes in accordance with Title VI of the Clean Air Act.
- (b) This subpart applies to any person maintaining, servicing, or repairing appliances containing class I, class II or non-exempt substitute refrigerants. This subpart also applies to persons disposing of such appliances (including small appliances and motor vehicle air conditioners), refrigerant reclaimers, technician certifying programs, appliance owners and operators, manufacturers of appliances, manufacturers of recovery and/or recycling equipment, approved recovery and/or recycling equipment testing organizations, and persons buying, selling, or offering to sell class I, class II, or non-exempt substitute refrigerants.

[81 FR 82349, Nov. 11, 2016]

§ 82.152 Definitions.

Appliance means any device which contains and uses a class I or class II substance or substitute as a refrigerant and which is used for household or commercial purposes, including any air conditioner, motor vehicle air conditioner, refrigerator, chiller, or freezer. For a system with multiple circuits, each independent circuit is considered a separate appliance.

Apprentice means any person who is currently registered as an apprentice in maintenance, service, repair, or disposal of appliances with the U.S. Department of Labor's Office of Apprenticeship (or a State Apprenticeship Council recognized by the Office of Apprenticeship). A person may only be an apprentice for two years from the date of first registering with that office.

Approved equipment testing organization means any organization which has applied for and received approval from the Administrator pursuant to § 82.160.

Batch means a single bulk cylinder of refrigerant after all reclamation has been completed prior to packaging or shipping to the market.

Class I refers to an ozone-depleting substance that is listed in 40 CFR part 82 subpart A, appendix A.

Class II refers to an ozone-depleting substance that is listed in 40 CFR part 82 subpart A, appendix B.

Certified refrigerant recovery or recycling equipment means equipment manufactured before November 15, 1993, that meets the standards in § 82.158(c), (e), or (g); equipment certified by an approved equipment testing organization to meet the standards in § 82.158(b), (d), or (f); or equipment certified pursuant to § 82.36(a).

Comfort cooling means the air-conditioning appliances used to provide cooling in order to control heat and/or humidity in occupied facilities including but not limited to residential, office, and commercial buildings. Comfort cooling appliances include but are not limited to chillers, commercial split systems, and packaged roof-top units.

Commercial refrigeration means the refrigeration appliances used in the retail food and cold storage warehouse sectors. Retail food appliances include the refrigeration equipment found in supermarkets, convenience stores, restaurants and other food service establishments. Cold storage includes the refrigeration equipment used to store meat, produce, dairy products, and other perishable goods.

Component means a part of the refrigerant circuit within an appliance including, but not limited to, compressors, condensers, evaporators, receivers, and all of its connections and subassemblies.

Custom-built means that the industrial process equipment or any of its components cannot be purchased and/or installed without being uniquely designed, fabricated and/or assembled to satisfy a specific set of industrial process conditions.

Disposal means the process leading to and including:

- (1) The discharge, deposit, dumping or placing of any discarded appliance into or on any land or water;
- (2) The disassembly of any appliance for discharge, deposit, dumping or placing of its discarded component parts into or on any land or water;
- (3) The vandalism of any appliance such that the refrigerant is released into the environment or would be released into the environment if it had not been recovered prior to the destructive activity;
- (4) The disassembly of any appliance for reuse of its component parts; or
- (5) The recycling of any appliance for scrap.

Follow-up verification test means those tests that involve checking the repairs to an appliance after a successful initial verification test and after the appliance has returned to normal operating characteristics and conditions to verify that the repairs were successful. Potential methods for follow-up verification tests include, but are not limited to, the use of soap bubbles as appropriate, electronic or ultrasonic leak detectors, pressure or vacuum tests, fluorescent dye and black light, infrared or near infrared tests, and handheld gas detection devices.

Full charge means the amount of refrigerant required for normal operating characteristics and conditions of the appliance as determined by using one or a combination of the following four methods:

- (1) Use of the equipment manufacturer's determination of the full charge;
- (2) Use of appropriate calculations based on component sizes, density of refrigerant, volume of piping, and other relevant considerations;
- (3) Use of actual measurements of the amount of refrigerant added to or evacuated from the appliance, including for seasonal variances; and/or
- (4) Use of an established range based on the best available data regarding the normal operating characteristics and conditions for the appliance, where the midpoint of the range will serve as the full charge.

High-pressure appliance means an appliance that uses a refrigerant with a liquid phase saturation pressure between 170 psia and 355 psia at 104 °F. Examples include but are not limited to appliances using R-22, R-407A, R-407C, R-410A, and R-502.

Industrial process refrigeration means complex customized appliances that are directly linked to the processes used in, for example, the chemical, pharmaceutical, petrochemical, and manufacturing industries. This sector also includes industrial ice machines, appliances used directly in the generation of electricity, and ice rinks. Where one appliance is used for both industrial process refrigeration and other applications, it will be considered industrial process refrigeration equipment if 50 percent or more of its operating capacity is used for industrial process refrigeration.

Industrial process shutdown means when an industrial process or facility temporarily ceases to operate or manufacture whatever is being produced at that facility.

Initial verification test means those leak tests that are conducted after the repair is finished to verify that a leak or leaks have been repaired before refrigerant is added back to the appliance.

Leak inspection means the examination of an appliance to determine the location of refrigerant leaks. Potential methods include, but are not limited to, ultrasonic tests, gas-imaging cameras, bubble tests as appropriate, or the use of a leak detection device operated and maintained according to manufacturer guidelines. Methods that determine whether the appliance is leaking refrigerant but not the location of a leak, such as standing pressure/vacuum decay tests, sight glass checks, viewing receiver levels, pressure checks, and charging charts, must be used in conjunction with methods that can determine the location of a leak.

Leak rate means the rate at which an appliance is losing refrigerant, measured between refrigerant charges. The leak rate is expressed in terms of the percentage of the appliance's full charge that would be lost over a 12-month period if the current rate of loss were to continue over that period. The rate must be calculated using one of the following methods. The same method must be used for all appliances subject to the leak repair requirements located at an operating facility.

- (1) Annualizing Method.
 - (i) Step 1. Take the number of pounds of refrigerant added to the appliance to return it to a full charge, whether in one addition or if multiple additions related to same leak, and divide it by the number of pounds of refrigerant the appliance normally contains at full charge;
 - (ii) Step 2. Take the shorter of the number of days that have passed since the last day refrigerant was added or 365 days and divide that number by 365 days;
 - (iii) Step 3. Take the number calculated in Step 1 and divide it by the number calculated in Step 2; and

- (iv) Step 4. Multiply the number calculated in Step 3 by 100 to calculate a percentage. This method is summarized in the following formula:

$$\text{Leak rate} = \frac{\text{pounds of refrigerant added}}{\text{pounds of refrigerant in full charge}} \times \frac{365 \text{ days/year}}{\text{shorter of: \# days since refrigerant last added or 365 days}} \times 100\%$$

(% per year)

(2) Rolling Average Method.

- (i) Step 1. Take the sum of the pounds of refrigerant added to the appliance over the previous 365-day period (or over the period that has passed since the last successful follow-up verification test showing all identified leaks in the appliance were repaired, if that period is less than one year);
- (ii) Step 2. Divide the result of Step 1 by the pounds of refrigerant the appliance normally contains at full charge; and
- (iii) Step 3. Multiply the result of Step 2 by 100 to obtain a percentage. This method is summarized in the following formula:

$$\text{Leak rate} = \frac{\text{pounds of refrigerant added over past 365 days (or since the last successful follow-up verification test showing all identified leaks in the appliance were repaired, if that period is less than one year)}}{\text{pounds of refrigerant in full charge}} \times 100\%$$

(% per year)

Low-loss fitting means any device that is intended to establish a connection between hoses, appliances, or recovery and/or recycling machines and that is designed to close automatically or to be closed manually when disconnected, minimizing the release of refrigerant from hoses, appliances, and recovery and/or recycling machines.

Low-pressure appliance means an appliance that uses a refrigerant with a liquid phase saturation pressure below 45 psia at 104 °F. Examples include but are not limited to appliances using R-11, R-123, R-113, and R-245fa.

Major maintenance, service, or repair means any maintenance, service, or repair that involves the removal of any or all of the following appliance components: compressor, condenser, evaporator, or auxiliary heat exchange coil; or any maintenance, service, or repair that involves uncovering an opening of more than four (4) square inches of "flow area" for more than 15 minutes.

Medium-pressure appliance means an appliance that uses a refrigerant with a liquid phase saturation pressure between 45 psia and 170 psia at 104 °F. Examples include but are not limited to appliances using R-114, R-124, R-12, R-134a, and R-500.

Mothball means to evacuate refrigerant from an appliance, or the affected isolated section or component of an appliance, to at least atmospheric pressure, and to temporarily shut down that appliance.

Motor vehicle air conditioner (MVAC) means any appliance that is a motor vehicle air conditioner as defined in 40 CFR part 82, subpart B.

MVAC-like appliance means a mechanical vapor compression, open-drive compressor appliance with a full charge of 20 pounds or less of refrigerant used to cool the driver's or passenger's compartment of off-road vehicles or equipment. This includes, but is not limited to, the air-conditioning equipment found on agricultural or construction vehicles. This definition is not intended to cover appliances using R-22 refrigerant.

Normal operating characteristics and conditions means appliance operating temperatures, pressures, fluid flows, speeds, and other characteristics, including full charge of the appliance, that would be expected for a given process load and ambient condition during normal operation. Normal operating characteristics and conditions are marked by the absence of atypical conditions affecting the operation of the appliance.

One-time expansion device means an appliance that relies on the release of its refrigerant charge to the environment in order to provide a cooling effect. These are typically single releases but could also include products that are designed to release refrigerant to the environment through multiple individual charges.

Opening an appliance means any maintenance, service, repair, or disposal of an appliance that would release any refrigerant in the appliance to the atmosphere. Connecting and disconnecting hoses and gauges to measure pressures, add refrigerant, or recover refrigerant from the appliance are not considered “opening an appliance.”

Parent company means an individual, corporation, partnership, association, joint-stock company, or an unincorporated organization that can direct or cause the direction of management and policies of another entity, through the ownership of shares or otherwise.

Person means any individual or legal entity, including an individual, corporation, partnership, association, state, municipality, political subdivision of a state, Indian tribe, and any agency, department, or instrumentality of the United States, and any officer, agent, or employee thereof.

Process stub means a length of tubing that provides access to the refrigerant inside a small appliance or room air conditioner and that can be resealed at the conclusion of repair or service.

Reclaim means to reprocess recovered refrigerant to all of the specifications in appendix A of this subpart (based on AHRI Standard 700-2016, *Specifications for Refrigerants*) that are applicable to that refrigerant and to verify that the refrigerant meets these specifications using the analytical methodology prescribed in section 5 of appendix A of this subpart.

Recover means to remove refrigerant in any condition from an appliance and to store it in an external container without necessarily testing or processing it in any way.

Recovery efficiency means the percentage of refrigerant in an appliance that is recovered by a piece of recovery and/or recycling equipment.

Recycle, when referring to refrigerant, means to extract refrigerant from an appliance (except MVACs) and clean it for reuse in equipment of the same owner without meeting all of the requirements for reclamation. In general, recycled refrigerant is cleaned using oil separation and single or multiple passes through devices, such as replaceable core filter-driers, which reduce moisture, acidity, and particulate matter.

Refrigerant means, for purposes of this subpart, any substance, including blends and mixtures, consisting in part or whole of a class I or class II ozone-depleting substance or substitute that is used for heat transfer purposes and provides a cooling effect.

Refrigerant circuit means the parts of an appliance that are normally connected to each other (or are separated only by internal valves) and are designed to contain refrigerant.

Retire, when referring to an appliance, means the removal of the refrigerant and the disassembly or impairment of the refrigerant circuit such that the appliance as a whole is rendered unusable by any person in the future.

Retrofit means to convert an appliance from one refrigerant to another refrigerant. Retrofitting includes the conversion of the appliance to achieve system compatibility with the new refrigerant and may include, but is not limited to, changes in lubricants, gaskets, filters, driers, valves, o-rings or appliance components.

Seasonal variance means the removal of refrigerant from an appliance due to a change in ambient conditions caused by a change in season, followed by the subsequent addition of an amount that is less than or equal to the amount of refrigerant removed in the prior change in season, where both the removal and addition of refrigerant occurs within one consecutive 12-month period.

Self-contained recovery equipment means refrigerant recovery and/or recycling equipment that is capable of removing the refrigerant from an appliance without the assistance of components contained in the appliance.

Self-sealing valve means a valve affixed to a container of refrigerant that automatically seals when not dispensing refrigerant and meets or exceeds established performance criteria as identified in § 82.154(c)(2).

Small appliance means any appliance that is fully manufactured, charged, and hermetically sealed in a factory with five (5) pounds or less of refrigerant, including, but not limited to, refrigerators and freezers (designed for home, commercial, or consumer use), medical or industrial research refrigeration equipment, room air conditioners (including window air conditioners, portable air conditioners, and packaged terminal air heat pumps), dehumidifiers, under-the-counter ice makers, vending machines, and drinking water coolers.

Substitute means any chemical or product, whether existing or new, that is used as a refrigerant to replace a class I or II ozone-depleting substance. Examples include, but are not limited to hydrofluorocarbons, perfluorocarbons, hydrofluoroolefins, hydrofluoroethers, hydrocarbons, ammonia, carbon dioxide, and blends thereof. As used in this subpart, the term “exempt substitutes” refers to certain substitutes when used in certain end-uses that are specified in § 82.154(a)(1) as exempt from the venting prohibition and the requirements of this subpart, and the term “non-exempt substitutes” refers to all other substitutes and end-uses not so specified in § 82.154(a)(1).

System-dependent recovery equipment means refrigerant recovery equipment that requires the assistance of components contained in an appliance to remove the refrigerant from the appliance.

System receiver means the isolated portion of the appliance, or a specific vessel within the appliance, that is used to hold the refrigerant charge during the servicing or repair of that appliance.

Technician means any person who in the course of maintenance, service, or repair of an appliance (except MVACs) could be reasonably expected to violate the integrity of the refrigerant circuit and therefore release refrigerants into the environment. Technician also means any person who in the course of disposal of an appliance (except small appliances, MVACs, and MVAC-like appliances) could be reasonably expected to violate the integrity of the refrigerant circuit and therefore release refrigerants from the appliances into the environment. Activities reasonably expected to violate the integrity of the refrigerant circuit include but are not limited to: Attaching or detaching hoses and gauges to and from the appliance; adding or removing refrigerant; adding or removing components; and cutting the refrigerant line. Activities such as painting the appliance, rewiring an external electrical circuit, replacing insulation on a length of pipe, or tightening nuts and bolts are not reasonably expected to violate the integrity of the refrigerant circuit. Activities conducted on appliances that have been properly evacuated pursuant to §

82.156 are not reasonably expected to release refrigerants unless the activity includes adding refrigerant to the appliance. Technicians could include but are not limited to installers, contractor employees, in-house service personnel, and owners and/or operators of appliances.

Very high-pressure appliance means an appliance that uses a refrigerant with a critical temperature below 104 °F or with a liquid phase saturation pressure above 355 psia at 104 °F. Examples include but are not limited to appliances using R-13, R-23, R-503, R-508A, and R-508B.

[58 FR 28712, May 14, 1993, as amended at 59 FR 42956, Aug. 19, 1994; 59 FR 55925, Nov. 9, 1994; 60 FR 40439, Aug. 8, 1995; 68 FR 43806, July 24, 2003; 69 FR 11978, Mar. 12, 2004; 70 FR 1991, Jan. 11, 2005; 70 FR 19278, Apr. 13, 2005; 81 FR 82349, Nov. 18, 2016]

§ 82.154 Prohibitions.

(a) *Venting prohibition.*

(1) No person maintaining, servicing, repairing, or disposing of an appliance or industrial process refrigeration may knowingly vent or otherwise release into the environment any refrigerant from such appliances. Notwithstanding any other provision of this subpart, the following substitutes in the following end-uses are exempt from this prohibition and from the requirements of this subpart:

- (i) Carbon dioxide in any application;
- (ii) Nitrogen in any application;
- (iii) Water in any application;
- (iv) Ammonia in commercial or industrial process refrigeration or in absorption units;
- (v) Chlorine in industrial process refrigeration (processing of chlorine and chlorine compounds);
- (vi) Hydrocarbons in industrial process refrigeration (processing of hydrocarbons);
- (vii) Ethane (R-170) in very low temperature refrigeration equipment and equipment for non-mechanical heat transfer;
- (viii) Propane (R-290) in retail food refrigerators and freezers—stand-alone units; household refrigerators, freezers, and combination refrigerators and freezers; self-contained room air conditioners for residential and light commercial air-conditioning and heat pumps; vending machines; self-contained commercial ice machines, very low temperature refrigeration equipment, and water coolers; and effective July 15, 2024, retail food refrigeration—refrigerated food processing and dispensing equipment;
- (ix) Isobutane (R-600a) in retail food refrigerators and freezers (stand-alone units only); household refrigerators, freezers, and combination refrigerators and freezers; and vending machines;
- (x) R-441A in retail food refrigerators and freezers (stand-alone units only); household refrigerators, freezers, and combination refrigerators and freezers; self-contained room air conditioners for residential and light commercial air-conditioning; heat pumps; and vending machines.

(2) *De minimis* releases associated with good faith attempts to recycle or recover refrigerants are not subject to this prohibition. Except for exempt substitutes, refrigerant releases are *de minimis* only if they occur when:

- (i) The applicable practices in §§ 82.155 and 82.156 are observed, the applicable practices in § 82.157 are observed for appliances that contain any class I or class II refrigerant or blend containing a class I or class II refrigerant, recovery and/or recycling machines that meet the requirements in § 82.158 are used whenever refrigerant is removed from an appliance, the technician certification provisions in § 82.161 are observed, and the reclamation requirements in § 82.164 are observed; or
- (ii) The requirements in subpart B of this part are observed.
- (3) The knowing release of a class I or class II refrigerant or a non-exempt substitute refrigerant after its recovery from an appliance is a violation of the venting prohibition.
- (b) No person may maintain, service, repair, or dispose of an appliance containing a class I or class II refrigerant or a non-exempt substitute refrigerant without:
 - (1) Observing the applicable practices in § 82.155, § 82.156, and § 82.157; and
 - (2) Using recovery and/or recycling equipment that is certified for that type of refrigerant and appliance under § 82.158.
- (c) **Sales Restriction.**
 - (1) No person may sell or distribute, or offer for sale or distribution, any substance that consists in whole or in part of a class I or class II substance or, starting on January 1, 2018, any non-exempt substitute for use as a refrigerant unless:
 - (i) The buyer has been certified as a Type I, Type II, Type III, or Universal technician under § 82.161;
 - (ii) The buyer employs at least one technician who is certified as a Type I, Type II, Type III, or Universal technician under § 82.161 and provides proof of such to the seller;
 - (iii) The buyer has been certified in accordance with 40 CFR part 82, subpart B and the refrigerant is acceptable for use in MVACs under 40 CFR part 82, subpart G;
 - (iv) The buyer employs at least one person who is certified under 40 CFR part 82, subpart B, and provides proof of such to the seller and the refrigerant is acceptable for use in MVACs under 40 CFR part 82, subpart G. Nothing in this provision relieves persons of the requirements of § 82.34(b) or § 82.42(b);
 - (v) The refrigerant is sold only for eventual resale to persons certified under § 82.161 or 40 CFR part 82, subpart B or to appliance manufacturers (e.g., sold by a manufacturer to a wholesaler, sold by a technician to a reclaimer);
 - (vi) The refrigerant is sold to an appliance manufacturer;
 - (vii) The refrigerant is contained in an appliance with a fully assembled refrigerant circuit or an appliance component;
 - (viii) The refrigerant is charged into an appliance by a certified technician or an apprentice during maintenance, service, or repair of the appliance; or
 - (ix) The non-exempt substitute refrigerant is intended for use in an MVAC and is sold in a container designed to hold two pounds or less of refrigerant, has a unique fitting, and, if manufactured or imported on or after January 1, 2018, has a self-sealing valve that complies with the requirements of paragraph (c)(2) of this section.

- (2) ***Self-sealing valve specifications.*** This provision applies starting January 1, 2018, for all containers holding two pounds or less of non-exempt substitute refrigerant for use in an MVAC that are manufactured or imported on or after that date.
- (i) Each container holding two pounds or less of non-exempt substitute refrigerant for use in an MVAC must be equipped with a single self-sealing valve that automatically closes and seals when not dispensing refrigerant.
 - (ii) The leakage rate from each container must not exceed 3.00 grams per year when the self-sealing valve is closed. This leakage rate applies to new, full containers as well as containers that may be partially full.
 - (iii) The leakage rate must be determined using the standards described in appendix E (incorporated by reference, see § 82.168).
 - (iv) All testing to demonstrate compliance with this paragraph must be conducted by an independent test laboratory in the United States. For purposes of this requirement, an independent test laboratory is one that is not owned, operated, or affiliated with the applicant certifying equipment and/or products.
- (3) ***Recordkeeping.***
- (i) Persons who sell or distribute, or offer to sell or distribute, any class I or class II refrigerant, or, starting on January 1, 2018, any non-exempt substitute refrigerant must keep invoices that indicate the name of the purchaser, the date of sale, and the quantity of refrigerant purchased unless they are selling exempt substitutes (those substitutes used in the end-uses specified as exempt in paragraph (a)(1) of this section) or small cans of MVAC refrigerant in accordance with paragraph (c)(1)(ix) of this section. In instances where the buyer employs a person certified under § 82.161 or 40 CFR part 82, subpart B, the seller must keep the documentation provided by the buyer to demonstrate such employment. All records must be kept for three years.
 - (ii) Electronic or paper copies of all records described in appendix E must be maintained by manufacturers of containers holding two pounds or less of non-exempt substitute refrigerant for use in an MVAC to verify self-sealing valves meet the requirements specified in paragraph (c)(2) of this section. All records must be kept for three years after each purchase.
- (d) ***Sale of Used Refrigerant.*** No person may sell or distribute, or offer for sale or distribution, for use as a refrigerant any class I or class II substance or non-exempt substitute consisting wholly or in part of used refrigerant unless the refrigerant:
- (1) Has been reclaimed by a person who has been certified as a reclaimer under § 82.164;
 - (2) was used only in an MVAC or MVAC-like appliance and is to be used only in an MVAC or MVAC-like appliance and recycled in accordance with 40 CFR part 82, subpart B;
 - (3) is contained in an appliance that is sold or offered for sale together with a fully assembled refrigerant circuit;
 - (4) is being transferred between or among a parent company and one or more of its subsidiaries, or between or among subsidiaries having the same parent company; or
 - (5) is being transferred between or among a Federal agency or department and a facility or facilities owned by the same Federal agency or department.

(e) **Manufacture and Sale of Appliances.**

- (1) No person may sell or distribute, or offer for sale or distribution, any appliance (except small appliances and appliances containing only refrigerants that have been exempted under paragraph (a)(1) of this section) unless it is equipped with a servicing aperture to facilitate the removal of refrigerant at servicing and disposal.
 - (2) No person may sell or distribute, or offer for sale or distribution, any small appliance (except appliances containing only refrigerants that have been exempted under paragraph (a)(1) of this section) unless it is equipped with a process stub to facilitate the removal of refrigerant at servicing and disposal.
- (f) **One-time expansion devices.** No person may manufacture or import a one-time expansion device unless the only refrigerants it contains have been exempted under paragraph (a)(1) of this section.
- (g) Rules stayed for consideration. Notwithstanding any other provisions of this subpart, the effectiveness of 40 CFR 82.154(c), only as it applies to refrigerant contained in appliances without fully assembled refrigerant circuits, is stayed from April 27, 1995, until EPA takes final action on its reconsideration of these provisions. EPA will publish any such final action in the FEDERAL REGISTER.

[81 FR 82352, Nov. 18, 2016, as amended at 81 FR 86881, Dec. 1, 2016; 82 FR 61184, Dec. 27, 2017; 85 FR 14171, Apr. 10, 2020; 89 FR 50463, June 13, 2024]

§ 82.155 Safe disposal of appliances.

Until January 1, 2018, this section applies only to disposal of appliances containing class I and class II refrigerants. Starting on January 1, 2018, this section applies to disposal of appliances containing any class I or class II refrigerant or any non-exempt substitute refrigerant.

- (a) Persons recovering refrigerant from a small appliance, MVAC, or MVAC-like appliance for purposes of disposal of these appliances must evacuate refrigerant to the levels in § 82.156(b) through (d) using recovery equipment that meets the standards in § 82.158(e) through (g), or 40 CFR part 82 subpart B, as applicable.
- (b) The final processor—*i.e.*, persons who take the final step in the disposal process (including but not limited to scrap recyclers and landfill operators) of a small appliance, MVAC, or MVAC-like appliance—must either:
 - (1) Recover any remaining refrigerant from the appliance in accordance with paragraph (a) of this section; or
 - (2) Verify using a signed statement or a contract that all refrigerant that had not leaked previously has been recovered from the appliance or shipment of appliances in accordance with paragraph (a) of this section. If using a signed statement, it must include the name and address of the person who recovered the refrigerant and the date the refrigerant was recovered. If using a signed contract between the supplier and the final processor, it must either state that the supplier will recover any remaining refrigerant from the appliance or shipment of appliances in accordance with paragraph (a) of this section prior to delivery or verify that the refrigerant had been properly recovered prior to receipt by the supplier.

- (i) It is a violation of this subpart to accept a signed statement or contract if the person receiving the statement or contract knew or had reason to know that the signed statement or contract is false.
 - (ii) The final processor must notify suppliers of appliances that refrigerant must be properly recovered in accordance with paragraph (a) of this section before delivery of the items to the facility. The form of this notification may be signs, letters to suppliers, or other equivalent means.
 - (iii) If all the refrigerant has leaked out of the appliance, the final processor must obtain a signed statement that all the refrigerant in the appliance had leaked out prior to delivery to the final processor and recovery is not possible. "Leaked out" in this context means those situations in which the refrigerant has escaped because of system failures, accidents, or other unavoidable occurrences not caused by a person's negligence or deliberate acts such as cutting refrigerant lines.
- (c) **Recordkeeping.** The final processor of a small appliance, MVAC, or MVAC-like appliance must keep a copy of all the signed statements or contracts obtained under paragraph (b)(2) of this section on site, in hard copy or in electronic format, for three years.

[81 FR 82353, Nov. 18, 2016]

§ 82.156 Proper evacuation of refrigerant from appliances.

Until January 1, 2018, this section applies only to evacuation of refrigerant from appliances containing class I or class II refrigerants. Starting on January 1, 2018, this section applies to evacuation of refrigerant from appliances containing any class I or class II refrigerant or any non-exempt substitute refrigerant, excluding paragraph (i) of this section which applies only to appliances containing class I or class II refrigerants until January 1, 2019. Starting January 1, 2019, the provisions in § 82.157 apply in lieu of paragraph (i) of this section.

- (a) **Appliances (except small appliances, MVACs, and MVAC-like appliances).** Before opening appliances (except small appliances, MVACs, and MVAC-like appliances) or disposing of such appliances, technicians must evacuate the refrigerant, including all the liquid refrigerant, to the levels in Table 1 using a recovery and/or recycling machine certified pursuant to § 82.158 unless the situations in paragraphs (a)(1) or (2) of this section apply. Technicians may evacuate either the entire appliance or the part to be serviced, if the refrigerant in the part can be isolated to a system receiver. A technician must verify that the applicable level of evacuation has been reached in the appliance or the part before it is opened.
- (1) If evacuation of the appliance to the atmosphere is not to be performed after completion of the maintenance, service, or repair, and if the maintenance, service, or repair is not major as defined at § 82.152, the appliance must:
- (i) Be evacuated to a pressure no higher than 0 psig before it is opened if it is a medium-, high- or very high-pressure appliance;
 - (ii) Be pressurized to a pressure no higher than 0 psig before it is opened if it is a low-pressure appliance. Persons must cover openings when isolation is not possible. Persons pressurizing low-pressure appliances that use refrigerants with boiling points at or below 85 degrees Fahrenheit at 29.9 inches of mercury (standard atmospheric pressure), must not use methods such as nitrogen that require subsequent purging. Persons pressurizing low-pressure appliances that use refrigerants with boiling points above 85 degrees Fahrenheit at 29.9 inches

of mercury, must use heat to raise the internal pressure of the appliance as much as possible, but may use nitrogen to raise the internal pressure of the appliance from the level attainable through use of heat to atmospheric pressure; or

- (iii) For the purposes of oil changes, be evacuated or pressurized to a pressure no higher than 5 psig, before it is opened; or drain the oil into a system receiver to be evacuated or pressurized to a pressure no higher than 5 psig.
- (2) If leaks in the appliance make evacuation to the levels in Table 1 unattainable or would substantially contaminate the refrigerant being recovered, persons opening or disposing of the appliance must:
 - (i) Isolate leaking from non-leaking components wherever possible;
 - (ii) Evacuate non-leaking components to be opened or disposed of to the levels specified in Table 1; and
 - (iii) Evacuate leaking components to be opened or disposed of to the lowest level that can be attained without substantially contaminating the refrigerant. This level may not exceed 0 psig.
- (3) **Recordkeeping.** As of January 1, 2018, technicians evacuating refrigerant from appliances with a full charge of more than 5 and less than 50 pounds of refrigerant for purposes of disposal of that appliance must keep records documenting the following for three years:
 - (i) The company name, location of the appliance, date of recovery, and type of refrigerant recovered for each appliance;
 - (ii) The total quantity of refrigerant, by type, recovered from all disposed appliances in each calendar month; and
 - (iii) The quantity of refrigerant, by type, transferred for reclamation and/or destruction, the person to whom it was transferred, and the date of transfer.

**TABLE 1—REQUIRED LEVELS OF EVACUATION FOR APPLIANCES
[EXCEPT FOR SMALL APPLIANCES, MVACs, AND MVAC-LIKE APPLIANCES]**

Type of appliance	Inches of Hg vacuum (relative to standard atmospheric pressure of 29.9 inches Hg)	
	Using recovery and/or recycling equipment manufactured or imported before November 15, 1993	Using recovery and/or recycling equipment manufactured or imported on or after November 15, 1993
Very high-pressure appliance	0	0.
High-pressure appliance, or isolated component of such appliance, with a full charge of less than 200 pounds of refrigerant	0	0.

Type of appliance	Inches of Hg vacuum (relative to standard atmospheric pressure of 29.9 inches Hg)	
	Using recovery and/or recycling equipment manufactured or imported before November 15, 1993	Using recovery and/or recycling equipment manufactured or imported on or after November 15, 1993
High-pressure appliance, or isolated component of such appliance, with a full charge of 200 pounds or more of refrigerant	4	10.
Medium-pressure appliance, or isolated component of such appliance, with a full charge of less than 200 pounds of refrigerant	4	10.
Medium-pressure appliance, or isolated component of such appliance, with a full charge of 200 pounds or more of refrigerant	4	15.
Low-pressure appliance	25 mm Hg absolute	25 mm Hg absolute.

- (b) **Small appliances.** Before opening a small appliance or when disposing of a small appliance, persons must recover refrigerant, using a recovery and/or recycling machine certified pursuant to § 82.158, according to the following conditions:
- (1) When using recovery equipment manufactured before November 15, 1993, recover 80 percent of the refrigerant in the small appliance; or
 - (2) When using recovery equipment manufactured on or after November 15, 1993, recover 90 percent of the refrigerant in the appliance when the compressor in the appliance is functioning, or 80 percent of the refrigerant in the appliance when the compressor in the appliance is not functioning; or
 - (3) Evacuate the appliance to four inches of mercury vacuum.
- (c) **MVAC-like appliances.** Persons may only open MVAC-like appliances while properly using, as defined at § 82.32(e), recovery and/or recycling equipment certified pursuant to § 82.158(f) or § 82.36, as applicable. All persons recovering refrigerant from MVAC-like appliances for purposes of disposal of these appliances must evacuate the appliance in accordance with 40 CFR part 82, subpart B or reduce the system pressure to or below 102 mm of mercury vacuum.
- (d) **MVACs.** All persons recovering refrigerant from MVACs for purposes of disposal of these appliances must evacuate the appliance in accordance with 40 CFR part 82, subpart B or reduce the system pressure to or below 102 mm of mercury vacuum.
- (e) System-dependent equipment may not be used with appliances with a full charge of more than 15 pounds of refrigerant, unless the system-dependent equipment is permanently attached to the appliance as a pump-out unit.

- (f) Persons who maintain, service, repair, or dispose of only appliances that they own and that contain pump-out units are exempt from the requirement to use certified, self-contained recovery and/or recycling equipment.
- (g) All recovery and/or recycling equipment must be used in accordance with the manufacturer's directions unless such directions conflict with the requirements of this subpart.
- (h) Refrigerant may be returned to the appliance from which it is recovered or to another appliance owned by the same person without being recycled or reclaimed, unless the appliance is an MVAC or MVAC-like appliance.
- (i) The provisions in this paragraph (i) apply to owners and operators of appliances containing 50 or more pounds of class I and class II refrigerants only until January 1, 2019. The definitions in paragraph (j) of this section apply for purposes of this paragraph (i) in lieu of the definitions in § 82.152.
 - (1) Owners or operators of commercial refrigeration equipment normally containing more than 50 pounds of refrigerant must have leaks repaired in accordance with paragraph (i)(9) of this section, if the appliance is leaking at a rate such that the loss of refrigerant will exceed 35 percent of the total charge during a 12-month period, except as described in paragraphs (i)(6), (i)(8), and (i)(10) of this section and paragraphs (i)(1)(i), (i)(1)(ii), and (i)(1)(iii) of this section. Repairs must bring the annual leak rate to below 35 percent.
 - (i) If the owners or operators of the federally-owned commercial refrigerant appliances determine that the leaks cannot be repaired in accordance with paragraph (i)(9) of this section and that an extension in accordance with the requirements discussed in this paragraph (i)(1)(i) of this section apply, they must document all repair efforts, and notify EPA of their inability to comply within the 30-day repair requirement, and the reason for the inability must be submitted to EPA in accordance with § 82.166(n). Such notification must be made within 30 days of discovering the leaks. EPA will determine if the extension requested in accordance with the requirements discussed in paragraph (i)(1)(i) of this section is justified. If the extension is not justified, EPA will notify the owner/operator within 30 days of receipt of the notification.
 - (ii) Owners or operators of federally-owned commercial refrigeration equipment may have more than 30 days to repair leaks if the refrigeration appliance is located in an area subject to radiological contamination or where the shutting down of the appliance will directly lead to radiological contamination. Only the additional time needed to conduct and complete repairs in a safe working environment will be permitted.
 - (iii) Owners or operators of federally-owned commercial refrigeration equipment requesting or who are granted time extensions under this paragraph must comply with paragraphs (i)(3) and (i)(4) of this section.
 - (2) The owners or operators of industrial process refrigeration equipment normally containing more than 50 pounds of refrigerant must have leaks repaired if the appliance is leaking at a rate such that the loss of refrigerant will exceed 35 percent of the total charge during a 12-month period in accordance with paragraph (i)(9) of this section, except as described in paragraphs (i)(6), (i)(7) and (i)(10) of this section, and paragraphs (i)(2)(i) and (i)(2)(ii) of this section. Repairs must bring annual leak rates to below 35 percent during a 12-month period. If the owners or operators of the industrial process refrigeration equipment determine that the leak rate cannot be brought to below 35 percent during a 12-month period within 30 days (or 120 days, where an industrial process shutdown in accordance with paragraph (i)(2)(ii) of this section is required,) and in accordance with paragraph (i)(9) of this section, and that an extension in accordance with the requirements discussed in this paragraph

apply, the owners or operators of the appliance must document all repair efforts, and notify EPA of the reason for the inability in accordance with § 82.166(n) within 30 days of making this determination. Owners or operators who obtain an extension pursuant to this section or elect to utilize the additional time provided in paragraph (i)(2)(i) of this section, must conduct all necessary leak repairs, if any, that do not require any additional time beyond the initial 30 or 120 days.

- (i) The owners or operators of industrial process refrigeration equipment are permitted more than 30 days (or 120 days where an industrial process shutdown in accordance with paragraph (i)(2)(ii) of this section is required) to repair leaks, if the necessary parts are unavailable or if requirements of other applicable federal, state, or local regulations make a repair within 30 or 120 days impossible. Only the additional time needed to receive delivery of the necessary parts or to comply with the pertinent regulations will be permitted.
 - (ii) Owners or operators of industrial process refrigeration equipment will have a 120-day repair period, rather than a 30-day repair period, to repair leaks in instances where an industrial process shutdown is needed to repair a leak or leaks from industrial process refrigeration equipment.
- (3) Owners or operators of industrial process refrigeration equipment and owners or operators of federally-owned commercial refrigeration equipment or of federally-owned comfort cooling appliances who are granted additional time under paragraphs (i)(1) or (i)(5) of this section, must have repairs performed in a manner that sound professional judgment indicates will bring the leak rate below the applicable allowable leak rate. When an industrial process shutdown has occurred or when repairs have been made while an appliance is mothballed, the owners or operators shall conduct an initial verification test at the conclusion of the repairs and a follow-up verification test. The follow-up verification test shall be conducted within 30 days of completing the repairs or within 30 days of bringing the appliance back on-line, if taken off-line, but no sooner than when the appliance has achieved normal operating characteristics and conditions. When repairs have been conducted without an industrial process shutdown or system mothballing, an initial verification test shall be conducted at the conclusion of the repairs, and a follow-up verification test shall be conducted within 30 days of the initial verification test. In all cases, the follow-up verification test shall be conducted at normal operating characteristics and conditions, unless sound professional judgment indicates that tests performed at normal operating characteristics and conditions will produce less reliable results, in which case the follow-up verification test shall be conducted at or near the normal operating pressure where practicable, and at or near the normal operating temperature where practicable.
- (i) If the owners or operators of industrial process refrigeration equipment takes the appliance off-line, or if the owners or operators of federally-owned commercial refrigeration or of federally-owned comfort cooling appliances who are granted additional time under paragraphs (i)(1) or (i)(5) of this section take the appliance off-line, they cannot bring the appliance back on-line until an initial verification test indicates that the repairs undertaken in accordance with paragraphs (i)(1)(i), (ii), (iii), or (i)(2)(i) and (ii), or (5)(i), (ii), and (iii) of this section have been successfully completed, demonstrating the leak or leaks are repaired. The owners or operators of the industrial process refrigeration equipment, federally-owned commercial refrigeration appliances, or federally-owned comfort cooling appliances are exempted from this requirement only where the owners or operators will retrofit or retire the industrial process refrigeration equipment, federally-owned commercial refrigeration appliance, or federally-owned comfort cooling appliance in accordance with paragraph (i)(6) of this section. Under this exemption, the

owner or operators may bring the industrial process refrigeration equipment, federally-owned commercial refrigeration appliance, or federally-owned comfort cooling appliance back on-line without successful completion of an initial verification test.

- (ii) If the follow-up verification test indicates that the repairs to industrial process refrigeration equipment, federally-owned commercial refrigeration equipment, or federally-owned comfort cooling appliances have not been successful, the owner or operator must retrofit or retire the equipment in accordance with paragraph (i)(6) and any such longer time period as may apply under paragraphs (i)(7)(i), (ii) and (iii) or (i)(8)(i) and (ii) of this section. The owners and operators of the industrial process refrigeration equipment, federally-owned commercial refrigeration equipment, or federally-owned comfort cooling appliances are relieved of this requirement if the conditions of paragraphs (i)(3)(iv) and/or (i)(3)(v) of this section are met.
 - (iii) The owner or operator of industrial process refrigeration equipment that fails a follow-up verification test must notify EPA within 30 days of the failed follow-up verification test in accordance with § 82.166(n).
 - (iv) The owner or operator is relieved of the obligation to retrofit or replace the industrial process refrigeration equipment as discussed in paragraph (i)(6) of this section if second repair efforts to fix the same leaks that were the subject of the first repair efforts are successfully completed within 30 days or 120 days where an industrial process shutdown is required, after the initial failed follow-up verification test. The second repair efforts are subject to the same verification requirements of paragraphs (i)(3), (i)(3)(i) and (ii) of this section. The owner or operator is required to notify EPA within 30 days of the successful follow-up verification test in accordance with § 82.166(n) and the owner or operator is no longer subject to the obligation to retrofit or replace the appliance that arose as a consequence of the initial failure to verify that the leak repair efforts were successful.
 - (v) The owner or operator of industrial process refrigeration equipment is relieved of the obligation to retrofit or replace the equipment in accordance with paragraph (i)(6) of this section if within 180 days of the initial failed follow-up verification test, the owner or operator establishes that the appliance's annual leak rate does not exceed the applicable allowable annual leak rate, in accordance with paragraph (i)(4) of this section. If the appliance's owner or operator establishes that the appliance's annual leak rate does not exceed the applicable allowable annual leak rate, the owner or operator is required to notify EPA within 30 days of that determination in accordance with § 82.166(n) and the owner or operator would no longer be subject to the obligation to retrofit or replace the equipment that arose as a consequence of the initial failure to verify that the leak repair efforts were successful.
- (4) In the case of a failed follow-up verification test subject to paragraph (i)(3)(v) of this section, the determination of whether industrial process refrigeration equipment has an annual leak rate that exceeds the applicable allowable annual leak rate will be made in accordance with parameters identified by the owner or operator in its notice to EPA regarding the failure of the initial follow-up verification test, if those parameters are acceptable to EPA; otherwise by parameters selected by EPA. The determination must be based on the full charge for the affected industrial process refrigeration equipment. The leak rate determination parameters in the owner's or operator's notice will be considered acceptable unless EPA notifies the owners or operators within 30 days of receipt of the notice. Where EPA does not accept the parameters identified by the owner or operator in its notice, EPA will not provide additional time beyond the additional time permitted in paragraph (i)(3)(v) of this section unless specifically stated in the parameters selected by EPA.

- (5) Owners or operators of comfort cooling appliances normally containing more than 50 pounds of refrigerant and not covered by paragraph (i)(1) or (i)(2) of this section must have leaks repaired in accordance with paragraph (i)(9) of this section if the appliance is leaking at a rate such that the loss of refrigerant will exceed 15 percent of the total charge during a 12-month period, except as described in paragraphs (i)(6), (i)(8) and (i)(10) of this section and paragraphs (i)(5)(i), (i)(5)(ii) and (i)(5)(iii) of this section. Repairs must bring the annual leak rate to below 15 percent.
 - (i) If the owners or operators of federally-owned comfort-cooling appliances determine that the leaks cannot be repaired in accordance with paragraph (i)(9) of this section and that an extension in accordance with the requirements discussed in paragraph (i)(5) of this section apply, they must document all repair efforts, and notify EPA of their inability to comply within the 30-day repair requirement, and the reason for the inability must be submitted to EPA in accordance with § 82.166(n). Such notification must be made within 30 days of discovering that leak repair efforts cannot be completed within 30 days.
 - (ii) Owners or operators of federally-owned comfort-cooling appliances may have more than 30 days to repair leaks where the refrigeration appliance is located in an area subject to radiological contamination or where the shutting down of the appliance will directly lead to radiological contamination. Only the additional time needed to conduct and complete work in a safe environment will be permitted.
 - (iii) Owners or operators of federally-owned comfort-cooling appliances requesting, or who are granted, time extensions under this paragraph must comply with paragraphs (i)(3) and (i)(4) of this section.
- (6) Owners or operators are not required to repair leaks as provided in paragraphs (i)(1), (i)(2), and (i)(5) of this section if, within 30 days of discovering a leak greater than the applicable allowable leak rate, or within 30 days of a failed follow-up verification test, or after making good faith efforts to repair the leaks as described in paragraph (i)(6)(i) of this section, they develop a one-year retrofit or retirement plan for the leaking appliance. Owners or operators who decide to retrofit the appliance must use a refrigerant or substitute with a lower or equivalent ozone-depleting potential than the previous refrigerant and must include such a change in the retrofit plan. Owners or operators who retire and replace the appliance must replace the appliance with an appliance that uses a refrigerant or substitute with a lower or equivalent ozone-depleting potential and must include such a change in the retirement plan. The retrofit or retirement plan (or a legible copy) must be kept at the site of the appliance. The original plan must be made available for EPA inspection upon request. The plan must be dated, and all work performed in accordance with the plan must be completed within one year of the plan's date, except as described in paragraphs (i)(6)(i), (i)(7), and (i)(8) of this section. Owners or operators are temporarily relieved of this obligation if the appliance has undergone system mothballing as defined in § 82.152.
 - (i) If the owner or operator has made good faith efforts to repair leaks from the appliance in accordance with paragraphs (i)(1), (i)(2), or (i)(5) of this section and has decided prior to completing a follow-up verification test, to retrofit or retire the appliance in accordance with paragraph (i)(6) of this section, the owner or operator must develop a retrofit or retirement plan within 30 days of the decision to retrofit or retire the appliance. The owner or operator must complete the retrofit or retirement of the appliance within one year and 30 days of when the owner or operator discovered that the leak rate exceeded the applicable allowable leak rate, except as provided in paragraphs (i)(7) and (i)(8) of this section.

- (ii) In all cases, subject to paragraph (i)(6)(i) of this section, the written plan shall be prepared no later than 30 days after the owner or operator has determined to proceed with retrofitting or retiring the appliance. All reports required under § 82.166(o) shall be due at the time specified in the paragraph imposing the specific reporting requirement, or no later than 30 days after the decision to retrofit or retire the appliance, whichever is later.
 - (iii) In cases where the owner or operator of industrial process refrigeration equipment has made good faith efforts to retrofit or retire industrial process refrigeration equipment prior to August 8, 1995, and where these efforts are not complete, the owner or operator must develop a retrofit or retirement plan that will complete the retrofit or retirement of the affected appliance by August 8, 1996. This plan (or a legible copy) must be kept at the site of the appliance. The original must be made available for EPA inspection upon request. Where the conditions of paragraphs (i)(7) and (i)(8) of this section apply, and where the length of time necessary to complete the work is beyond August 8, 1996, all records must be submitted to EPA in accordance with § 82.166(o), as well as maintained on-site.
- (7) The owners or operators of industrial process refrigeration equipment will be allowed additional time to complete the retrofit or retirement of industrial process refrigeration equipment if the conditions described in paragraphs (i)(7)(i) or (i)(7)(ii) of this section are met. The owners or operators of industrial process refrigeration equipment will be allowed additional time beyond the additional time provided in paragraph (i)(7)(ii) of this section if the conditions described in paragraph (i)(7)(iii) of this section are met.
 - (i) Additional time, to the extent reasonably necessary will be allowed for retrofitting or retiring industrial process refrigeration equipment due to delays occasioned by the requirements of other applicable federal, state, or local laws or regulations, or due to the unavailability of a suitable replacement refrigerant with a lower ozone depletion potential. If these circumstances apply, the owner or operator of the facility must notify EPA within six months after the 30-day period following the discovery of an exceedance of the 35 percent leak rate. Records necessary to allow EPA to determine that these provisions apply and the length of time necessary to complete the work must be submitted to EPA in accordance with § 82.166(o), as well as maintained on-site. EPA will notify the owner or operator of its determination within 60 days of receipt the submittal.
 - (ii) An additional one-year period beyond the initial one-year retrofit period is allowed for industrial process refrigeration equipment where the following criteria are met:
 - (A) The new or the retrofitted industrial process refrigerant equipment is custom-built;
 - (B) The supplier of the appliance or one or more of its critical components has quoted a delivery time of more than 30 weeks from when the order is placed;
 - (C) The owner or operator notifies EPA within six months of the expiration of the 30-day period following the discovery of an exceedance of the 35 percent leak rate to identify the owner or operator, describe the appliance involved, explain why more than one year is needed, and demonstrate that the first two criteria are met in accordance with § 82.166(o); and
 - (D) The owner or operator maintains records that are adequate to allow a determination that the criteria are met.

- (iii) The owners or operators of industrial process refrigeration equipment may request additional time to complete retrofitting or retiring industrial process refrigeration equipment beyond the additional one-year period if needed and where the initial additional one year was granted in accordance with paragraph (i)(7)(ii) of this section. The request shall be submitted to EPA before the end of the ninth month of the first additional year and shall include revisions of information required under § 82.166(o). Unless EPA objects to this request submitted in accordance with § 82.166(o) within 30 days of receipt, it shall be deemed approved.
- (8) Owners or operators of federally-owned commercial or comfort-cooling appliances will be allowed an additional year to complete the retrofit or retirement of the appliances if the conditions described in paragraph (i)(8)(i) of this section are met, and will be allowed one year beyond the additional year if the conditions in paragraph (i)(8)(ii) of this section are met.
 - (i) Up to one additional one-year period beyond the initial one-year retrofit period is allowed for such equipment where the following criteria are met:
 - (A) Due to complications presented by the federal agency appropriations and/or procurement process, a delivery time of more than 30 weeks from the beginning of the official procurement process is quoted, or where the appliance is located in an area subject to radiological contamination and creating a safe working environment will require more than 30 weeks;
 - (B) The operator notifies EPA within six months of the expiration of the 30-day period following the discovery of an exceedance of the applicable allowable annual leak rate to identify the operator, describe the appliance involved, explain why more than one year is needed, and demonstrate that the first criterion is met in accordance with § 82.166(o); and
 - (C) The operator maintains records adequate to allow a determination that the criteria are met.
 - (ii) The owners or operators of federally-owned commercial or comfort-cooling appliances may request additional time to complete retrofitting, replacement or retiring such appliances beyond the additional one-year period if needed and where the initial additional one year was granted in accordance with paragraph (i)(8)(i) of this section. The request shall be submitted to EPA before the end of the ninth month of the first additional year and shall include revisions of information earlier submitted as required under § 82.166(o). Unless EPA objects to this request submitted in accordance with § 82.166(o) within 30 days of receipt, it shall be deemed approved.
- (9) Owners or operators must repair leaks pursuant to paragraphs (i)(1), (i)(2) and (i)(5) of this section within 30 days after discovery, or within 30 days after when the leaks should have been discovered if the owners intentionally shielded themselves from information which would have revealed a leak, unless granted additional time pursuant to § 82.156(i).
- (10) The amount of time for owners and operators to complete repairs, retrofit plans or retrofits/ replacements/ retirements under paragraphs (i)(1), (i)(2), (i)(5), (i)(6), (i)(7), (i)(8), and (i)(9) of this section is temporarily suspended at the time an appliance is mothballed as defined in § 82.152. The time for owners and operators to complete repairs, retrofit plans, or retrofits/replacements will resume on the day the appliance is brought back on-line and is no longer considered mothballed. All initial and follow-up verification tests must be performed in accordance with paragraphs (i)(3), (i)(3)(i), and (i)(3)(ii) of this section.

(11) In calculating annual leak rates, purged refrigerant that is destroyed at a verifiable destruction efficiency of 98 percent or greater will not be counted toward the leak rate. Owners or operators destroying purged refrigerants must maintain information as set forth in § 82.166(p)(1) and submit to EPA, within 60 days after the first time such exclusion is used by that facility, information set forth in § 82.166(p)(2).

(j) **Definitions for the leak repair provisions in 82.156(i).** These definitions are not applicable to any other portion of subpart F other than 82.156(i). Along with paragraph (i) of this section, the definitions in this section apply only until January 1, 2019.

Appliance means, for the purposes of paragraph (i) of this section, any device which contains and uses a refrigerant and which is used for household or commercial purposes, including any air conditioner, refrigerator, chiller, or freezer.

Commercial refrigeration means, for the purposes of paragraph (i) of this section, the refrigeration appliances utilized in the retail food and cold storage warehouse sectors. Retail food includes the refrigeration equipment found in supermarkets, convenience stores, restaurants and other food service establishments. Cold storage includes the equipment used to store meat, produce, dairy products, and other perishable goods. All of the equipment contains large refrigerant charges, typically over 75 pounds.

Critical component means, for the purposes of paragraph (i) of this section, a component without which industrial process refrigeration equipment will not function, will be unsafe in its intended environment, and/or will be subject to failures that would cause the industrial process served by the refrigeration appliance to be unsafe.

Custom-built means, for the purposes of paragraph (i) of this section, that the equipment or any of its critical components cannot be purchased and/or installed without being uniquely designed, fabricated and/or assembled to satisfy a specific set of industrial process conditions.

Follow-up verification test means, for the purposes of paragraph (i) of this section, those tests that involve checking the repairs within 30 days of the appliance's returning to normal operating characteristics and conditions. Follow-up verification tests for appliances from which the refrigerant charge has been evacuated means a test conducted after the appliance or portion of the appliance has resumed operation at normal operating characteristics and conditions of temperature and pressure, except in cases where sound professional judgment dictates that these tests will be more meaningful if performed prior to the return to normal operating characteristics and conditions. A follow-up verification test with respect to repairs conducted without evacuation of the refrigerant charge means a reverification test conducted after the initial verification test and usually within 30 days of normal operating conditions. Where an appliance is not evacuated, it is only necessary to conclude any required changes in pressure, temperature or other conditions to return the appliance to normal operating characteristics and conditions.

Full charge means, for the purposes of paragraph (i) of this section, the amount of refrigerant required for normal operating characteristics and conditions of the appliance as determined by using one or a combination of the following four methods:

- (i) Use the equipment manufacturer's determination of the correct full charge for the equipment;
- (ii) Determine the full charge by making appropriate calculations based on component sizes, density of refrigerant, volume of piping, and other relevant considerations;

- (iii) Use actual measurements of the amount of refrigerant added or evacuated from the appliance; and/or
- (iv) Use an established range based on the best available data regarding the normal operating characteristics and conditions for the appliance, where the midpoint of the range will serve as the full charge, and where records are maintained in accordance with § 82.166(q).

Industrial process refrigeration means, for the purposes of paragraph (i) of this section, complex customized appliances used in the chemical, pharmaceutical, petrochemical and manufacturing industries. These appliances are directly linked to the industrial process. This sector also includes industrial ice machines, appliances used directly in the generation of electricity, and ice rinks. Where one appliance is used for both industrial process refrigeration and other applications, it will be considered industrial process refrigeration equipment if 50 percent or more of its operating capacity is used for industrial process refrigeration.

Industrial process shutdown means, for the purposes of paragraph (i) of this section, that an industrial process or facility temporarily ceases to operate or manufacture whatever is being produced at that facility.

Initial verification test means, for the purposes of paragraph (i) of this section, those leak tests that are conducted as soon as practicable after the repair is completed. An initial verification test, with regard to the leak repairs that require the evacuation of the appliance or portion of the appliance, means a test conducted prior to the replacement of the full refrigerant charge and before the appliance or portion of the appliance has reached operation at normal operating characteristics and conditions of temperature and pressure. An initial verification test with regard to repairs conducted without the evacuation of the refrigerant charge means a test conducted as soon as practicable after the conclusion of the repair work.

Leak rate means, for the purposes of paragraph (i) of this section, the rate at which an appliance is losing refrigerant, measured between refrigerant charges. The leak rate is expressed in terms of the percentage of the appliance's full charge that would be lost over a 12-month period if the current rate of loss were to continue over that period. The rate is calculated using only one of the following methods for all appliances located at an operating facility.

(i) Method 1.

- (A) Step 1. Take the number of pounds of refrigerant added to the appliance to return it to a full charge and divide it by the number of pounds of refrigerant the appliance normally contains at full charge;
- (B) Step 2. Take the shorter of the number of days that have passed since the last day refrigerant was added or 365 days and divide that number by 365 days;
- (C) Step 3. Take the number calculated in Step 1. and divide it by the number calculated in Step 2.; and
- (D) Step 4. Multiply the number calculated in Step 3. by 100 to calculate a percentage. This method is summarized in the following formula:

$$\text{Leak rate} = \frac{\text{pounds of refrigerant added}}{\text{pounds of refrigerant in full charge}} \times \frac{365 \text{ days/year}}{\text{shorter of: \# days since refrigerant last added or 365 days}} \times 100\%$$

(% per year)

(ii) Method 2.

- (A) Step 1. Take the sum of the quantity of refrigerant added to the appliance over the previous 365-day period (or over the period that has passed since leaks in the appliance were last repaired, if that period is less than one year),
- (B) Step 2. Divide the result of Step 1. by the quantity (e.g., pounds) of refrigerant the appliance normally contains at full charge, and
- (C) Step 3. Multiply the result of Step 2. by 100 to obtain a percentage. This method is summarized in the following formula:

$$\text{Leak rate} = \frac{\text{pounds of refrigerant added over past 365 days (or since leaks were last repaired, if that period is less than one year)}}{\text{pounds of refrigerant in full charge}} \times 100\%$$

(% per year)

Normal operating characteristics or conditions means, for the purposes of paragraph (i) of this section, temperatures, pressures, fluid flows, speeds and other characteristics that would normally be expected for a given process load and ambient condition during operation. Normal operating characteristics and conditions are marked by the absence of atypical conditions affecting the operation of the refrigeration appliance.

Normally containing a quantity of refrigerant means, for the purposes of paragraph (i) of this section, containing the quantity of refrigerant within the appliance or appliance component when the appliance is operating with a full charge of refrigerant.

Refrigerant means, for the purposes of paragraph (i) of this section, any substance consisting in part or whole of a class I or class II ozone-depleting substance that is used for heat transfer purposes and provides a cooling effect.

Substitute means, for the purposes of paragraph (i) of this section, any chemical or product, whether existing or new, that is used by any person as an EPA approved replacement for a class I or II ozone-depleting substance in a given refrigeration or air-conditioning end-use.

Suitable replacement refrigerant means, for the purposes of paragraph (i) of this section, a refrigerant that is acceptable under section 612(c) of the Clean Air Act Amendments of 1990 and all regulations promulgated under that section, compatible with other materials with which it may come into contact, and able to achieve the temperatures required for the affected industrial process in a technically feasible manner.

System mothballing means, for the purposes of paragraph (i) of this section, the intentional shutting down of a refrigeration appliance undertaken for an extended period of time by the owners or operators of that facility, where the refrigerant has been evacuated from the appliance or the affected isolated section of the appliance, at least to atmospheric pressure.

[58 FR 28712, May 14, 1993, as amended at 59 FR 42956, 42962, Aug. 19, 1994; 59 FR 55926, Nov. 9, 1994; 60 FR 40440, Aug. 8, 1995; 68 FR 43807, July 24, 2003; 69 FR 11979, Mar. 12, 2004; 70 FR 1991, Jan. 11, 2005; 79 FR 29690, May 23, 2014; 8a FR 82354, Nov. 18, 2016]

§ 82.157 Appliance maintenance and leak repair.

- (a) **Applicability.** This section applies as of January 1, 2019. As of April 10, 2020, this section applies only to appliances with a full charge of 50 or more pounds of any class I or class II refrigerant or blend containing a class I or class II refrigerant. Notwithstanding the use of the term refrigerant in this section, the requirements of this section do not apply to appliances containing solely substitute refrigerants. Unless otherwise specified, the requirements of this section apply to the owner or operator of the appliance.
- (b) **Leak Rate Calculation.** Persons adding or removing refrigerant from an appliance must, upon conclusion of that service, provide the owner or operator with documentation that meets the applicable requirements of paragraph (l)(2) of this section. The owner or operator must calculate the leak rate every time refrigerant is added to an appliance unless the addition is made immediately following a retrofit, installation of a new appliance, or qualifies as a seasonal variance.
- (c) **Requirement to Address Leaks through Appliance Repair, or Retrofitting or Retiring an Appliance.**
 - (1) Owners or operators must repair appliances with a leak rate over the applicable leak rate in this paragraph in accordance with paragraphs (d) through (f) of this section unless the owner or operator elects to retrofit or retire the appliance in compliance with paragraphs (h) and (i) of this section. If the owner or operator elects to repair leaks, but fails to bring the leak rate below the applicable leak rate, the owner or operator must create and implement a retrofit or retirement plan in accordance with paragraphs (h) and (i) of this section.
 - (2) Leak Rates:
 - (i) 20 percent leak rate for commercial refrigeration equipment;
 - (ii) 30 percent leak rate for industrial process refrigeration equipment; and
 - (iii) 10 percent leak rate for comfort cooling appliances or other appliances with a full charge of 50 or more pounds of refrigerant not covered by (c)(2)(i) or (ii) of this section.
- (d) **Appliance Repair.** Owners or operators must identify and repair leaks in accordance with this paragraph within 30 days (or 120 days if an industrial process shutdown is required) of when refrigerant is added to an appliance exceeding the applicable leak rate in paragraph (c) of this section.
 - (1) A certified technician must conduct a leak inspection, as described in paragraph (g) of this section, to identify the location of leaks.
 - (2) Leaks must be repaired such that the leak rate is brought below the applicable leak rate. This must be confirmed by the leak rate calculation performed upon the next refrigerant addition. The leaks will be presumed to be repaired if there is no further refrigerant addition for 12 months after the repair or if the leak inspections required under paragraph (g) do not find any leaks in the appliance. Repair of leaks must be documented by both an initial and a follow-up verification test or tests.
 - (3) The time frames in paragraphs (d) through (f) of this section are temporarily suspended when an appliance is mothballed. The time will resume on the day additional refrigerant is added to the appliance (or component of an appliance if the leaking component was isolated).
- (e) **Verification tests.** The owner or operator must conduct both initial and follow-up verification tests on each leak that was repaired under paragraph (d) of this section.

- (1) **Initial verification test.** Unless granted additional time, an initial verification test must be performed within 30 days (or 120 days if an industrial process shutdown is required) of an appliance exceeding the applicable leak rate in paragraph (c) of this section. An initial verification test must demonstrate that leaks where a repair attempt was made are repaired.
 - (i) For repairs that can be completed without the need to open or evacuate the appliance, the test must be performed after the conclusion of the repair work and before any additional refrigerant is added to the appliance.
 - (ii) For repairs that require the evacuation of the appliance or portion of the appliance, the test must be performed before adding any refrigerant to the appliance.
 - (iii) If the initial verification test indicates that the repairs have not been successful, the owner or operator may conduct as many additional repairs and initial verification tests as needed within the applicable time period.
- (2) **Follow-up verification test.** A follow-up verification test must be performed within 10 days of the successful initial verification test or 10 days of the appliance reaching normal operating characteristics and conditions (if the appliance or isolated component was evacuated for the repair(s)). Where it is unsafe to be present or otherwise impossible to conduct a follow-up verification test when the system is operating at normal operating characteristics and conditions, the verification test must, where practicable, be conducted prior to the system returning to normal operating characteristics and conditions.
 - (i) A follow-up verification test must demonstrate that leaks where a repair attempt was made are repaired. If the follow-up verification test indicates that the repairs have not been successful, the owner or operator may conduct as many additional repairs and verification tests as needed to bring the appliance below the leak rate within the applicable time period and to verify the repairs.
- (f) **Extensions to the appliance repair deadlines.** Owners or operators are permitted more than 30 days (or 120 days if an industrial process shutdown is required) to comply with paragraphs (d) and (e) of this section if they meet the requirements of (f)(1) through (4) of this section or the appliance is mothballed. The request will be considered approved unless EPA notifies the owners or operators otherwise.
 - (1) One or more of the following conditions must apply:
 - (i) The appliance is located in an area subject to radiological contamination or shutting down the appliance will directly lead to radiological contamination. Additional time is permitted to the extent needed to conduct and finish repairs in a safe working environment.
 - (ii) Requirements of other applicable Federal, state, or local regulations make a repair within 30 days (or 120 days if an industrial process shutdown is required) impossible. Additional time is permitted to the extent needed to comply with the pertinent regulations.
 - (iii) Components that must be replaced as part of the repair are not available within 30 days (or 120 days if an industrial process shutdown is required). Additional time is permitted up to 30 days after receiving delivery of the necessary components, not to exceed 180 days (or 270 days if an industrial process shutdown is required) from the date the appliance exceeded the applicable leak rate.

- (2) Repairs to leaks that the technician has identified as significantly contributing to the exceedance of the leak rate and that do not require additional time must be completed and verified within the initial 30 day repair period (or 120 day repair period if an industrial process shutdown is required);
- (3) The owner or operator must document all repair efforts and the reason for the inability to make the repair within the initial 30 day repair period (or 120 day repair period if an industrial process shutdown is required); and
- (4) The owner or operator must request an extension from EPA at the address specified in paragraph (m) of this section within 30 days (or 120 days if an industrial process shutdown is required) of the appliance exceeding the applicable leak rate in paragraph (c) of this section. Extension requests must include: Identification and address of the facility; the name of the owner or operator of the appliance; the leak rate; the method used to determine the leak rate and full charge; the date the appliance exceeded the applicable leak rate; the location of leak(s) to the extent determined to date; any repair work that has been performed thus far, including the date that work was completed; the reasons why more than 30 days (or 120 days if an industrial process shutdown is required) are needed to complete the repair; and an estimate of when the work will be completed. If the estimated completion date is to be extended, a new estimated date of completion and documentation of the reason for that change must be submitted to EPA within 30 days of identifying that the completion date must be extended. The owner or operator must keep a dated copy of this submission.

(g) *Leak Inspections.*

- (1) The owner or operator must conduct a leak inspection in accordance with the following schedule on any appliance exceeding the applicable leak rate in paragraph (c)(2) of this section.
 - (i) For commercial refrigeration and industrial process refrigeration appliances with a full charge of 500 or more pounds, leak inspections must be conducted once every three months until the owner or operator can demonstrate through the leak rate calculations required under paragraph (b) of this section that the appliance has not leaked in excess of the applicable leak rate for four quarters in a row.
 - (ii) For commercial refrigeration and industrial process refrigeration appliances with a full charge of 50 or more pounds but less than 500 pounds, leak inspections must be conducted once per calendar year until the owner or operator can demonstrate through the leak rate calculations required under paragraph (b) of this section that the appliance has not leaked in excess of the applicable leak rate for one year.
 - (iii) For comfort cooling appliances and other appliances not covered by paragraphs (g)(1)(i) and (ii) of this section, leak inspections must be conducted once per calendar year until the owner or operator can demonstrate through the leak rate calculations required under paragraph (b) of this section that the appliance has not leaked in excess of the applicable leak rate for one year.
- (2) Leak inspections must be conducted by a certified technician using method(s) determined by the technician to be appropriate for that appliance.
- (3) All visible and accessible components of an appliance must be inspected, with the following exceptions:
 - (i) Where components are insulated, under ice that forms on the outside of equipment, underground, behind walls, or are otherwise inaccessible;
 - (ii) Where personnel must be elevated more than two meters above a support surface; or

(iii) Where components are unsafe to inspect, as determined by site personnel.

(4) Quarterly or annual leak inspections are not required on appliances, or portions of appliances, continuously monitored by an automatic leak detection system that is audited or calibrated annually. An automatic leak detection system may directly detect refrigerant in air, monitor its surrounding in a manner other than detecting refrigerant concentrations in air, or monitor conditions of the appliance.

(i) For systems that directly detect the presence of a refrigerant in air, the system must:

(A) Only be used to monitor components located inside an enclosed building or structure;

(B) Have sensors or intakes placed so that they will continuously monitor the refrigerant concentrations in air in proximity to the compressor, evaporator, condenser, and other areas with a high potential for a refrigerant leak;

(C) Accurately detect a concentration level of 10 parts per million of vapor of the specific refrigerant or refrigerants used in the refrigeration appliance(s); and

(D) Alert the owner or operator when a refrigerant concentration of 100 parts per million of vapor of the specific refrigerant or refrigerants used in the refrigeration appliance(s) is reached.

(ii) For a system that monitors its surrounding in a manner other than detecting refrigerant concentrations in air or monitor conditions of the appliance, the system must automatically alert the owner or operator when measurements indicate a loss of 50 pounds of refrigerant or 10 percent of the full charge, whichever is less.

(iii) When automatic leak detection equipment is only being used to monitor portions of an appliance, the remainder of the appliance continues to be subject to any applicable leak inspection requirements.

(h) ***Retrofit or retirement plans.***

(1) The owner or operator must create a retrofit or retirement plan within 30 days of:

(i) an appliance leaking above the applicable leak rate in paragraph (c) of this section if the owner or operator intends to retrofit or retire rather than repair the leak;

(ii) an appliance leaking above the applicable leak rate in paragraph (c) of this section if the owner or operator fails to take any action to identify or repair the leak; or

(iii) an appliance continues to leak above the applicable leak rate after having conducted the required repairs and verification tests under paragraphs (d) and (e) of this section.

(2) A retrofit or retirement plan must, at a minimum, contain the following information:

(i) Identification and location of the appliance;

(ii) Type and full charge of the refrigerant used in the appliance;

(iii) Type and full charge of the refrigerant to which the appliance will be converted, if retrofitted;

(iv) Itemized procedure for converting the appliance to a different refrigerant, including changes required for compatibility with the new substitute, if retrofitted;

(v) Plan for the disposition of recovered refrigerant;

- (vi) Plan for the disposition of the appliance, if retired; and
 - (vii) A schedule, not to exceed one-year, for completion of the appliance retrofit or retirement.
- (3) The retrofit or retirement plan must be signed by an authorized company official, dated, accessible at the site of the appliance in paper copy or electronic format, and available for EPA inspection upon request.
- (4) All identified leaks must be repaired as part of any retrofit under such a plan.
- (5)
- (i) Unless granted additional time, all work performed in accordance with the plan must be finished within one year of the plan's date (not to exceed 13 months from when the plan was required in paragraph (h)(1) of this section).
 - (ii) The owner or operator may request that EPA relieve it of the obligation to retrofit or retire an appliance if the owner or operator can establish within 180 days of the plan's date that the appliance no longer exceeds the applicable leak rate and if the owner or operator agrees in writing to repair all identified leaks within one year of the plan's date consistent with paragraph (h)(4) and (h)(5)(i) of this section. The owner or operator must submit to EPA the retrofit or retirement plan as well as the following information: The date that the requirement to develop a retrofit or retirement plan was triggered; the leak rate; the method used to determine the leak rate and full charge; the location of the leak(s) identified in the leak inspection; a description of repair work that has been completed; a description of repair work that has not been completed; a description of why the repair was not conducted within the time frames required under paragraphs (d) and (f) of this section; and a statement signed by an authorized official that all identified leaks will be repaired and an estimate of when those repairs will be completed (not to exceed one year from date of the plan). The request will be considered approved unless EPA notifies the owners or operators within 60 days of receipt of the request that it is not approved.
- (i) ***Extensions to the one-year retrofit or retirement schedule.*** Owners or operators may request more than one year to comply with paragraph (h) of this section if they meet the requirements of this paragraph. The request will be considered approved unless EPA notifies the owners or operators within 60 days of receipt of the request that it is not approved. The request must be submitted to EPA at the address specified in § 82.157(m) within seven months of discovering the appliance exceeded the applicable leak rate. The request must include the identification of the appliance; name of the owner or operator; the leak rate; the method used to determine the leak rate and full charge; the date the appliance exceeded the applicable leak rate; the location of leaks(s) to the extent determined to date; any repair work that has been finished thus far, including the date that work was finished; a plan to finish the retrofit or retirement of the appliance; the reasons why more than one year is necessary to retrofit or retire the appliance; the date of notification to EPA; and an estimate of when retrofit or retirement work will be finished. A dated copy of the request must be available on-site in either electronic or paper copy. If the estimated completion date is to be revised, a new estimated date of completion and documentation of the reason for that change must be submitted to EPA at the address specified in § 82.157(m) within 30 days. Additionally, the time frames in paragraphs (h) and (i) of this section are temporarily suspended when an appliance is mothballed. The time will resume running on the day additional refrigerant is added to the appliance (or component of an appliance if the leaking component was isolated).

- (1) **Extensions available to any appliance.** Owners or operators of commercial refrigeration, industrial process refrigeration, comfort-cooling, or other equipment are automatically allowed 18 months to retire an appliance if the replacement appliance uses a substitute refrigerant exempted under § 82.154(a).
- (2) **Extensions available to industrial process refrigeration.** Owners or operators of industrial process refrigeration equipment may request additional time beyond the one-year period in paragraph (h) of this section to finish the retrofit or retirement under the following circumstances:
 - (i) Requirements of other applicable Federal, state, or local regulations make a retrofit or retirement within one year impossible. Additional time is permitted to the extent needed to comply with the pertinent regulations;
 - (ii) The new or the retrofitted equipment is custom-built as defined in this subpart and the supplier of the appliance or one of its components has quoted a delivery time of more than 30 weeks from when the order is placed. The appliance or appliance components must be installed within 120 days after receiving delivery of the necessary parts; or
 - (iii) After receiving an extension under paragraph (i)(2)(ii) of this section, owners or operators may request additional time if necessary to finish the retrofit or retirement of equipment. The request must be submitted to EPA before the end of the ninth month of the initial extension and must include the same information submitted for that extension, with any necessary revisions. A dated copy of the request must be available on-site in either electronic or paper copy. The request will be considered approved unless EPA notifies the owners or operators within 60 days of receipt of the request that it is not approved.
- (3) **Extensions available to Federally owned equipment.** Owners or operators of federally owned commercial or comfort-cooling equipment may request an additional year beyond the one-year period in paragraph (h) of this section to finish the retrofit or retirement under the following circumstances:
 - (i) A delivery time of more than 30 weeks from the beginning of the official procurement process is quoted due to complications presented by the Federal agency appropriations and/or procurement process;
 - (ii) The appliance is located in an area subject to radiological contamination and creating a safe working environment will require more than 30 weeks; or
 - (iii) After receiving a one-year extension under paragraphs (i)(3)(i) or (ii) of this section, additional time may be requested if necessary to finish the retrofit or retirement of equipment. The request must be submitted to EPA before the end of the ninth month of the one-year extension and must include the same information submitted for that one-year extension, with any necessary revisions. A dated copy of the request must be available on-site in either electronic or paper copy. The request will be considered approved unless EPA notifies the owners or operators within 60 days of receipt of the request that it is not approved.
- (j) **Chronically leaking appliances.** Owners or operators of appliances containing 50 pounds or more of refrigerant that leak 125 percent or more of the full charge in a calendar year must submit a report to EPA at the address in paragraph (m) of this section. This report must be submitted by March 1 of the subsequent year and describe efforts to identify leaks and repair the appliance.

- (k) **Purged refrigerant.** In calculating annual leak rates, purged refrigerant that is destroyed at a verifiable destruction efficiency of 98 percent or greater will not be counted toward the leak rate.
- (l) **Recordkeeping.** All records identified in this paragraph must be kept for at least three years in electronic or paper format, unless otherwise specified.
 - (1) Owners or operators must determine the full charge of all appliances with 50 or more pounds of refrigerant and maintain the following information for each appliance until three years after the appliance is retired:
 - (i) The identification of the owner or operator of the appliance;
 - (ii) The address where the appliance is located;
 - (iii) The full charge of the appliance and the method for how the full charge was determined;
 - (iv) If using method 4 (using an established range) for determining full charge, records must include the range for the full charge of the appliance, its midpoint, and how the range was determined;
 - (v) Any revisions of the full charge, how they were determined, and the dates such revisions occurred.
 - (2) Owners or operators must maintain a record including the following information for each time an appliance with a full charge of 50 or more pounds is maintained, serviced, repaired, or disposed of, when applicable. If the maintenance, service, repair, or disposal is done by someone other than the owner or operator, that person must provide a record containing the following information, with the exception of (l)(2)(vii) and (viii) of this section, to the owner or operator:
 - (i) The identity and location of the appliance;
 - (ii) The date of the maintenance, service, repair, or disposal performed;
 - (iii) The part(s) of the appliance being maintained, serviced, repaired, or disposed;
 - (iv) The type of maintenance, service, repair, or disposal performed for each part;
 - (v) The name of the person performing the maintenance, service, repair, or disposal;
 - (vi) The amount and type of refrigerant added to, or in the case of disposal removed from, the appliance;
 - (vii) The full charge of the appliance; and
 - (viii) The leak rate and the method used to determine the leak rate (not applicable when disposing of the appliance, following a retrofit, installing a new appliance, or if the refrigerant addition qualifies as a seasonal variance).
 - (3) Owners or operators must keep records of leak inspections that include the date of inspection, the method(s) used to conduct the leak inspection, a list of the location of each leak that was identified, and a certification that all visible and accessible parts of the appliance were inspected. Technicians conducting leak inspections must, upon conclusion of that service, provide the owner or operator of the appliance with documentation that meets these requirements.
 - (4) If using an automatic leak detection system, the owner or operator must maintain records regarding the installation and the annual audit and calibration of the system, a record of each date the monitoring system identified a leak, and the location of the leak.

- (5) Owners or operators must maintain records of the dates and results of all initial and follow-up verification tests. Records must include the location of the appliance, the date(s) of the verification tests, the location(s) of all repaired leaks that were tested, the type(s) of verification test(s) used, and the results of those tests. Technicians conducting initial or follow-up verification tests must, upon conclusion of that service, provide the owner or operator of the appliance with documentation that meets these requirements.
- (6) Owners or operators must maintain retrofit or retirement plans developed in accordance with paragraph (h) of this section.
- (7) Owners or operators must maintain retrofit and/or extension requests submitted to EPA in accordance with paragraph (i) of this section.
- (8) Owners or operators that suspend the deadlines in this section by mothballing an appliance must keep records documenting when the appliance was mothballed and when additional refrigerant was added to the appliance (or isolated component).
- (9) Owners or operators who exclude purged refrigerants that are destroyed from annual leak rate calculations must maintain records to support the amount of refrigerant claimed as sent for destruction. Records must be based on a monitoring strategy that provides reliable data to demonstrate that the amount of refrigerant claimed to have been destroyed is not greater than the amount of refrigerant actually purged and destroyed and that the 98 percent or greater destruction efficiency is met. Records must include flow rate, quantity or concentration of the refrigerant in the vent stream, and periods of purge flow. Records must include:
 - (i) The identification of the facility and a contact person, including the address and telephone number;
 - (ii) A description of the appliance, focusing on aspects relevant to the purging of refrigerant and subsequent destruction;
 - (iii) A description of the methods used to determine the quantity of refrigerant sent for destruction and type of records that are being kept by the owners or operators where the appliance is located;
 - (iv) The frequency of monitoring and data-recording; and
 - (v) A description of the control device, and its destruction efficiency.
- (10) Owners or operators that exclude additions of refrigerant due to seasonal variance from their leak rate calculation must maintain records stating that they are using the seasonal variance flexibility and documenting the amount added and removed under § 82.157(l)(2).
- (11) Owners or operators that submit reports to EPA in accordance with paragraph (m) of this section must maintain copies of the submitted reports and any responses from EPA.
- (m) **Reporting.** All notifications must be submitted electronically to 608reports@epa.gov unless the notification contains confidential business information. If the notification contains confidential business information, the information should be submitted to: Section 608 Program Manager; Stratospheric Protection Division; Mail Code: 6205T; U.S. Environmental Protection Agency; 1200 Pennsylvania Avenue NW., Washington, DC 20460.
- (1) Owners or operators must notify EPA at this address in accordance with paragraph (f) of this section when seeking an extension of time to complete repairs.

- (2) Owners or operators must notify EPA at this address in accordance with paragraph (h)(5)(ii) of this section when seeking relief from the obligation to retrofit or retire an appliance.
- (3) Owners or operators must notify EPA at this address in accordance with paragraph (i) of this section when seeking an extension of time to complete the retrofit or retirement of an appliance.
- (4) Owners or operators must notify EPA at this address in accordance with paragraph (j) of this section for any appliance that leaks 125 percent or more of the full charge in a calendar year.
- (5) When excluding purged refrigerants that are destroyed from annual leak rate calculations, owners or operators must notify EPA at this address within 60 days after the first time the exclusion is used by the facility where the appliance is located. The report must include the information included in paragraph (l)(9) of this section.

[81 FR 82356, Nov. 18, 2016, as amended at 85 FR 14171, Apr. 10, 2020]

§ 82.158 Standards for recovery and/or recycling equipment.

Starting January 1, 2017, this section applies to recovery and/or recycling equipment for use during the maintenance, service, repair, or disposal of appliances containing any class I or class II refrigerant or any non-exempt substitute refrigerant.

- (a) No person may manufacture or import recovery and/or recycling equipment for use during the maintenance, service, repair, or disposal of appliances unless the equipment is certified in accordance with this section.
- (b) No person may alter the design of certified refrigerant recovery and/or recycling equipment in a way that would affect the equipment's ability to meet the certification standards in this section without resubmitting the altered design for certification testing. Until it is tested and shown to meet the certification standards in this section, equipment so altered will be considered uncertified.
- (c) Recovery and/or recycling equipment manufactured or imported before November 15, 1993, intended for use during the maintenance, service, repair, or disposal of appliances (except small appliances, MVACs, and MVAC-like appliances) will be considered certified if it is capable of achieving the level of evacuation specified in Table 2 of this section when tested using a properly calibrated pressure gauge.
- (d) Manufacturers and importers of recovery and/or recycling equipment must have such equipment certified by an approved equipment testing organization as follows:
 - (1) Recovery and/or recycling equipment manufactured or imported on or after November 15, 1993, and before September 22, 2003, intended for use during the maintenance, service, repair, or disposal of appliances (except small appliances, MVACs, and MVAC-like appliances) must be certified by an approved equipment testing organization as being capable of achieving the level of evacuation specified in Table 2 of this section under the conditions of appendix B1 of this subpart (based upon the ARI Standard 740-1993, *Performance of Refrigerant Recovery, Recycling and/or Reclaim Equipment*).
 - (2) Recovery and/or recycling equipment manufactured or imported on or after September 22, 2003, and before January 1, 2017, intended for use during the maintenance, service, repair, or disposal of appliances (except small appliances, MVACs, and MVAC-like appliances) must be certified by an

approved equipment testing organization as being capable of achieving the level of evacuation specified in Table 2 of this section under the conditions of appendix B2 of this subpart (based upon the ARI Standard 740-1995, *Performance of Refrigerant Recovery, Recycling and/or Reclaim Equipment*).

- (3) Recovery and/or recycling equipment manufactured or imported on or after January 1, 2017, intended for use during the maintenance, service, repair, or disposal of appliances (except small appliances, MVACs, and MVAC-like appliances) must be certified by an approved equipment testing organization as being capable of achieving the level of evacuation specified in Table 2 of this section under the conditions of appendix B3 (for non-flammable refrigerants) based upon AHRI Standard 740-2016 or appendix B4 (for flammable refrigerants) of this subpart.

**TABLE 2—LEVELS OF EVACUATION WHICH MUST BE ACHIEVED BY RECOVERY AND/OR RECYCLING EQUIPMENT
[EXCEPT FOR SMALL APPLIANCES, MVACs, AND MVAC-LIKE APPLIANCES.]**

Type of appliance with which recovery and/or recycling machine is intended to be used	Inches of Hg vacuum (relative to standard atmospheric pressure of 29.9 inches Hg)	
	Manufactured or imported before November 15, 1993	Manufactured or imported on or after November 15, 1993
HCFC-22 appliances, or isolated component of such appliances, with a full charge of less than 200 pounds of refrigerant	0	0.
HCFC-22 appliances, or isolated component of such appliances, with a full charge of 200 pounds or more of refrigerant	4	10.
Very high-pressure appliances	0	0.
Other high-pressure appliances, or isolated component of such appliances, with a full charge of less than 200 pounds of refrigerant	4	10.
Other high-pressure appliances, or isolated component of such appliances, with a full charge of 200 pounds or more of refrigerant	4	15.
Medium-pressure appliances, or isolated component of such appliances, with a full charge of less than 200 pounds of refrigerant	4	10.
Medium-pressure appliances, or isolated component of such appliances, with a full charge of 200 pounds or more of refrigerant	4	15.
Low-pressure appliances	25 mm Hg	25 mm Hg

Type of appliance with which recovery and/or recycling machine is intended to be used	Inches of Hg vacuum (relative to standard atmospheric pressure of 29.9 inches Hg)	
	Manufactured or imported before November 15, 1993	Manufactured or imported on or after November 15, 1993
	absolute	absolute.

- (4) Recovery and/or recycling equipment whose recovery efficiency cannot be tested according to the procedures in appendix B1, B2, B3, or B4 of this subpart as applicable may be certified if an approved third-party testing organization adopts and performs a test that demonstrates, to the satisfaction of the Administrator, that the recovery efficiency of that equipment is equal to or better than that of equipment that:
 - (i) Is intended for use with the same type of appliance; and
 - (ii) Achieves the level of evacuation in Table 2. The manufacturer's instructions must specify how to achieve the required recovery efficiency, and the equipment must be tested when used according to these instructions.
- (5) The equipment must meet the minimum requirements for certification under appendix B1, B2, B3, or B4 of this subpart as applicable.
- (6) If the equipment is equipped with a noncondensables purge device, the equipment must not release more than 3 percent of the quantity of refrigerant being recycled through noncondensables purging under the conditions of appendix B1, B2, B3, or B4 of this subpart as applicable.
- (7) The equipment must be equipped with low-loss fittings on all hoses.
- (8) The equipment must have its liquid recovery rate and its vapor recovery rate measured under the conditions of appendix B1, B2, B3, or B4 as applicable, unless the equipment has no inherent liquid or vapor recovery rate.
- (e) **Small Appliances.** Equipment used during the maintenance, service, repair, or disposal of small appliances must be certified by an approved equipment testing organization to be capable of recovering 90 percent of the refrigerant in the test stand when the compressor of the test stand is operational and 80 percent of the refrigerant when the compressor of the test stand is not operational, when used in accordance with the manufacturer's instructions under the conditions of appendix C, Method for Testing Recovery Devices for Use with Small Appliances.
 - (1) Equipment manufactured or imported before November 15, 1993, will be considered certified if it is capable of either recovering 80 percent of the refrigerant in the system, whether or not the compressor of the test stand is operational, or achieving a four-inch vacuum when tested using a properly calibrated pressure gauge.

- (2) Equipment manufactured or imported on or after November 15, 1993, may also be certified if it is capable of achieving a four-inch vacuum under the conditions of appendix B1 of this subpart, based upon ARI Standard 740-1993.
- (3) Equipment manufactured or imported on or after September 22, 2003, and before January 1, 2017, may also be certified if it is capable of achieving a four-inch vacuum under the conditions of appendix B2 of this subpart, based upon ARI Standard 740-1995.
- (4) Equipment manufactured or imported on or after January 1, 2017, may also be certified if it is capable of achieving a four-inch vacuum under the conditions of appendix B3 of this subpart (for non-flammable refrigerants), based upon AHRI Standard 740-2016 or appendix B4 of this subpart (for flammable refrigerants), based upon both AHRI Standard 740-2016 and UL 1963, Supplement SB, *Requirements for Refrigerant Recovery/Recycling Equipment Intended for Use with a Flammable Refrigerant*, Fourth Edition, June 1, 2011.
- (5) Equipment used to evacuate any class I or class II refrigerant or any non-exempt substitute refrigerant from small appliances before they are disposed of may also be certified if it is capable of achieving a four-inch vacuum when tested using a properly calibrated pressure gauge.

(f) **MVAC-like appliances.**

- (1) Manufacturers and importers of recovery and/or recycling equipment intended for use during the maintenance, service, repair, or disposal of MVAC-like appliances must certify such equipment in accordance with subpart B of this part.
- (2) Equipment manufactured or imported before November 15, 1993, intended for use during the maintenance, service, or repair of MVAC-like appliances must be capable of reducing the system pressure to 102 mm of mercury vacuum under the conditions of appendix A of subpart B of this part.

(g) **MVACs.** Manufacturers and importers of recovery and/or recycling equipment intended for use during the maintenance, service, repair, or disposal of MVACs must certify such equipment in accordance with subpart B of this part.

(h) **Labeling.**

- (1) Manufacturers and importers of equipment certified under paragraphs (d) and (e) of this section must place a label on each piece of equipment stating the following:

THIS EQUIPMENT HAS BEEN CERTIFIED BY [APPROVED EQUIPMENT TESTING ORGANIZATION] TO MEET EPA'S MINIMUM REQUIREMENTS FOR RECYCLING OR RECOVERY EQUIPMENT INTENDED FOR USE WITH [APPROPRIATE CATEGORY OF APPLIANCE].

- (2) The label must also show the date of manufacture and the serial number (if applicable) of the equipment. The label must be affixed in a readily visible or accessible location, be made of a material expected to last the lifetime of the equipment, present required information in a way that it is likely to remain legible for the lifetime of the equipment, and be affixed in such a way that it cannot be removed from the equipment without damage to the label.

(i) **Retesting.** At least once every three years, manufacturers or importers of certified recovery and/or recycling equipment intended for use during the maintenance, service, or repair of appliances (except MVACs or MVAC-like appliances) or during the disposal of appliances (except small appliances, MVACs, and MVAC-like appliances) must have approved equipment testing organizations conduct either:

- (1) Retests of certified recovery and/or recycling equipment in accordance with paragraphs (d) and (e) of this section; or
- (2) Inspections of recovery and/or recycling equipment at manufacturing facilities to ensure that each equipment model line that has been certified under this section continues to meet the certification criteria.
- (j) **Revocation.** An equipment model line that has been certified under this section may have its certification revoked if it is subsequently determined to fail to meet the certification criteria. In such cases, the Administrator must give notice to the manufacturer or importer setting forth the basis for the determination.
- (k) Equipment that is advertised or marketed as “recycling equipment” must be capable of recycling the standard contaminated refrigerant sample of appendix B2, B3, or B4 of this subpart (as applicable) to the levels in the following table when tested under the conditions of appendix B2, B3 or B4 of this subpart:

**MAXIMUM LEVELS OF CONTAMINANTS PERMISSIBLE IN REFRIGERANT PROCESSED
THROUGH EQUIPMENT ADVERTISED AS “RECYCLING” EQUIPMENT**

Contaminants	Low-pressure (R-11, R-123, R-113) systems	R-12 systems	All other systems
Acid Content (by wt.)	1.0 PPM	1.0 PPM	1.0 PPM.
Moisture (by wt.)	20 PPM	10 PPM	20 PPM.
Noncondensable Gas (by vol.)	N/A	2.0%	2.0%.
High Boiling Residues (by vol.)	1.0%	0.02%	0.02%.
Chlorides by Silver Nitrate Test	No turbidity	No turbidity	No turbidity.
Particulates	Visually clean	Visually clean	Visually clean.

[81 FR 82360, Nov. 18, 2016]

§ 82.160 Approved equipment testing organizations.

- (a) Any equipment testing organization may apply for approval by the Administrator to certify equipment under the standards in § 82.158 and appendices B2, B3, B4, or C of this subpart. Applications must be sent to 608reports@epa.gov, or if containing confidential business information, mailed to: Section 608 Program Manager, Stratospheric Protection Division, Mail Code: 6205T, U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue NW., Washington, DC 20460.
- (b) Applications for approval must include:
 - (1) A list of equipment present at the organization that will be used for equipment testing.

- (2) Verification of the organization's expertise in equipment testing and the technical experience of the organization's personnel.
 - (3) Verification of the organization's knowledge of the standards and recordkeeping and reporting requirements of this subpart.
 - (4) A description of the organization's program for verifying the performance of certified recovery and/or recycling equipment manufactured over the long term, specifying whether retests of equipment or inspections of equipment at manufacturing facilities will be used.
 - (5) Verification that the organization has no conflict of interest and receives no direct or indirect financial benefit from the outcome of certification testing.
 - (6) Agreement to allow the Administrator access to records and personnel to verify the information contained in the application.
- (c) Organizations may not certify equipment before receiving approval from EPA. If approval is denied under this section, the Administrator must give written notice to the organization setting forth the basis for the determination.
- (d) If an approved testing organization conducts certification tests in a way not consistent with the representations made in its application or with the provisions of this subpart, the Administrator may revoke approval in accordance with § 82.169. In such cases, the Administrator must give notice to the organization setting forth the basis for the determination.
- (e) **Recordkeeping and reporting.**
- (1) Approved equipment testing organizations must maintain records of equipment testing and performance and a list of equipment that meets EPA requirements. This list must include the name of the manufacturer and the name and/or serial number of the model line. Approved equipment testing organizations must publish online a list of all certified equipment that includes the information specified above and update the list annually.
 - (2) Approved equipment testing organizations must notify EPA at 608reports@epa.gov if retests of equipment or inspections of manufacturing facilities conducted under to § 82.158(i) show that a previously certified model line fails to meet EPA requirements. Such notification must be received within thirty days of the retest or inspection.
 - (3) All records must be maintained for three years after the equipment is no longer offered for sale. Online lists must contain certified equipment until three years after that equipment is no longer offered for sale.

[81 FR 82362, Nov. 18, 2016]

§ 82.161 Technician certification.

Until January 1, 2018, this section applies only to technicians and organizations certifying technicians that maintain, service, or repair appliances containing class I or class II refrigerants. Starting on January 1, 2018, this section applies to technicians and organizations certifying technicians that maintain, service, or repair appliances containing any class I or class II refrigerant or any non-exempt substitute refrigerant.

- (a) **Certification Requirements.**

- (1) Any person who could be reasonably expected to violate the integrity of the refrigerant circuit during the maintenance, service, repair, or disposal of appliances (as follows in this paragraph) containing a class I or class II refrigerant or a non-exempt substitute refrigerant must pass a certification exam offered by an approved technician certification program.
 - (i) Persons who maintain, service, or repair small appliances must be certified as Type I technicians.
 - (ii) Persons who maintain, service, repair, or dispose of medium-, high-, or very high-pressure appliances (except small appliances, MVACs, and MVAC-like appliances) must be certified as Type II technicians.
 - (iii) Persons who maintain, service, repair, or dispose of low-pressure appliances must be certified as Type III technicians.
 - (iv) Persons who maintain, service, repair, or dispose of all appliances described in paragraph (a)(1)(i) through (iii) of this section must be certified as Universal technicians.
 - (v) Technicians who maintain, service, or repair MVAC-like appliances must either be certified as Type II technicians or be certified in accordance with 40 CFR part 82, subpart B.
 - (vi) Persons who maintain, service, or repair MVAC appliances for consideration must be certified in accordance with 40 CFR part 82, subpart B.
 - (vii) Persons who dispose of small appliances, MVACs, and MVAC-like appliances are not required to be certified.
- (2) Apprentices are exempt from the requirement in paragraph (a)(1) of this section provided the apprentice is closely and continually supervised by a certified technician while performing any maintenance, service, repair, or disposal that could reasonably be expected to release refrigerant from an appliance into the environment, except those substitute refrigerants exempted under paragraph (a)(1) of this section. The supervising certified technician and the apprentice have the responsibility to ensure that the apprentice complies with this subpart.
- (3) The Administrator may require technicians to demonstrate at their place of business their ability to perform proper procedures for recovering and/or recycling refrigerant, except those substitute refrigerants exempted under paragraph (a)(1) of this section. Failure to demonstrate or failure to properly use the equipment may result in revocation or suspension of the certificate. Failure to abide by any of the provisions of this subpart may also result in revocation or suspension of the certificate. If a technician's certificate is revoked, the technician would need to recertify before maintaining, servicing, repairing, or disposing of any appliances.
- (4)
 - (i) Technicians certified under this section must keep a copy of their certificate at their place of business.
 - (ii) Technicians must maintain a copy of their certificate until three years after no longer operating as a technician.
- (5) **Recertification.** The Administrator reserves the right to specify a requirement for technician recertification at some future date, if necessary, by placing a notice in the FEDERAL REGISTER.

(b) **Requirements for Technician Certification Programs.**

- (1) No technician training or testing program may issue certificates under this section unless the program complies with all the standards of this section and appendix D, and has been granted approval by the Administrator.
 - (2) **Program Approval.** Persons may seek approval of any technician certification program (program), in accordance with this paragraph, by submitting to the Administrator at the address in § 82.160(a) verification that the program meets all the standards listed in appendix D of this subpart. The Administrator reserves the right to consider other relevant factors to ensure the effectiveness of certification programs. If approval is denied under this section, the Administrator must give written notice to the program setting forth the basis for the determination.
 - (3) **Alternative Examinations.** Programs are encouraged to make provisions for non-English speaking technicians by providing tests in other languages or allowing the use of a translator when taking the test. A test may be administered orally to any person who makes this request, in writing, to the program at least 30 days before the scheduled date for the examination. The written request must explain why the request is being made.
 - (4) **Proof of Certification.** Programs certifying technicians must provide technicians with identification cards in accordance with section (f) of appendix D of this subpart.
 - (5) Programs certifying technicians must maintain records in accordance with section (g) of appendix D of this subpart.
 - (6) Starting January 1, 2018, programs certifying technicians, excluding Federally-run programs, must publish online a list of all technicians they have certified on or after January 1, 2017. Certifying organizations must update these lists at least annually.
 - (i) The list must include the first name, middle initial, and last name of the certified technician, the technician's city of residence when taking the test, the type(s) of certification received, and the date each certification was received.
 - (ii) Programs certifying technicians must provide notice to technicians that such information will be published online in compliance with any other Federal, state or local regulations, and allow technicians to opt out of being included in such lists.
 - (7) If an approved program violates any of the above requirements, the Administrator may revoke approval in accordance with § 82.169. In such cases, the Administrator must give notice to the organization setting forth the basis for the determination.
- (c) **Test Subject Material.** A bank of test questions developed by the Administrator consists of groups, including a core group and technical groups. The Administrator will release this bank of questions only to approved technician certification programs. Each test for each type of certification must include at least 25 questions drawn from the core group and at least 25 questions drawn from each relevant technical group. These questions must address the subject areas in appendix D of this subpart.

[81 FR 82363, Nov. 18, 2016]

§ 82.162 [Reserved]

§ 82.164 Reclaimer certification.

- (a) All persons reclaiming used class I or II refrigerant or non-exempt substitute refrigerant for sale to a new owner must meet the following requirements:

- (1) Reclaim such refrigerant to all the specifications in appendix A of this subpart (based on AHRI Standard 700-2016, *Specifications for Refrigerants*) that are applicable to that refrigerant;
 - (2) Verify that each batch of such refrigerant reclaimed meets these specifications using the analytical methodology prescribed in appendix A of this subpart, which includes the primary methodologies included in appendix A of AHRI Standard 700-2016;
 - (3) Release no more than 1.5 percent of the refrigerant during the reclamation process;
 - (4) Dispose of wastes from the reclamation process in accordance with all applicable laws and regulations; and
 - (5) Maintain records and submit reports in accordance with paragraph (d) of this section.
- (b) The owner or a responsible officer reclaiming used refrigerant for sale to a new owner, except for persons who properly certified under this section before May 11, 2004, must certify to the Administrator at the address in § 82.160(a) that they will meet the requirements in paragraph (a) of this section. The certification must include the name and address of the reclaimer and a list of equipment used to reclaim the refrigerant to the required standard, and to analyze the refrigerant to ensure it meets these specifications.
- (c) Certificates are not transferable. In the event of a change in ownership of an entity which reclaims refrigerant, the new owner of the entity must certify with the Administrator within 30 days of the change that they will meet the reclaimer certification requirements. In the event of a change in business management, location, or contact information, the owner of the entity must notify EPA within 30 days of the change at the address in § 82.160(a).
- (d) **Recordkeeping and reporting.**
- (1) Reclaimers must maintain records, by batch, of the results of the analysis conducted to verify that reclaimed refrigerant meets the necessary specifications in paragraph (a)(2) of this section.
 - (2) Reclaimers must maintain records of the names and addresses of persons sending them material for reclamation and the quantity of the material (the combined mass of refrigerant and contaminants) by refrigerant type sent to them for reclamation. Such records must be maintained on a transactional basis for three years.
 - (3) Reclaimers must report to the Administrator annually by February 1 of the next calendar year the total annual quantity of material (the combined mass of refrigerant and contaminants) by refrigerant type sent to them for reclamation, the total annual mass of each refrigerant reclaimed, and the total annual mass of waste products.
- (e) Failure to abide by any of the provisions of this subpart may result in revocation or suspension of the certification of the reclaimer in accordance with § 82.169. In such cases, the Administrator must give notice to the organization setting forth the basis for the determination.

[81 FR 82364, Nov. 18, 2016]

§ 82.166 Reporting and recordkeeping requirements for leak repair.

This section contains leak repair reporting and recordkeeping requirements that apply to owners and operators of appliances containing 50 or more pounds of class I or class II refrigerants until January 1, 2019. Starting January 1, 2019, the recordkeeping and reporting requirements in the leak repair provisions in § 82.157(l) and (m) apply to owners and operators of appliances containing 50 or more pounds of class I or class II refrigerants or non-exempt substitutes.

(a)-(i) [Reserved]

(j) Persons servicing appliances normally containing 50 or more pounds of refrigerant must provide the owner/operator of such appliances with an invoice or other documentation, which indicates the amount of refrigerant added to the appliance.

(k) Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep servicing records documenting the date and type of service, as well as the quantity of refrigerant added. The owner/operator must keep records of refrigerant purchased and added to such appliances in cases where owners add their own refrigerant. Such records should indicate the date(s) when refrigerant is added.

(l) [Reserved]

(m) All records required to be maintained pursuant to this section must be kept for a minimum of three years unless otherwise indicated.

(n) The owners or operators of appliances must maintain on-site and report to EPA Headquarters at the address listed in § 82.160 the information specified in paragraphs (n)(1), (n)(2), and (n)(3) of this section, within the timelines specified under § 82.156 (i)(1), (i)(2), (i)(3) and (i)(5) where such reporting or recordkeeping is required. This information must be relevant to the affected appliance.

(1) An initial report to EPA under § 82.156(i)(1)(i), (i)(2), or (i)(5)(i) regarding why more than 30 days are needed to complete repairs must include: Identification of the facility; the leak rate; the method used to determine the leak rate and full charge; the date a leak rate above the applicable leak rate was discovered; the location of leak(s) to the extent determined to date; any repair work that has been completed thus far and the date that work was completed; the reasons why more than 30 days are needed to complete the work and an estimate of when the work will be completed. If changes from the original estimate of when work will be completed result in extending the completion date from the date submitted to EPA, the reasons for these changes must be documented and submitted to EPA within 30 days of discovering the need for such a change.

(2) If the owners or operators intend to establish that the appliance's leak rate does not exceed the applicable allowable leak rate in accordance with § 82.156(i)(3)(v), the owner or operator must submit a plan to fix other outstanding leaks for which repairs are planned but not yet completed to achieve a rate below the applicable allowable leak rate. A plan to fix other outstanding leaks in accordance with § 82.156(i)(3)(v) must include the following information: The identification of the facility; the leak rate; the method used to determine the leak rate and full charge; the date a leak rate above the applicable allowable leak rate was discovered; the location of leak(s) to the extent determined to date; and any repair work that has been completed thus far, including the date that work was completed. Upon completion of the repair efforts described in the plan, a second report must be submitted that includes the date the owner or operator submitted the initial report concerning the need for additional time beyond the 30 days and notification of the owner or

operator's determination that the leak rate no longer exceeds the applicable allowable leak rate. This second report must be submitted within 30 days of determining that the leak rate no longer exceeds the applicable allowable leak rate.

- (3) Owners or operators must maintain records of the dates, types, and results of all initial and follow-up verification tests performed under § 82.156(i)(3). Owners or operators must submit this information to EPA within 30 days after conducting each test only where required under § 82.156 (i)(1), (i)(2), (i)(3) and (i)(5). These reports must also include: Identification and physical address of the facility; the leak rate; the method used to determine the leak rate and full charge; the date a leak rate above the applicable allowable leak rate was discovered; the location of leak(s) to the extent determined to date; and any repair work that has been completed thus far and the date that work was completed. Submitted reports must be dated and include the name of the owner or operator of the appliance, and must be signed by an authorized company official.
- (o) The owners or operators of appliances must maintain on-site and report to EPA at the address specified in § 82.160 the following information where such reporting and recordkeeping is required and in the timelines specified in § 82.156 (i)(7) and (i)(8), in accordance with § 82.156 (i)(7) and (i)(8). This information must be relevant to the affected appliance and must include:
 - (1) The identification of the industrial process facility;
 - (2) The leak rate;
 - (3) The method used to determine the leak rate and full charge;
 - (4) The date a leak rate above the applicable allowable rate was discovered.
 - (5) The location of leaks(s) to the extent determined to date;
 - (6) Any repair work that has been completed thus far and the date that work was completed;
 - (7) A plan to complete the retrofit or retirement of the system;
 - (8) The reasons why more than one year is necessary to retrofit or retire the system;
 - (9) The date of notification to EPA; and
 - (10) An estimate of when retrofit or retirement work will be completed. If the estimated date of completion changes from the original estimate and results in extending the date of completion, the owner or operator must submit to EPA the new estimated date of completion and documentation of the reason for the change within 30 days of discovering the need for the change, and must retain a dated copy of this submission.
- (p)
 - (1) Owners or operators who wish to exclude purged refrigerants that are destroyed from annual leak rate calculations must maintain records on-site to support the amount of refrigerant claimed as sent for destruction. Records shall be based on a monitoring strategy that provides reliable data to demonstrate that the amount of refrigerant claimed to have been destroyed is not greater than the amount of refrigerant actually purged and destroyed and that the 98 percent or greater destruction efficiency is met. Records shall include flow rate, quantity or concentration of the refrigerant in the vent stream, and periods of purge flow.

- (2) Owners or operators who wish to exclude purged refrigerants that are destroyed from annual leak rate calculations must maintain on-site and make available to EPA upon request the following information after the first time the exclusion is utilized by the facility:
 - (i) The identification of the facility and a contact person, including the address and telephone number;
 - (ii) A general description of the refrigerant appliance, focusing on aspects of the appliance relevant to the purging of refrigerant and subsequent destruction;
 - (iii) A description of the methods used to determine the quantity of refrigerant sent for destruction and type of records that are being kept by the owners or operators where the appliance is located;
 - (iv) The frequency of monitoring and data-recording; and
 - (v) A description of the control device, and its destruction efficiency.

This information must also be included, where applicable, in any reporting requirements required for compliance with the leak repair and retrofit requirements for industrial process refrigeration equipment, as set forth in paragraphs (n) and (o) of this section.

- (q) Owners or operators choosing to determine the full charge as defined in § 82.156(j) of an affected appliance by using an established range or using that methodology in combination with other methods for determining the full charge as defined in § 82.156(j) must maintain the following information:
 - (1) The identification of the owner or operator of the appliance;
 - (2) The location of the appliance;
 - (3) The original range for the full charge of the appliance, its midpoint, and how the range was determined;
 - (4) Any and all revisions of the full charge range and how they were determined; and
 - (5) The dates such revisions occurred.

[58 FR 28712, May 14, 1993, as amended at 59 FR 42957, Aug. 19, 1994; 60 FR 40443, Aug. 8, 1995; 69 FR 11981, Mar. 12, 2004; 70 FR 1992, Jan. 11, 2005; 79 FR 64290, Oct. 28, 2014; 81 FR 82364, Nov. 18, 2016]

§ 82.168 Incorporation by Reference.

- (a) Certain material is incorporated by reference into this subpart part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. You can obtain the material from the sources listed below. You may inspect a copy of the approved material at U.S. EPA's Air and Radiation Docket; EPA West Building, Room 3334, 1301 Constitution Ave. NW., Washington, DC, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741-6030 or go to http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.
- (b) Air-Conditioning, Heating, and Refrigeration Institute (AHRI), 2111 Wilson Boulevard, Suite 500, Arlington, VA 22201, www.ahrinet.org.
 - (1) AHRI Standard 110-2016, *2016 Standard for Air-Conditioning, Heating and Refrigerating Equipment Nameplate Voltages*, copyright 2016, into Appendix B3 to subpart F.

- (2) 2008 Appendix C to AHRI Standard 700-2014, *2008 Appendix C for Analytical Procedures for AHRI Standard 700-2014—Normative*, copyright 2008, into Appendix A to subpart F.
- (3) 2008 Appendix D to AHRI Standard 700-2014, *2012 Appendix D for Gas Chromatograms for AHRI Standard 700-2014—Informative*, copyright 2012, into Appendix A to subpart F.
- (c) American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., (ASHRAE), 1791 Tullie Circle NE., Atlanta, GA 30329, U.S.A.
 - (1) ANSI/ASHRAE Standard 63.2-1996 (RA 2010), *Method of Testing Liquid-Line Filter Drier Filtration Capability*, Reaffirmed June 26, 2010, into Appendix B3 to subpart F.
- (d) ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, www.astm.org.
 - (1) ASTM D1296-01 (Reapproved 2012), *Standard Test Method for Odor of Volatile Solvents and Diluents*, approved July 1, 2012, into Appendix A to subpart F.
 - (2) [Reserved]
- (e) Gas Processors Association, 6526 East 60th Street, Tulsa, Oklahoma 74145.
 - (1) GPA Standard STD-2177-13, *Analysis of Natural Gas Liquid Mixtures Containing Nitrogen and Carbon Dioxide by Gas Chromatography*, Revised, copyright 2013, into Appendix A to subpart F.
 - (2) [Reserved]
- (f) General Services Administration, 301 7th St. SW., Washington, DC 20410.
 - (1) BB-F-1421B, Federal Specification for “Fluorocarbon Refrigerants,” dated March 5, 1982, IBR approved for Appendix A to subpart F.
 - (2) [Reserved]
- (g) International Electrotechnical Commission (IEC), 3, rue de Varembe, P.O. Box 131. CH-1211 Geneva 20—Switzerland, 41 22 919 02 11, <http://www.iec.ch>.
 - (1) IEC 60038, *IEC Standard Voltages*, Edition 7.0, 2009-06, into Appendix B3 to subpart F.
 - (2) [Reserved]
- (h) Underwriters Laboratories (UL), 333 Pfingsten Road, Northbrook, IL 60062, 847-272-8800, <http://www.ul.com>.
 - (1) UL 1963, *Standard for Safety Requirements for Refrigerant Recovery/Recycling Equipment*, Fourth Edition (with revisions through October 13, 2013), June 1, 2011, in appendix B3 to subpart F, appendix B4 to subpart F.
 - (2) [Reserved]

[81 FR 82364, Nov. 18, 2016]

§ 82.169 Suspension and revocation procedures.

- (a) Failure to abide by any of the provisions of this subpart may result in the revocation or suspension of the approval to certify technicians (under § 82.161), approval to act as a recovery/recycling equipment testing organization (under § 82.160), or reclaimer certification (under § 82.164), hereafter referred to as

the "organization." In such cases, the Administrator or her or his designated representative shall give notice of an impending suspension to the person or organization setting forth the facts or conduct that provide the basis for the revocation or suspension.

- (b) Any organization that has received notice of an impending suspension or revocation may choose to request a hearing and must file that request in writing within 30 days of the date of the Agency's notice at the address listed in § 82.160 and shall set forth their objections to the revocation or suspension and data to support the objections.
- (c) If the Agency does not receive a written request for a hearing within 30 days of the date of the Agency's notice, the revocation will become effective upon the date specified in the notice of an impending suspension.
- (d) If after review of the request and supporting data, the Administrator or her or his designated representative finds that the request raises a substantial factual issue, she or he shall provide the organization with a hearing.
- (e) After granting a request for a hearing the Administrator or her or his designated representative shall designate a Presiding Officer for the hearing.
- (f) The hearing shall be held as soon as practicable at a time and place determined by the Administrator, the designated representative, or the Presiding Officer.
- (g) The Administrator or her or his designated representative may, at his or her discretion, direct that all argument and presentation of evidence be concluded within a specified period established by the Administrator or her or his designated representative. Said period may be no less than 30 days from the date that the first written offer of a hearing is made to the applicant. To expedite proceedings, the Administrator or her or his designated representative may direct that the decision of the Presiding Officer (who need not be the Administrator) shall be the final EPA decision.
- (h) Upon appointment pursuant to paragraph (e) of this section, the Presiding Officer will establish a hearing file. The file shall consist of the following:
 - (1) The notice issued by the Administrator under § 82.169(a);
 - (2) the request for a hearing and the supporting data submitted therewith;
 - (3) all documents relating to the request for certification and all documents submitted therewith; and
 - (4) correspondence and other data material to the hearing.
- (i) The hearing file will be available for inspection by the petitioner at the office of the Presiding Officer.
- (j) An applicant may appear in person or may be represented by counsel or by any other duly authorized representative.
- (k) The Presiding Officer, upon the request of any party or at his or her discretion, may arrange for a pre-hearing conference at a time and place he or she specifies. Such pre-hearing conferences will consider the following:
 - (1) Simplification of the issues;
 - (2) Stipulations, admissions of fact, and the introduction of documents;
 - (3) Limitation of the number of expert witnesses;

- (4) Possibility of agreement disposing of any or all of the issues in dispute; and
- (5) Such other matters as may aid in the disposition of the hearing, including such additional tests as may be agreed upon by the parties.
- (l) The results of the conference shall be reduced to writing by the Presiding Officer and made part of the record.
- (m) Hearings shall be conducted by the Presiding Officer in an informal but orderly and expeditious manner. The parties may offer oral or written evidence, subject to the exclusion by the Presiding Officer of irrelevant, immaterial, and repetitious evidence.
- (n) Witnesses will not be required to testify under oath. However, the Presiding Officer shall call to the attention of witnesses that their statements may be subject to the provisions of 18 U.S.C. 1001, which imposes penalties for knowingly making false statements or representations or using false documents in any matter within the jurisdiction of any department or agency of the United States.
- (o) Any witness may be examined or cross-examined by the Presiding Officer, the parties, or their representatives.
- (p) Hearings shall be reported verbatim. Copies of transcripts of proceedings may be purchased by the petitioner from the reporter.
- (q) All written statements, charts, tabulations, and similar data offered in evidence at the hearings shall, upon a showing satisfactory to the Presiding Officer of their authenticity, relevancy, and materiality, be received in evidence and shall constitute a part of the record.
- (r) Oral argument may be permitted at the discretion of the Presiding Officer and shall be reported as part of the record unless otherwise ordered by the Presiding Officer.
- (s) The Presiding Officer shall make an initial decision that shall include written findings and conclusions and the reasons or basis regarding all the material issues of fact, law, or discretion presented on the record. The findings, conclusions, and written decision shall be provided to the parties and made a part of the record. The initial decision shall become the decision of the Administrator without further proceedings, unless there is an appeal to the Administrator or motion for review by the Administrator within 20 days of the date the initial decision was filed.
- (t) On appeal from or review of the initial decision, the Administrator or her or his designated representative shall have all the powers which he or she would have in making the initial decision, including the discretion to require or allow briefs, oral argument, the taking of additional evidence, or a remand to the Presiding Officer for additional proceedings. The decision by the Administrator or her or his designated representative shall include written findings and conclusions and the reasons or basis therefore on all the material issues of fact, law, or discretion presented on the appeal or considered in the review.

[68 FR 43809, July 24, 2003]

Appendix A to Subpart F of Part 82—Specifications for Refrigerants

This appendix is based on the Air-Conditioning, Heating, and Refrigeration Institute Standard 700-2016, *Specifications for Refrigerants*.

Section 1. Purpose

1.1 *Purpose.* The purpose of this standard is to evaluate and accept/reject refrigerants regardless of source (*i.e.*, new, reclaimed and/or repackaged) for use in new and existing refrigeration and air-conditioning products as required under 40 CFR part 82.

1.1.1 *Intent.* This standard is intended for the guidance of the industry including manufacturers, refrigerant reclaimers, repackagers, distributors, installers, servicemen, contractors and for consumers.

1.1.2 *Review and Amendment.* This standard is subject to review and amendment as the technology advances.

Section 2. Scope

2.1 *Scope.* This standard specifies acceptable levels of contaminants (purity requirements) for various fluorocarbon and other refrigerants regardless of source and lists acceptable test methods. These refrigerants are as referenced in the ANSI/ASHRAE Standard 34 with Addenda:

2.1.1 Single-Component Fluorocarbon Refrigerants: R-11, R-12, R-13, R-22, R-23, R-32, R-113, R-114, R-115, R-116, R-123, R-124, R-125, R-134a, R-141b, R-142b, R-143a, R-152a, R-218, R-227ea, R-236fa, R-245fa, R-1233zd(E), R-1234yf, R-1234ze(E);

2.1.2 Single Component Hydrocarbon Refrigerants: R-50, R-170, R-E170, R-290, R-600, R-600a, R-601, R-601a, R-610, R-1150, R-1270;

2.1.3 Carbon Dioxide Refrigerant: R-744;

2.1.4 Zeotropic Blend Refrigerants: R-401A, R-401B, R-402A, R-402B, R-403A, R-403B, R-404A, R-405A, R-406A, R-407A, R-407B, R-407C, R-407D, R-407E, R-407F, R-408A, R-409A, R-409B, R-410A, R-410B, R-411A, R-411B, R-412A, R-413A, R-414A, R-414B, R-415A, R-415B, R-416A, R-417A, R-417B, R-417C, R-418A, R-419A, R-419B, R-420A, R-421A, R-421B, R-422A, R-422B, R-422C, R-422D, R-422E, R-423A, R-424A, R-425A, R-426A, R-427A, R-428A, R-429A, R-430A, R-431A, R-434A, R-435A, R-437A, R-438A, R-439A, R-440A, R-442A, R-444A, R-444B, R-445A, R-446A, R-447A, R-448A, R-449A, R-450A;

2.1.5 Zeotropic Hydrocarbon Blend Refrigerants: R-432A, R-433A, R-433B, R-433C, R-436A, R-436B, R-441A, R-443A; and

2.1.6 Azeotropic Blend Refrigerants: R-500, R-502, R-503, R-507A, R-508A, R-508B, R-509A, R-510A, R-511A, and R-512A.

Section 3. Definitions

3.1 *Definitions.* All terms in this appendix will follow the definitions in § 82.152 unless otherwise defined in this appendix.

3.2 *Shall, Should, Recommended, or It Is Recommended* shall be interpreted as follows:

3.2.1 *Shall*. Where “shall” or “shall not” is used for a provision specified, that provision is mandatory if compliance with this appendix is claimed.

3.2.2 *Should, Recommended, or It is Recommended* is used to indicate provisions which are not mandatory but which are desirable as good practice.

Section 4. Characterization of Refrigerants and Contaminants

4.1 *Characterization*. Characterization of single component fluorocarbon (Table 1A) and zeotropic/azeotropic blend (Table 2A/3) refrigerants and contaminants are listed in the following general classifications:

4.1.1 Isomer content (see Table 1A)

4.1.2 Air and other non-condensables (see Tables 1A, 2A, 3)

4.1.3 Water (see Tables 1A, 2A, 3)

4.1.4 All other volatile impurities (see Tables 1A, 2A, 3)

4.1.5 High boiling residue (see Tables 1A, 2A, 3)

4.1.6 Halogenated unsaturated volatile impurities (see Table 1A)

4.1.7 Particulates/solids (see Tables 1A, 2A, 3)

4.1.8 Acidity (see Tables 1A, 2A, 3)

4.1.9 Chloride (see Tables 1A, 2A, 3)

4.2 *Hydrocarbon Characterization*. Characterization of hydrocarbon refrigerants (Tables 1B and 2B) and contaminants are listed in the following general classifications:

4.2.1 Nominal composition

4.2.2 Other allowable impurities

4.2.3 Air and other non-condensables

4.2.4 Sulfur odor

4.2.5 High boiling residue

4.2.6 Particulates/solids

4.2.7 Acidity

4.2.8 Water

4.2.9 All other volatile impurities

4.2.10 Total C3, C4, and C5 polyolefins

4.3 *Carbon Dioxide Characterization.* Characterization of carbon dioxide (Table 1C) and its contaminants are listed in the following general classifications:

4.3.1 Purity

4.3.2 Air and other non-condensables

4.3.3 Water

4.3.4 High boiling residue

4.3.5 Particulates/solids

Section 5. Sampling and Summary of Test Procedures

5.1 *Referee Test.* The referee test methods for the various contaminants are summarized in the following paragraphs. Detailed test procedures are included in *2008 Appendix C to AHRI Standard 700-2014* (incorporated by reference, see § 82.168). If alternative test methods are employed, the user must be able to demonstrate that they produce results at least equivalent to the specified referee test method.

5.2 *Refrigerant Sampling*

5.2.1 *Sampling Precautions.* Special precautions should be taken to ensure that representative samples are obtained for analysis. Sampling shall be done by qualified personnel following accepted sampling and safety procedures. Refrigerants with critical temperatures near or below ambient temperature cannot be reliably sampled for both liquid and vapor phase without special handling.

Note: Flammable refrigerants which are ASHRAE 34 class 2L, 2, or 3 present additional safety challenges and require additional measures for sampling safety procedures compared to nonflammable halocarbons documented in this standard.

5.2.2 *Cylinder Preparation.* Place a clean, empty sample cylinder with the valve open in an oven at 110 °C (230 °F) for one hour. Remove it from the oven while hot, immediately connect it to an evacuation system and evacuate to less than 56 kPa. Close the valve and allow it to cool. Weigh the empty cylinder.

5.2.3 *Vapor Phase Sampling.* A vapor phase sample shall be obtained for determining the non-condensables. The source temperature shall be measured and recorded at the time the sample is taken.

5.2.3.1 *Special Handling for Low Critical Temperature Refrigerant.* A vapor phase sample is required to determine non-condensables and volatile impurities, including other refrigerants. The vapor phase sample is obtained by regulating the sample container temperature to 5 K or more above the refrigerant critical temperature.

5.2.3.2 *Handling for Liquid Refrigerants with Boiling Points Near or Above Room Temperature.* Since R-11, R-113, R-123, R-141b, R-245fa, and R-1233zd(E) have normal boiling points near or above room temperature, non-condensable determination is not required for these refrigerants.

Note: Non-condensable gases, if present, will concentrate in the vapor phase of the refrigerant; care must be exercised to eliminate introduction of either air or liquid phase refrigerant during the sample transfer.

5.2.4 *Liquid Phase Sampling.* A liquid phase sample is required for all tests listed in this standard except the test for non-condensables.

5.2.4.1 *Liquid Sampling.* Accurate analysis requires that the sample cylinder, at ambient temperature, be filled to at least 60 percent by volume; however, under no circumstances should the cylinder be filled to more than 80 percent by volume. This can be accomplished by weighing the empty cylinder and then the cylinder with refrigerant. When the desired amount of refrigerant has been collected, close the valve(s) and immediately disconnect the sample cylinder.

Note: Care should be taken to ensure that all connections and transfer lines are dry and evacuated to avoid contaminating the sample.

Note: Low critical temperature refrigerants can have extremely high pressure and the sampling vessel, all connections, and transfer lines must be designed to handle high pressures.

5.2.4.2 *Special Handling for Low Critical Temperature Refrigerant.* A liquid phase sample is required for all testing except volatile impurities, including other refrigerants. The liquid phase sample is obtained by regulating the sample cylinder temperature to 2 °C below the critical temperature of the refrigerant.

Note: If free water is present in the sample, cooling to below 0 °C may result in the formation of ice. Clathrates may form at temperatures above 0 °C with some fluorocarbon refrigerants.

5.2.4.3 *Record Weight.* Check the sample cylinder for leaks and record the gross weight.

5.3 *Refrigerant Identification.* The required method shall be gas chromatography (GC) as described in *2008 Appendix C to AHRI Standard 700-2014* (incorporated by reference, see § 82.168) with the corresponding gas chromatogram figures as illustrated in *2012 Appendix D to AHRI Standard 700-2014* (incorporated by reference, see § 82.168). The chromatogram of the sample shall be compared to known standards.

5.3.2 *Alternative Method.* Determination of the boiling point and boiling point range is an acceptable alternative test method which can be used to characterize refrigerants. The test method shall be that described in section 4.4.3 of BB-F-1421B (incorporated by reference, see § 82.168).

5.3.3 *Required Values.* The required values for boiling point and boiling point range are given in Table 1A, *Physical Properties of Single Component Refrigerants*; Table 1B, *Physical Properties of Zeotropic Blends (400 Series Refrigerants)*; and Table 1C, *Physical Properties of Azeotropic Blends (500 Series Refrigerants)*.

5.4 *Water Content.*

5.4.1 *Method.* The Coulometric Karl Fischer Titration shall be the primary test method for determining the water content of refrigerants. This method is described in *2008 Appendix C to AHRI Standard 700-2014* (incorporated by reference, see § 82.168). This method can be used for refrigerants that are either a liquid or a gas at room temperature. For all refrigerants, the sample for water analysis shall be taken from the liquid phase of the container to be tested.

5.4.2 *Limits.* The value for water content shall be expressed in parts per million (ppm) by weight and shall not exceed the maximum specified in Tables 1A, 1B, 1C, 2A, 2B, and 3.

5.5 *Conductivity.* (Alternative to chloride and acidity tests).

5.5.1 *Method.* A refrigerant may be tested for conductivity as an indication of the presence of acids, metal chlorides, and any compound that ionizes in water. This alternative procedure is intended for use with new or reclaimed refrigerants, however, significant amounts of oil can interfere with the test results.

5.5.2 *Limits.* The value for conductivity shall be converted to and expressed in ppm by weight calculated as HCl and shall be compared with the maximum acidity value specified (see in Tables 1A, 1B, 1C, 2A, 2B, and 3). If the conductivity is above this amount, then the chloride and acidity tests shall be conducted. If the conductivity is not greater than this amount, then the chloride and acidity tests may be omitted.

5.6 *Chloride.* The refrigerant shall be tested for chloride as an indication of the presence of hydrochloric acid and/or metal chlorides. The referee procedure is intended for use with new or reclaimed halogenated refrigerants; however, high boiling residue in excess of the amounts in Tables 1A, 1B, 1C, 2A, 2B, and 3 can interfere with the test results.

5.6.1 *Method.* The test method shall be that described in *2008 Appendix C to AHRI Standard 700-2014* (incorporated by reference, see § 82.168). The test will show noticeable turbidity at chloride levels of about 3 ppm or greater by weight.

5.6.2 *Limits.* The results of the test shall not exhibit any sign of turbidity. Report the results as "pass" or "fail."

5.7 *Acidity.*

5.7.1 *Method.* The acidity test uses the titration principle to detect any compound that is soluble in water and ionizes as an acid. The test method shall be that described in *2008 Appendix C to AHRI Standard 700-2014* (incorporated by reference, see § 82.168). This test may not be suitable for determination of high molecular weight organic acids; however these acids will be found in the high boiling residue test outlined in Section 5.8. The test requires a 50 to 60 gram sample and has a detection limit of 0.1 ppm by weight calculated as HCl.

5.7.2 *Limits.* The value for acidity shall be expressed in ppm by weight as HCl and shall not exceed the limits in Tables 1A, 1B, 2A, 2B, and 3.

5.8 *High Boiling Residue.*

5.8.1 *Method.* High boiling residue shall be determined by either volume or weight. The volume method measures the residue from a standard volume of refrigerant after evaporation. The gravimetric method is described in 2008 Appendix C to AHRI Standard 700-2014 (incorporated by reference, see § 82.168). Oils and/or organic acids will be captured by these methods.

5.8.2 *Limits.* The value for high boiling residue shall be expressed as a percentage by volume or weight and shall not exceed the maximum percent specified in Tables 1A, 1B, 1C, 2A, 2B, and 3.

5.9 *Particulates and Solids.*

5.9.1 *Method.* A measured amount of sample shall be placed in a Goetz bulb under controlled temperature conditions. The particulates/solids shall be determined by visual examination of the Goetz bulb prior to the evaporation of refrigerant. For details of this test method, refer to Part 3 of 2008 Appendix C to AHRI Standard 700-2014 (incorporated by reference, see § 82.168).

Note: R-744 will partially sublime when measuring a known amount of liquid sample into the dry Goetz bulb and the solid R-744 will interfere with the visual examination of particulates/solids. Determining the particulates/solids shall be completed by visual examination of the Goetz bulb after the evaporation of the refrigerant.

5.9.2 *Limits.* Visual presence of dirt, rust, or other particulate contamination is reported as “fail.”

5.10 *Non-Condensables.*

5.10.1 *Method.* A vapor phase sample shall be used for determination of non-condensables. Non-condensable gases consist primarily of air accumulated in the vapor phase of refrigerants where the solubility of air in the refrigerant liquid phase is extremely low and air is not significant as a liquid phase contaminant. The presence of non-condensable gases may reflect poor quality control in transferring refrigerants to storage tanks and cylinders.

The test method shall be gas chromatography with a thermal conductivity detector as described in 2008 Appendix C to AHRI Standard 700-2014 (incorporated by reference, see § 82.168).

5.10.2 *Limits.* The maximum level of non-condensables in the vapor phase of a test sample shall not exceed the maximum at 25 °C as shown in Tables 1A, 1B, 1C, 2A, 2B, and 3.

5.11 *All Other Volatile Impurities and/or Other Refrigerants.*

5.11.1 *Method.* The amount of volatile impurities including other refrigerants in the subject refrigerant shall be determined by gas chromatography as described in 2008 Appendix C to AHRI Standard 700-2014 (incorporated by reference, see § 82.168).

5.11.2 *Limits.* The test sample shall not contain more than 0.5 percent by weight of volatile impurities including other refrigerants as shown in Tables 1A, 1B, 1C, 2A, 2B and 3.

5.12 *Total C₃, C₄ and C₅ Polyolefins in Hydrocarbon Refrigerants.*

5.12.1 *Method.* The amount of polyolefin impurities in the hydrocarbon shall be determined by gas chromatography as described in GPA Standard 2177-13 (incorporated by reference, see § 82.168).

5.12.2 *Limits*. The test sample shall not contain more than 0.05 percent by weight in the hydrocarbon sample as shown in Tables 1B and 2B. Report the results as “pass” or “fail.”

5.13 *Sulfur Odor in Hydrocarbon Refrigerants*.

5.13.1 *Method*. The amount of sulfur containing compounds or other compounds with an odor shall be determined by ASTM D1296-01 (Reapproved 2012) (incorporated by reference, see § 82.168).

5.13.2 *Limits*. The test sample paper shall not emit a residual sulfur odor as shown in Tables 1B and 2B.

Section 6. Reporting Procedure

6.1 *Reporting Procedure*. The source (manufacturer, reclaimer, or repackager) of the packaged refrigerant shall be identified. The refrigerant shall be identified by its accepted refrigerant number and/or its chemical name. Maximum allowable levels of contaminants are shown in Tables 1A, 1B, 1C, 2A, 2B, and 3. Test results shall be tabulated in a similar manner.

Component Fluorocarbon Refrigerants and their Allowable Levels of Contaminants								
	R-11	R-12	R-13	R-22	R-23	R-32	R-113	R-114
Reference section								
N/A	23.7	-29.8	-81.5	-40.8	-82	-51.7	47.6	3.6
N/A	± 0.3	± 0.3	± 0.5	± 0.3	± 0.5	± 0.3	± 0.3	± 0.3
N/A	198	112	28.9	96.2	26.1	78.1	214.1	145.7
N/A	N/A	N/A	N/A	N/A	N/A	N/A	0-1 R-133a	0-30 R-144a
5.10	N/A ²	1.5	1.5	1.5	1.5	1.5	N/A ²	1.5
5.4	20	10	10	10	10	10	20	10
5.11	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
5.8	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
5.9	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean
5.7	1	1	1	1	1	1	1	1
5.6	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity

Fluorocarbon Refrigerants and their Allowable Levels of Contaminants (continued)

	R-115	R-116	R-123	R-124	R-125	R-134a	R-141b
ence ion							
A	-38.9	-78.2	27.8	-12	-48.1	-26.1	32
A	± 0.3	± 0.3	± 0.3	± 0.3	± 0.3	± 0.3	± 0.3
A	80	19.9	183.7	122.3	66	101.1	206.8
A	N/A	N/A	0-8 R-123a+ R-123b	0-5 R-124a	N/A	0-0.5 R-134	0-0.1ea R-141, R-141a
0	1.5	1.5	N/A ²	1.5	1.5	1.5	N/A ²
4	10	10	20	10	10	10	100
1	0.5	0.5	0.5	0.5	0.5	0.5	0.9
8	0.01	0.01	0.01	0.01	0.01	0.01	0.01
9	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean
7	1	1	1	1	1	1	1
6	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity

40 CFR 82.169(t) (enhanced display)

and critical temperatures, although not required, are provided for informational purposes. Refrigerant data compiled from Refprop 9.1.

page

40 CFR 82.169(t) (enhanced display)

Testing	01.3	ght	ght	Fail	ght	Fail	by ht Cl)	g ⁻¹	ght	ght

2A. Zeotropic Blends (400 Series Refrigerants) and their Allowable Levels of Contaminants								
	R-401A	R-401B	R-402A	R-402B	R-403A	R-403B	R-404A	R-405
reference section								
N/A	R-22/ 152a/124	R-22/ 152a/124	R-125/ 290/22	R-125/ 290/22	R-290/ 22/218	R-290/ 22/218	R-125/ 143a/134a	R-22/152a/ 142b/C318
N/A	53.0/13.0/ 34.0	61.0/11.0/ 28.0	60.0/2.0/ 38.0	38.0/2.0/60.0	5.0/75.0/ 20.0	5.0/56.0/ 39.0	44.0/52.0/ 4.0	45.0/7.0/5.5/42.5
N/A	51.0-55.0/ 11.5-13.5/ 33.0-35.0	59.0-63.0/ 9.5-11.5/ 27.0-29.0	58.0-62.0/ 1.0-2.1/ 36.0-40.0	36.0-40.0/ 1.0-2.1/ 58.0-62.0	3.0-5.2/ 73.0-77.0/ 18.0-22.0	3.0-5.2/ 54.0-58.0/ 37.0-41.0	42.0-46.0/ 51.0-53.0/ 2.0-6.0	43.0-47.0/ 6.0-8.0/ 4.5-6.5/ 40.5-44.5
N/A	-33.3	-34.9	-49	-47	-47.8	-49.2	-46.2	-32.9
N/A	-26.4	-28.8	-46.9	-44.7	-44.3	-46.8	-45.5	-24.5
N/A	105.3	103.5	76	83	87	79.7	72.1	106
5.10	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
5.4	10	10	10	10	10	10	10	10
5.11	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
5.8	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
5.9	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean
5.7	1	1	1	1	1	1	1	1
5.6	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity

Isotopically Enriched Blends (400 Series Refrigerants) and their Allowable Levels of Contaminants (continued)								
	R-406A	R-407A	R-407B	R-407C	R-407D	R-407E	R-407F	R-408A
Reference section								
N/A	R-22/600a/142b	R-32/125/134a	R-32/125/134a	R-32/125/134a	R-32/125/134a	R-32/125/134a	R-32/125/134a	R-125/143a/22
N/A	55.0/4.0/41.0	20.0/40.0/40.0	10.0/70.0/20.0	23.0/25.0/52.0	15.0/15.0/70.0	25.0/15.0/60.0	30.0/30.0/40.0	7.0/46.0/47.0
N/A	53.0-57.0/3.0-5.0/40.0-42.0	18.0-22.0/38.0-42.0/38.0-42.0	8.0-12.0/68.0-72.0/18.0-22.0	21.0-25.0/23.0-27.0/50.0-54.0	13.0-17.0/13.0-17.0/68.0-72.0	23.0-27.0/13.0-17.0/58.0-62.0	28.0-32.0/28.0-32.0/38.0-42.0	5.0-9.0/45.0-47.0/45.0-49.0
N/A	-32.7	-45.3	-46.8	-43.6	-39.5	-42.9	-46.1	-44.6
N/A	-23.5	-38.9	-42.5	-36.6	-32.9	-35.8	-39.7	-44.1
N/A	116.5	82.3	75	86	91.4	88.5	83	83.1
5.10	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
5.4	10	10	10	10	10	10	10	10
5.11	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
5.8	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
5.9	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean
5.7	1	1	1	1	1	1	1	1
5.6	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity

Zeotropic Blends (400 Series Refrigerants) and their Allowable Levels of Contaminants (continued)									
Units	Reference Section	R-409A	R-409B	R-410A	R-410B	R-411A	R-411B	R-412A	R-413A
	N/A	R-22/ 124/142b	R-22/ 124/142b	R-32/125	R-32/125	R-1270/ 22/152a	R-1270/ 22/152a	R-22/218/ 142b	R-218/ 134a/600a
Weight	N/A	60.0/25.0/ 15.0	65.0/25.0/ 10.0	50.0/50.0	45.0/55.0	1.5/87.5 /11.0	3.0/94.0/ 3.0	70.0/5.0/ 25.0	9.0/88.0/3.0
Weight	N/A	58.0-62.0/ 23.0-27.0/ 14.0-16.0	63.0-67.0/ 23.0-27.0/ 9.0-11.0	48.5-50.5/ 49.5-51.5	44.0-46.0/ 54.0-56.0	0.5-1.5/ 87.5-89.5/ 10.0-11.0	2.0-3.0/ 94.0-96.0/ 2.0-3.0	68.0-72.0/ 3.0-7.0/ 24.0-26.0	8.0-10.0/ 86.0-90.0/ 2.0-3.0
kPa	N/A	-34.7	-35.6	-51.4	-51.3	-39.5	-41.6	-38	-30.6
kPa	N/A	-26.4	-27.9	-51.4	-51.6	-36.6	-40	-28.7	-27.9
	N/A	106.9	106.9	71.4	70.8	99.1	96	107.2	98.5
Weight	5.10	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Weight	5.4	10	10	10	10	10	10	10	10
Weight	5.11	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Weight or Volume	5.8	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Visual	5.9	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean
Weight	5.7	1	1	1	1	1	1	1	1
Visual	5.6	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity

2A. Zeotropic Blends (400 Series Refrigerants) and their Allowable Levels of Contaminants (continued)								
Contaminating Units	Reference Section	R-414A	R-414B	R-415A	R-415B	R-416A	R-417A	R-417B
N/A	N/A	R-22/124/600a/142b	R-22/124/600a/142b	R-22/152a	R-22/152a	R-134a/124/600	R-125/134a/600	R-125/134a/600
by weight	N/A	51.0/28.5/4.0/16.5	50.0/39.0/1.5/9.5	82.0/18.0	25.0/75.0	59.0/39.5/1.5	46.6/50.0/3.4	79.0/18.3/2.7
by weight	N/A	49.0-53.0/26.5-30.5/3.5-4.5/15.5-17.0	48.0-52.0/37.0-41.0/1.0-2.0/8.5-10.0	81.0-83.0/17.0-19.0	24.0-26.0/74.0-76.0	58.0-59.5/39.0-40.5/1.3-1.6	45.5-47.7/49.0-51.0/3.0-3.5	78.0-80.0/17.3-19.3/2.2-2.8
101.3 kPa	N/A	-34	-32.9	-37.5	-27.7	-23.4	-38	-44
101.3 kPa	N/A	-25.8	-24.3	-34.7	-26.2	-21.8	-32.9	-41.5
°C	N/A	110.7	111	100	111.3	108.2	89.9	75.2
by volume 25.0 °C	5.10	1.5	1.5	1.5	1.5	1.5	1.5	1.5
by weight	5.4	10	10	10	10	10	10	10
by weight	5.11	0.5	0.5	0.5	0.5	0.5	0.5	0.5
by volume or by weight	5.8	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Pass or Fail	5.9	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean
by weight (HCl)	5.7	1	1	1	1	1	1	1
Pass or Fail	5.6	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity

Topic Bends (400 Series Refrigerants) and their Allowable Levels of Contaminants (continued)										
Reference Section	R-417C	R-418A	R-419A	R-419B	R-420A	R-421A	R-421B	R-422A	R-422B	
N/A	R-125/ 134a/600	R-290/ 22/152a	R-125/ 134a/ E170	R-125/ 134a/E17 0	R-134a/ 142b	R-125/ 134a	R-125/ 134a	R-125/ 134a/600a	R-125/ 134a/600a	R-125/ 134a/600a
N/A	19.5/78.8/ 1.7	1.5/96.0/ 2.5	77.0/19.0/ 4.0	48.5/48.0/ 3.5	88.0/12.0	58.0/42.0	85.0/15.0	85.1/11.5/ 3.4	55.0/42.0/ 3.0	55.0/42.0/ 3.0
N/A	18.5-20.5/ 77.8-79.8/ 1.2-1.8	1.0-2.0/ 95.0-97.0/ 2.0-3.0	76.0-78.0/ 18.0-20.0/ 3.0-5.0	47.5-49.5/ 47.0-49.0/ 3.0-4.0	88.0-89.0/ 11.0-12.0	57.0-59.0/ 41.0-43.0	84.0-86.0/ 14.0-16.0	84.1-86.1/ 10.5-12.5/ 3.0-3.5	54.0-56.0/ 41.0-43.0/ 2.5-3.1	54.0-56.0/ 41.0-43.0/ 2.5-3.1
N/A	-32.7	-41.2	-42.6	-37.4	-25	-40.8	-45.7	-46.5	-40.5	-40.5
N/A	-29.2	-40.1	-36	-31.5	-24.2	-35.5	-42.6	-44.1	-35.6	-35.6
N/A	95.4	96.7	79.1	90.4	105.4	78.5	69	71.7	85.7	85.7
5.10	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
5.4	10	10	10	10	20	10	10	10	10	10
5.11	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
5.8	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
5.9	Visually clean	Visually clean	Visually Clean	Visually clean	Visually clean	Visually Clean	Visually clean	Visually clean	Visually clean	Visually clean
7	1	1	1	1	1	1	1	1	1	1
8.6	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity

Zeotropic Blends (400 Series Refrigerants) and their Allowable Levels of Contaminants (continued)									
	R-422C	R-422D	R-422E	R-423A	R-424A	R-425A	R-426A	R-427A	R-428A
Reference section									
N/A	R-125/ 134a/600a	R-125/ 134a/600a	R-125/ 134a/600a	R-134a/ 227ea	R-125/ 134a/600a/ 600/601a	R-32/134a/ 227ea	R- 125/134a/ 600/601a	R-32/125/ 143a/134a	R-125/143a/ 290/600a
N/A	82.0/15.0/ 3.0	65.1/30.5/ 3.4	58.0/39.3/ 2.7	52.5/47.5	50.5/47.0/ 0.9/1.0/0.6	18.5/69.5/ 12.0	5.1/93.0/ 1.3/0.6	15.0/25.0/ 10.0/50.0	77.5/20.0/ 0.6/1.9
N/A	81.0-83.0/ 14.0-16.0/ 2.5-3.1	64.0-66.0/ 30.5-32.5/ 3.0-3.5	57.0-59.0/ 38.0-41.0/ 2.5-3.0	51.5-53.5/ 46.5-48.5	49.5-51.5/ 46.0-48.0/ 0.7-1.0/ 0.8-1.1/ 0.4-0.7	18.0-19.0/ 69.0-70.0/ 11.5-12.5	4.1-6.1/ 92.0-94.0/ 1.1-1.4/ 0.4-0.7	13.0-17.0/ 23.0-27.0/ 8.0-12.0/ 48.0-52.0	76.5-78.5/ 19.0-21.0/ 0.4-0.7/ 1.7-2.0
N/A	-45.3	-43.2	-41.8	-24.2	-39.1	-38.1	-28.5	-43	-48.3
N/A	-42.3	-38.4	-36.4	-23.5	-33.3	-31.3	-26.7	-36.3	-47.5
N/A	76.1	79.6	82.2	99	87.5	93.9	100.2	85.3	69
5.10	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
5.4	10	10	20	10	10	10	10	10	10
5.11	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
5.8	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
5.6	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity

Table 2A Zeotropic Blends (400 Series Refrigerants) and their Allowable Levels of Contaminants (continued)										
Reference Section	R-429A	R-430A	R-431A	R-434A	R-435A	R-437A	R-438A	R-439A	R-440A	
N/A	R-E170/ 152a/600a	R-152a/ 600a	R290/152a	R-125/ 143a/134a/ 600a	R-E170/ 152a	R-125/ 134a/600 /601	R-32/125/ 134a/600 /601a	R-32/125/ 600a	R-290/ 134a/152a	
N/A	60.0/10.0/ 30.0	76.0/24.0	71.0/29.0	63.2/18.0/ 16.0/2.8	80.0/20.0	19.5/78.5/ 1.4/0.6	8.5/45.0/ 44.2/1.7/ 0.6	50/47.0/ 3.0	0.6/1.6/97.8	
N/A	59.0-61.0/ 9.0-11.0/ 29.0-31.0	75.0-77.0/ 23.0-25.0	70.0-72.0/ 28.0-30.0	62.2-64.2/ 17.0-19.0/ 15.0-17.0/ 2.6-2.9	79.0-81.0/ 19.0-21.0	17.7-20.0/ 77.8-80.0/ 1.2-1.5/ 0.4-0.7	7.0-9.0/ 43.5-46.5/ 42.7-45.7/ 1.5-1.8/ 0.4-0.7	49.0-51.0/ 46.0-48.0/ 2.5-3.5	0.5-0.7/ 1.0-2.2/ 97.3-98.3	
N/A	-25.5	-27.6	-43.2	-45.1	-26	-32.9	-43	-52	-25.5	
N/A	-24.9	-27.4	-43.2	-42.4	-25.8	-29.2	-36.4	-51.7	-24.3	
N/A	123.5	107	100.3	75.6	125.2	95.3	84.2	72	112.9	
5.10	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
5.4	10	10	20	20	10	10	20	10	10	
5.11	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
5.8	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	
5.9	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	
5.7	1	1	1	1	1	1	1	1	1	
5.8	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	

Table 2A. Zeotropic Blends (400 Series Refrigerants) and their Allowable Levels of Contaminants (continued)										
Reference Section	R-442A	R-444A	R-444B	R-445A	R-446A	R-447A	R-448A	R-449A	R-449B	
N/A	R-32/125/ 134a/152a/ 227ea	R-32/152a/ 1234ze(E)	R-32/152a/ 1234ze(E)	R-744/ 134a/ 1234ze(E)	R-32/ 1234ze(E)/ 600	R-32/ 125/ 1234ze (E)	R-32/125/ 1234yf/ 134a/ 1234ze(E)	R-32/125/ 1234yf/ 134a	R-32/125/ 1234yf/134a	
Weight	31.0/31.0/ 30.0/3.0/ 5.0	12.0/5.0/ 83.0	41.5/10.0/ 48.5	6.0/9.0/ 85.0	68.0/29.0/ 3.0	68.0/3.5/ 28.5	26.0/26.0/ 20.0/21.0/ 7.0	24.3/24.7/ 25.3/25.7	25.2/24.3/ 23.2/27.3	
Weight	30.0-32.0/ 30.0-32.0/ 29.0-31.0/ 2.5-3.5/ 4.0-6.0	11.0-13.0/ 4.0-6.0/ 81.0-85.0	40.5-42.5/ 9.0-11.0/ 47.5-49.5	5.0-7.0/ 8.0-10.0/ 83.0-87.0	67.0-68.5/ 28.4-31.0/ 2.0-3.1	67.5-69.5/ 3.0-5.0/ 27.5-29.5	24.0-26.5/ 25.5-28.0/ 18.0-20.5/ 20.0-23.0/ 5.0-7.5	23.3-24.5/ 24.5-25.7/ 24.3-25.5/ 25.5-26.7	23.7-25.5/ 24.0-25.8/ 21.7-23.5/ 27.0-28.8	
1.3 kPa	N/A	-46.5	-44.6	-50.3	-49.4	-49.3	-45.9	-46	-46.1	
1.3 kPa	N/A	-39.9	-34.9	-23.5	-42.1	-44.2	-39.8	-39.9	-40.2	
	N/A	82.4	103.2	98	84.2	82.6	81.6	81.5	84.2	
VTS:										
Volume °C	5.10	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
VTS:										
Weight	5.4	10	10	10	10	10	10	10	10	
Weight	5.11	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Volume or Weight	5.8	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	
Fail	5.9	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	
Weight (1)	5.7	1	1	1	N/A	1	1	1	1	
Fail	5.6	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	

and critical temperatures, although not required, are provided for informational purposes. Refrigerant data compiled from Refprop 9.1.

pass/fails about 3 ppm.

Table 2. Zeotropic Blends (400 Series Refrigerants) and their Allowable Levels of Contaminants (continued)									
Reference Section	R-450A	R-451A	R-451B	R-452A	R-453A	R-454A	R-454B	R-455A	
N/A	R-134a/ 1234ze(E)	R-1234yf/ 134a	R-1234yf/ 134a	R-32/125/ 1234yf	R-32/125/ 134a/227e/600/601a	R-32/ 1234yf	R-32/ 1234yf	R-744/32/ 1234yf	
N/A	42.0/58.0	89.8/10.2	88.8/11.2	11.0/59.0/ 30.0	20.0/20.0/53.8/ 5.0/0.6/0.6	35.0/65.0	68.9/31.1	3.0/21.5/ 75.5	
N/A	40.0-44.0/ 56.0-60.0	89.6-90.0/ 10.0-10.4	88.6-89.0/ 11.0-11.4	9.3-12.7/ 57.2-60.8/ 29.0-30.1	19.0-21.0/19.0-21.0/ 52.8-54.8/4.5-5.5/ 0.4-0.7/0.4-0.7	33.0-37.0/ 63.0-67.0	67.9-69.9/ 30.1-32.1	2.0-5.0/ 19.5-22.5/ 73.5-77.5	
N/A	-23.4	-30.8	-31	-47.0	-42.2	-48.4	-50.9	-51.6	
N/A	-22.8	-30.5	-30.6	-43.2	-35	-41.6	-50.0	-39.1	
N/A	104.4	95.4	95.5	74.9	88	86.2	76.5	82.8	
5.10	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
5.4	10	10	10	10	10	10	10	10	
5.11	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
5.8	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	
5.9	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	
5.7	1	1	1	1	N/A	1	1	1	
page 66 of 137	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	

Refrigerant data compiled from Refprop 9.1.

Refrigerant temperatures, although not required, are provided for informational purposes. Refrigerant data compiled from Refprop 9.1.

Table 2B. Hydrocarbon Blends (400 & 500 Series Refrigerants) and their Allowable Levels of Contaminants									
g	Reference Section	R-432A	R-433A	R-433B	R-433C	R-436A	R-436B	R-441A	R-443A
ght	N/A	R-1279/E170	R-1270/290	R-1270/290	R-1270/290	R-290/600a	R-290/600a	R-170/290/600a/600	R-1270/290/600a
ght	N/A	80.0/20.0	30.0/70.0	5.0/95.0	25.0/75.0	56.0/44.0	52.0/48.0	3.1/54.8/6.0/36.1	55.0/40.0/5.0
ght	N/A	79.0-81.0/ 19.0-21.0	29.0-31.0/ 69.0-71.0	4.0-6.0/ 94.0- 96.0	24.0-26.0/ 74.0-76.0	55.0-57.0/ 43.0-45.0	51.0-53.0/ 47.0- 49.0	2.8-2.4/52.8-56.8/ 5.4-6.6/34.1-38.1	53.0-57.0/ 38.0-42.0/ 3.8-6.2
kPa	N/A	-45.2	-44.4	-42.5	-44.1	-34.3	-33.3	-41.5	-45.2
kPa	N/A	-42.4	-44	-42.4	-43.7	-26.1	-25	-20.3	-42.1
	N/A	97.3	94.4	96.3	94.8	115.9	117.4	117.3	95.1
me C	5.10	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
ne or ght	5.8	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
ail	5.9	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean
ght	5.7	1	1	1	1	1	1	1	N/A
ght	5.4	20	10	10	10	10	10	10	10
ght	5.11	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
ght	5.12	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
ail	5.6	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	N/A	N/A

Critical temperatures, although not required, are provided for informational purposes. Refrigerant data compiled from Refprop 9.1.

Table 3. Azeotropic Blends (500 Series Refrigerants) and their Allowable Levels of Contaminants

Reporting Unit	Reference Section	R-500	R-502	R-503	R-507A	R-508A	R-508B	R-509A	R-510A	R-511A	R-512A	R-513A
N/A	N/A	R-12/152a	R-22/115	R-23/13	R-125/143a	R-23/116	R-23/116	R-22/218	R-E170/600a	R-290/E170	R-134a/152a	R-1234yf/134a
% by weight	N/A	73.8/26.2	48.8/51.2	40.1/59.9	50.0/50.0	39.0/61.0	46.0/54.0	44.0/56.0	88.0/12.0	95.0/5.0	5.0/95.0	56.0/44.0
% by weight	N/A	72.8-74.8/25.2-27.2	44.8-52.8/47.2-55.2	39.0-41.0/59.0-61.0	49.5-51.5/48.5-50.5	37.0-41.0/59.0-63.0	44.0-48.0/52.0-56.0	42.0-46.0/56.0-60.0	87.5-88.5/11.5-12.5	94.0-96.0/4.0-6.0	4.0-6.0/94.0-96.0	55.0-57.0/43.0-45.0
C @ 101.3 kPa	N/A	-33.6	-45.2	-87.8	-46.7	-87.4	-87	-49.8	-24.9	-42	-24	-29.2
C @ 101.3 kPa	N/A	-33.6	-45	-87.8	-46.7	-87.4	-87	-48.1	-24.9	-42	-24	-29.1
°C	N/A	102.1	80.2	18.4	70.6	10.8	11.8	68.6	125.7	97	112.9	96.5
CONTAMINANTS:												
% by volume @ 25 °C	5.10	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
CONTAMINANTS:												
ppm by weight	5.4	10	10	10	10	10	10	10	20	20	10	10
% by weight	5.11	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
% by volume or % by weight	5.8	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Pass or Fail	5.9	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean
ppm by weight	5.7	1	1	1	1	1	1	1	1	1	1	1
Pass or Fail	5.6	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity

new point and critical temperatures, although not required, are provided for informational purposes. Refrigerant data compiled from Refprop 9.1.

side level for pass/fail is about 3 ppm.

Section 7.0 References—Normative

Listed here are all standards, handbooks, and other publications essential to the formation and implementation of the standard. All references in this appendix are considered as part of this standard.

ANSI/ASHRAE Standard 34-2013, *Designation and Safety Classification of Refrigerants*, with Addenda, American National Standards Institute/American Society of Heating, Refrigerating, and Air-Conditioning Engineers.

2008 Appendix C to AHRI Standard 700-2014, *2008 Appendix C for Analytical Procedures for AHRI Standard 700-2014—Normative*, copyright 2008 (incorporated by reference, see § 82.168).

ASTM D1296-01 (Reapproved 2012), *Standard Test Method for Odor of Volatile Solvents and Diluents*, approved July 1, 2012, (incorporated by reference, see § 82.168).

BB-F-1421B, Federal Specification for “Fluorocarbon Refrigerants,” dated March 5, 1982, (incorporated by reference, see § 82.168).

GPA Standard 2177-13, *Analysis of Natural Gas Liquid Mixtures Containing Nitrogen and Carbon Dioxide by Gas Chromatography, Revised*, copyright 2013, (incorporated by reference, see § 82.168).

REFPROP Reference Fluid Thermodynamic and Transport Properties *NIST Standard Reference Database 23 version 9.1*, 2013, U.S. Department of Commerce, Technology Administration, National Institute of Standards and Technology.

Section 8.0 References—Informative

Listed here are standards, handbooks, and other publications which may provide useful information and background but are not considered essential.

2012 Appendix D to AHRI Standard 700-2014, *2012 Appendix D for Gas Chromatograms for AHRI Standard 700-2014—Informative*, copyright 2012, (incorporated by reference, see § 82.168).

[81 FR 82365, Nov. 18, 2016]

Appendix A1 to Subpart F of Part 82—Generic Maximum Contaminant Levels

Contaminant	Reporting units
Air and Other Non-condensables	1.5% by volume @ 25 °C (N/A for refrigerants used in low-pressure appliances ¹).
Water	10 ppm by weight 20 ppm by weight (for refrigerants used in low-pressure appliances ¹).

¹ Low-pressure appliances means an appliance that uses a refrigerant with a liquid phase saturation pressure below 45 psia at 104 °F.

Contaminant	Reporting units
Other Impurities Including Refrigerant	0.50% by weight.
High boiling residue	0.01% by volume.
Particulates/solids	visually clean to pass.
Acidity	1.0 ppm by weight.
Chlorides (chloride level for pass/fail is 3ppm)	No visible turbidity.

¹ Low-pressure appliances means an appliance that uses a refrigerant with a liquid phase saturation pressure below 45 psia at 104 °F.

BLEND COMPOSITIONS (WHERE APPLICABLE)

Nominal composition (by weight%)	Allowable composition (by weight%)
Component constitutes 25% or more	±2.0
Component constitutes less than 25% but greater than 10%	±1.0
Component constitutes less than or equal to 10%	±0.5

[69 FR 11988, Mar. 12, 2004]

Appendix B1 to Subpart F of Part 82—Performance of Refrigerant Recovery, Recycling and/or Reclaim Equipment

This appendix is based on the Air-Conditioning and Refrigeration Institute Standard 740-1993.

Refrigerant Recovery/Recycling Equipment

Section 1. Purpose

1.1 *Purpose.* The purpose of this standard is to establish methods of testing for rating and evaluating the performance of refrigerant recovery, and/or recycling equipment, and general equipment requirements (herein referred to as “equipment”) for containment or purity levels, capacity, speed, and purge loss to minimize emission into the atmosphere of designated refrigerants.

1.1.1 This standard is intended for the guidance of the industry, including manufacturers, refrigerant reclaimers, repackers, distributors, installers, servicemen, contractors and for consumers.

1.1.2 This standard is not intended to be used as a guide in defining maximum levels of contaminants in recycled or reclaimed refrigerants used in various applications.

1.2 *Review and Amendment.* This standard is subject to review and amendment as the technology advances.

Section 2. Scope

2.1 *Scope.* This standard defines general equipment requirements and the test apparatus, test mixtures, sampling and analysis techniques that will be used to determine the performance of recovery and/or recycling equipment for various refrigerants including R11, R12, R13, R22, R113, R114, R123, R134a, R500, R502, and R503, as referenced in the ANSI/ASHRAE Standard 34-1992, "Number Designation of Refrigerants" (American Society of Heating, Refrigerating, and Air Conditioning Engineers, Inc.).

Section 3. Definitions

3.1 *Recovered refrigerant.* Refrigerant that has been removed from a system for the purpose of storage, recycling, reclamation or transportation.

3.2 Recover. Reference 40 CFR 82.152.

3.3 Recycle. Reference 40 CFR 82.152.

3.4 Reclaim. Reference 40 CFR 82.152.

3.5 *Standard Contaminated Refrigerant Sample.* A mixture of new and/or reclaimed refrigerant and specified quantities of identified contaminants which are representative of field obtained, used refrigerant samples and which constitute the mixture to be processed by the equipment under test.

3.6 *Push/Pull Method.* The push/pull refrigerant recovery method is defined as the process of transferring liquid refrigerant from a refrigeration system to a receiving vessel by lowering the pressure in the vessel and raising the pressure in the system, and by connecting a separate line between the system liquid port and the receiving vessel.

3.7 *Recycle Rate.* The amount of refrigerant processed (in pounds) divided by the time elapsed in the recycling mode in pounds per minute. For equipment which uses a separate recycling sequence, the recycle rate does not include the recovery rate (or elapsed time). For equipment which does not use a separate recycling sequence, the recycle rate is a maximum rate based solely on the higher of the liquid or vapor recovery rate, by which the rated contaminant levels can be achieved.

3.8 *Equipment Classification.*

3.8.1 *Self Contained Equipment.* A refrigerant recovery or recycling system which is capable of refrigerant extraction without the assistance of components contained within an air conditioning or refrigeration system.

3.8.2 *System Dependent Equipment*. Refrigerant recovery equipment which requires for its operation the assistance of components contained in an air conditioning or refrigeration system.

3.9 “*Shall*”, “*Should*”, “*Recommended*” or “*It is Recommended*”, “*Shall*” “*Should*”, “*recommended*”, or “*it is recommended*” shall be interpreted as follows:

3.9.1 *Shall*. Where “*shall*” or “*shall not*” is used for a provision specified, that provision is mandatory if compliance with the standard is claimed.

3.9.2 *Should, Recommended, or It is Recommended*, “*Should*”, “*recommended*”, is used to indicate provisions which are not mandatory but which are desirable as good practice.

Section 4. General Equipment Requirements

4.1 The equipment manufacturer shall provide operating instructions, necessary maintenance procedures, and source information for replacement parts and repair.

4.2 The equipment shall indicate when any filter/drier(s) needs replacement. This requirement can be met by use of a moisture transducer and indicator light, by use of a sight glass/moisture indicator, or by some measurement of the amount of refrigerant processed such as a flow meter or hour meter. Written instructions such as “to change the filter every 400 pounds, or every 30 days” shall not be acceptable except for equipment in large systems where the Liquid Recovery Rate is greater than 25 lbs/min [11.3 Kg/min] where the filter/drier(s) would be changed for every job.

4.3 The equipment shall either automatically purge non-condensables if the rated level is exceeded or alert the operator that the non-condensable level has been exceeded. While air purge processes are subject to the requirements of this section, there is no specific requirement to include an air purge process for “recycle” equipment.

4.4 The equipment's refrigerant loss due to non-condensable purging shall not be exceeded 5% by weight of total recovered refrigerant. (See Section 9.4)

4.5 Internal hose assemblies shall not exceed a permeation rate of 12 pounds mass per square foot [5.8 g/cm²] of internal surface per year at a temperature of 120 F [48.8 °C] for any designated refrigerant.

4.6 The equipment shall be evaluated at 75 F [24 °C] per 7.1. Normal operating conditions range from 50 °F to 104 F [10 °C to 40 °C].

4.7 *Exemptions*:

4.7.1 Equipment intended for recovery only shall be exempt from sections 4.2 and 4.3.

TABLE 1—STANDARD CONTAMINATED REFRIGERANT SAMPLES

	R11	R12	R13	R22	R113	R114	R123	R134a	R500	R502	R503
Moisture content:											
PPM by weight of pure refrigerant	100	80	30	200	100	85	100	200	200	200	30
Particulate content:											
PPM by weight of pure refrigerant characterized by ¹	80	80	80	80	80	80	80	80	80	80	80
Acid content:											
PPM by weight of pure refrigerant—(mg KOH per kg refig.) characterized by ²	500	100	NA	500	400	200	500	100	100	100	NA
Mineral oil content:											
% by weight of pure refrigerant	20	5	NA	5	20	20	20	5	5	5	NA
Viscosity (SUS)	300	150		300	300	300	300	150	150	150	
Non condensable gases air content % volume ³ >	NA	3	3	3	NA	3	3	3	3	3	3

¹ Particulate content shall consist of inert materials and shall comply with particulate requirements in ASHRAE Standard 63.2, "Method of Testing of Filtration Capacity of Refrigerant Liquid Line Filters and Filter Driers."

² Acid consists of 60% oleic acid and 40% hydrochloric acid on a total number basis.

³ Synthetic ester based oil.

Section 5. Contaminated Refrigerants

5.1 The standard contaminated refrigerant sample shall have the characteristics specified in Table 1, except as provided in 5.2

5.2 Recovery equipment not rated for any specific contaminant can be tested with new or reclaimed refrigerant.

Section 6. Test Apparatus

6.1 Self Contained Equipment Test Apparatus. The apparatus as shown in Figure 1 consists of a 3 cubic foot [0.085 m³] mixing chamber with a conical-shaped bottom, although a larger mixing chamber is permissible. The size of the mixing chamber depends upon the size of the equipment. The outlet at the bottom of the cone and all restrictions and valves for liquid and vapor refrigerant lines in the test apparatus shall be a minimum of 0.375 in. [9.5 mm] inside diameter or equivalent. The minimum inside diameter for large equipment for use on chillers shall be 1.5 in. [38 mm.]. The mixing chamber shall contain various ports for receiving liquid refrigerant, oil, and contaminants. A recirculating line connected from the bottom outlet through a recirculating pump and then to a top vapor port shall be provided for stirring of the mixture. Isolation valves may be required for the pump. Alternative stirring means may be used if demonstrated to be equally effective.

6.1.1 For liquid refrigerant feed, the liquid valve is opened. For vapor refrigerant feed, the vapor valve is opened and refrigerant passes through an evaporator coil. Flow is controlled by a thermostatic expansion valve to create 5 F [3 °C] superheat at an evaporator temperature of 70 F ±3 F [21 °C±2°]. The evaporator coil or equivalent evaporator means shall be either sized large enough for the largest system or be sized for each system.

6.1.2 An alternative method for vapor refrigerant feed is to pass through a boiler and then an automatic pressure regulating valve set at refrigerant saturation pressure at 75 F ±3 F [24 °C ±2 °C].

6.2 System Dependent Equipment Test Apparatus. This test apparatus is to be used for final recovery vacuum rating of all system dependent equipment.

6.2.1 The test apparatus shown in Figure 2 consists of a complete refrigeration system. The manufacturer shall identify the refrigerants to be tested. The test apparatus can be modified to facilitate operation or testing of the system dependent equipment if the modifications to the apparatus are specifically described within the manufacturer's literature. (See *Figure 2.*) A 1/4 inch [6.3 mm] balance line shall be connected across the test apparatus between the high and low pressure sides, with an isolation valve located at the connection to the compressor high side. A 1/4 inch [6.3 mm] access port with a valve core shall be located in the balance line for the purpose of measuring final recovery vacuum at the conclusion of the test.

FIGURE 1

Test Apparatus for Self-Contained Equipment

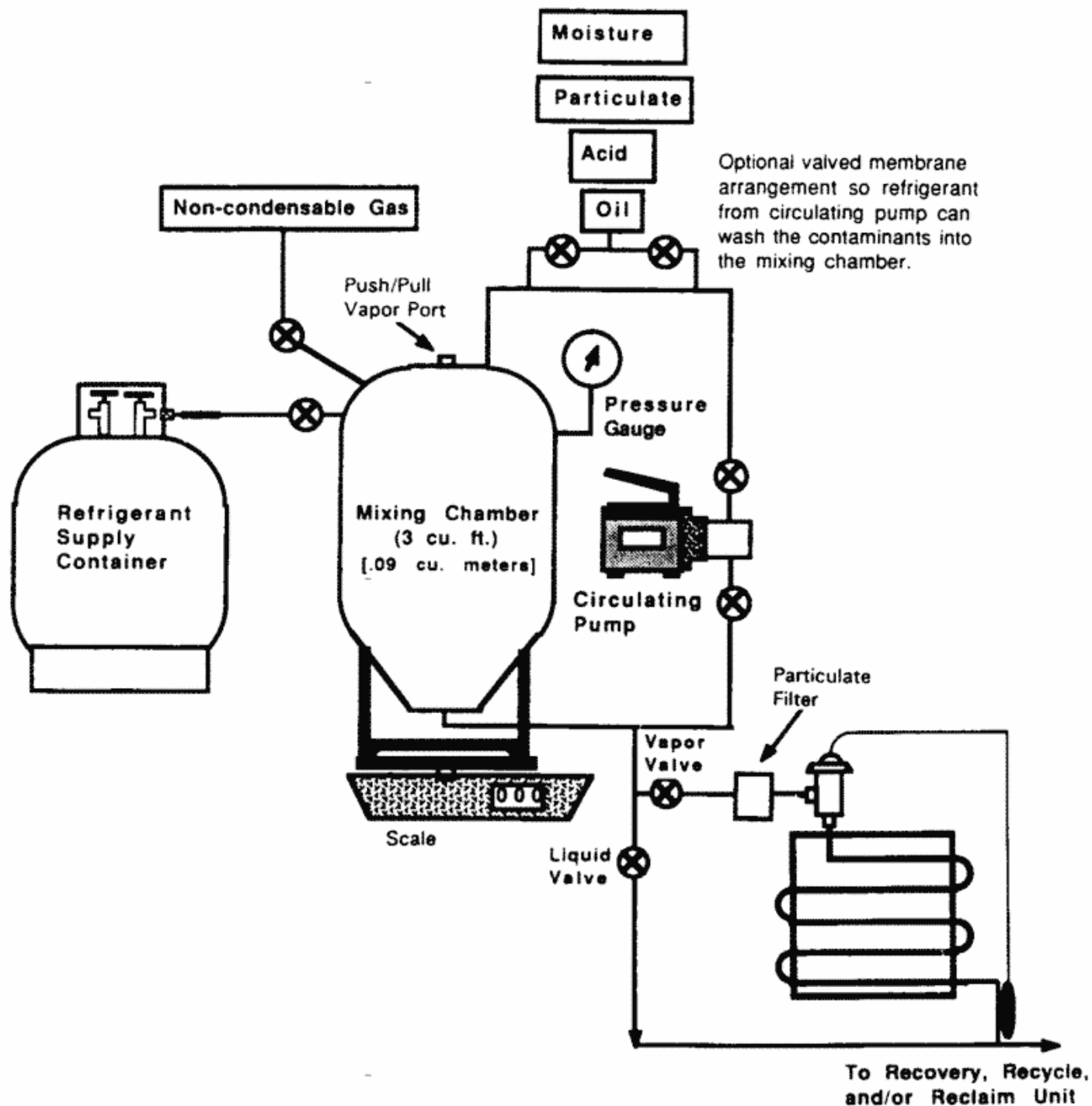
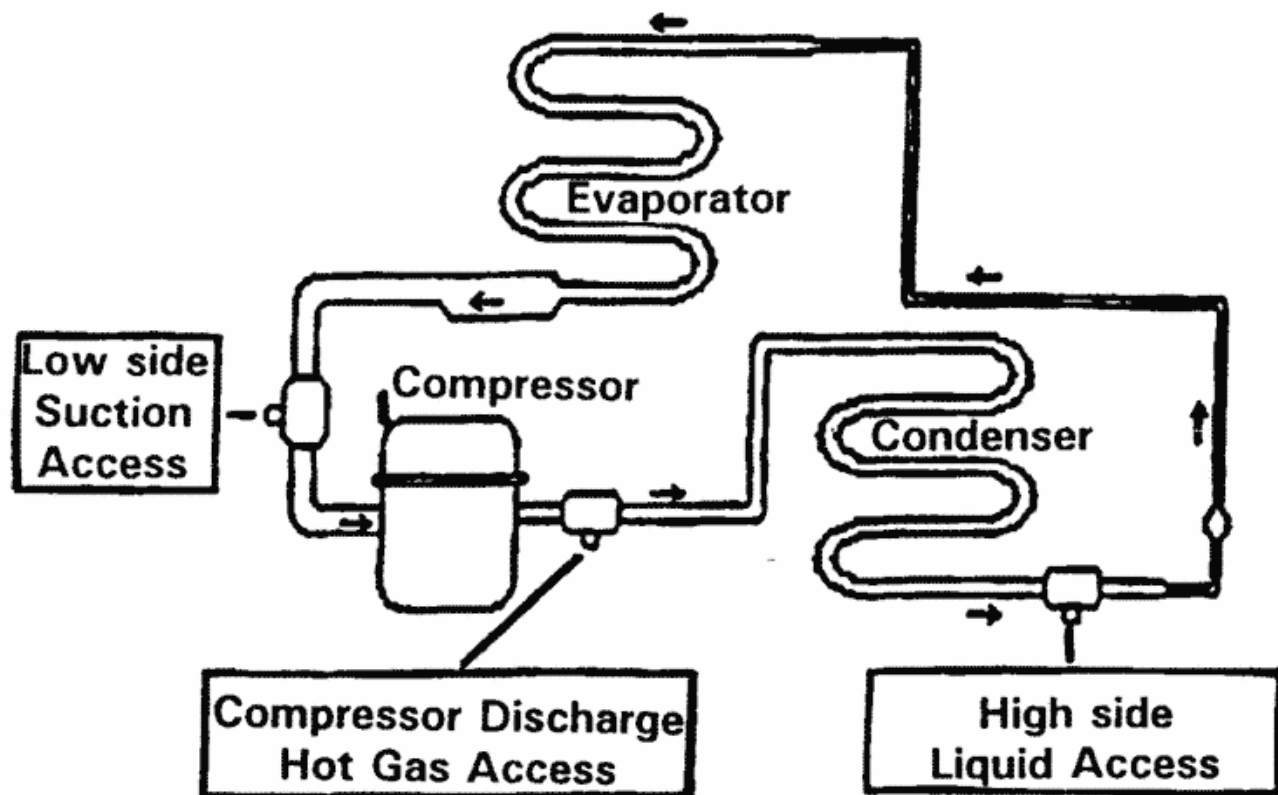


FIGURE 2

System-Dependent Equipment Test Apparatus

Configuration of a standard air conditioning or refrigeration system for use as a test apparatus



Section 7. Performance Testing

7.1 Contaminant removal and performance testing shall be conducted at 75 F $\pm$ 2 F [23.9 °C $\pm$ 1.1 °C].

7.1.1 The equipment shall be prepared for operation per the instruction manual.

7.1.2 The contaminated sample batch shall consist of not less than the sum of the amounts required to complete steps 7.1.2.2 and 7.1.2.3 below.

7.1.2.1 A liquid sample shall be drawn from the mixing chamber prior to starting the test to assure quality control of the mixing process.

7.1.2.2 Vapor refrigerant feed testing, if elected, shall normally be processed first. After the equipment reaches stabilized conditions of condensing temperature and/or storage tank pressure, the vapor feed recovery rate shall be measured. One method is to start measuring the vapor refrigerant recovery rate when 85% of refrigerant remains in the mixing chamber and continue for a period of time sufficient to achieve the accuracy in 9.2. If liquid feed is not elected, complete Step 7.1.2.4.

7.1.2.3 Liquid refrigerant feed testing, if elected, shall be processed next. After the equipment reaches stabilized conditions, the liquid feed recovery rate shall be measured. One method is to wait 2 minutes after starting liquid feed and then measure the liquid refrigerant recovery rate for a period of time sufficient to achieve the accuracy in 9.1. Continue liquid recovery operation as called for in 7.1.2.4.

7.1.2.4 Continue recovery operation until all liquid is removed from the mixing chamber and vapor is removed to the point where the equipment shuts down per automatic means or is manually stopped per the operating instructions.

7.1.2.5 After collecting the first contaminated refrigerant sample batch, the liquid and vapor value of the apparatus shall be closed and the mixing chamber pressure recorded after 1 minute as required in 9.5. After preparing a second contaminated refrigerant sample batch, continue recovery until the storage container reaches 80% liquid fill level. After recycling and measuring the recycle rate per section 7.1.3, set this container aside for the vapor sample in 8.2.2.

7.1.2.6 Interruptions in equipment operations as called for in instruction manual are allowable.

7.1.3 Recycle as called for in equipment operating instructions. Determine recycle rate by appropriate means as required in 9.3.

7.1.4 Repeat steps 7.1.2, 7.1.2.4, and 7.1.3 with contaminated refrigerant sample until equipment indicator(s) show need to change filter(s). It will not be necessary to repeat the recycle rate determination in 7.1.3.

7.1.4.1 For equipment with a multiple pass recirculating filter system, analyze the contents of the previous storage container.

7.1.4.2 For equipment with a single pass filter system, analyze the contents of the current storage container.

7.1.5 Refrigerant loss due to the equipment's non-condensable gas purge shall be determined by appropriate means. (See Section 9.4.)

7.2 System Dependent Equipment. This procedure shall be used for vacuum rating of all system dependent equipment. Liquid refrigerant recovery rate, vapor refrigerant recovery rate, and recycle rate are not tested on system dependent systems.

7.2.1 The apparatus operation and testing shall be conducted at 75 F $\pm$ 2 F. [23.9 °C. $\pm$ 1.1. °C.].

7.2.2 The apparatus shall be charged with refrigerant per its system design specifications.

7.2.3 For measurement of final recovery vacuum as required in 9.5, first shut the balance line isolation valve and wait 1 minute for pressure to balance. Then connect and operate the recovery system per manufacturers recommendations. When the evacuation is completed, open the balance line isolation valve and measure the pressure in the balance line.

Section 8. Sampling and Chemical Analysis Methods

8.1 The referee test methods for the various contaminants are summarized in the following paragraphs. Detailed test procedures are included in Appendix A "Test Procedures for ARI STD 700." If alternate test methods are employed, the user must be able to demonstrate that they produce results equivalent to the specified referee method.

8.2 Refrigerant Sampling.

8.2.1 *Sampling Precautions.* Special precautions should be taken to assure that representative samples are obtained for analysis. Sampling shall be done by trained laboratory personnel following accepted sampling and safety procedures.

8.2.2 *Gas Phase Sample.* A gas phase sample shall be obtained for determining the non-condensables. Since non-condensable gases, if present, will concentrate in the vapor phase of the refrigerant, care must be exercised to eliminate introduction of air during the sample transfer. Purging is not an acceptable procedure for a gas phase sample since it may introduce a foreign product. Since R11, R113 and R123 have normal boiling points at or above room temperature, noncondensable determination is not required for these refrigerants.

8.2.2.1 The sample cylinder shall be connected to an evacuated gas sampling bulb by means of a manifold. The manifold should have a valve arrangement that facilitates evacuation of all connecting tubing leading to the sampling bulb.

8.2.2.2 After the manifold has been evacuated, close the valve to the pump and open the valve on the system. Allow the pressure to equilibrate and close valves.

8.2.3 *Liquid Phase Sample.* A liquid phase sample is required for all tests listed in this standard, except the test for non-condensables.

8.2.3.1 Place an empty sample cylinder with the valve open in an oven at 230 F [110 °C] for one hour. Remove it from the oven while hot, immediately connect to an evacuation system and evacuate to less than 1mm. mercury (1000 microns). Close the valve and allow it to cool.

8.2.3.2 The valve and lines from the unit to be sampled shall be clean and dry. Connect the line to the sample cylinder loosely. Purge through the loose connection. Make the connection tight at the end of the purge period. Take the sample as a liquid by chilling the sample cylinder slightly. Accurate analysis requires that the sample container be filled to at least 60% by volume; however under no circumstances should the cylinder be filled to more than 80% by volume. This can be accomplished by weighing the empty cylinder and then the cylinder with refrigerant. When the desired amount of refrigerant has been collected, close the valve(s) and disconnect the sample cylinder immediately.

8.2.3.3 Check the sample cylinder for leaks and record the gross weight.

8.3 *Water Content.*

8.3.1. The Coulometric Karl Fischer Titration shall be the primary test method for determining the water content of refrigerants. This method is described in Appendix A. This method can be used for refrigerants that are either a liquid or a gas at room temperature, including Refrigerants 11 and 13. For all refrigerants, the sample for water analysis shall be taken from the liquid phase of the container to be tested. Proper operation of the analytical method requires special equipment and an experienced operator. The precision of the results is excellent if proper sampling and handling procedures are followed. Refrigerants containing a colored dye can be successfully analyzed for water using this method.

8.3.2 The Karl Fischer Test Method is an acceptable alternative test method for determining the water content of refrigerants. This method is described in ASTM Standard for "Water in gases Using Karl Fisher Reagent" E700-79, reapproved 1984 (American Society for Testing and Materials, Philadelphia, PA).

8.3.3 Report the moisture level in parts per million by weight if a sample is required.

8.4 *Chloride.* The refrigerant shall be tested for chlorides as an indication of the presence of hydrochloric or similar acids. The recommended procedure is intended for use with new or reclaimed refrigerants. Significant amounts of oil may interfere with the results by indicating a failure in the absence of chlorides.

8.4.1 The test method shall be that described in Appendix A "Test Procedures for ARI-700." The test will show noticeable turbidity at equivalent chloride levels of about 3 ppm by weight or higher.

8.4.2 The results of the test shall not exhibit any sign of turbidity. Report results as "pass" or "fail."

8.5 *Acidity.*

8.5.1 The acidity test uses the titration principle to detect any compound that is highly soluble in water and ionizes as an acid. The test method shall be that described in Appendix A. "Test Procedures for ARI-700." The test may not be suitable for determination of high molecular weight organic acids; however these acids will be found in the high boiling residue test outlined in Section 5.7. The test requires about a 100 to 120 gram sample and has a low detection limit of 0.1 ppm by weight as HC1.

8.6 High Boiling Residue.

8.6.1 High boiling residue will be determined by measuring the residue of a standard volume of refrigerant after evaporation. The refrigerant sample shall be evaporated at room temperature or a temperature 50 F [10°.0C], above the boiling point of the sample using a Goetz tube as specified in Appendix A "Test Procedures for ARI-700." Oils and or organic acids will be captured by this method.

8.6.2 The value for high boiling residue shall be expressed as a percentage by volume.

8.7 Particulates/Solids.

8.7.1 A measured amount of sample is evaporated from a Goetz bulb under controlled temperature conditions. The particulates/solids shall be determined by visual examination of the empty Goetz bulb after the sample has evaporated completely. Presence of dirt, rust or other particulate contamination is reported a "fail." For details of this test method, refer to Appendix B "Test Procedures for ARI-700."

8.8 Non-Condensables

8.8.1 A vapor phase sample shall be used for determination of non-condensables. Non-condensable gases consist primarily of air accumulated in the vapor phase of refrigerant containing tanks. The solubility of air in the refrigerants liquid phase is extremely low and air is not significant as a liquid phase contaminant. The presence of non-condensable gases may reflect poor quality control in transferring refrigerants to storage tanks and cylinders.

8.8.2 The test method shall be gas chromatography with a thermal conductivity detector as described in Appendix A "Test Procedures for ARI-700."

8.8.2.1 The Federal Specification for "Fluorocarbon Refrigerants," BB-F-1421B, dated March 5, 1992, section 4.4.2 (perchloroethylene method) is an acceptable alternate test method.

8.8.3 Report the level of non-condensable as percent by volume.

Section 9. Performance Calculation and Rating

9.1 The liquid refrigerant recovery rate shall be expressed in pounds per minute [kg/min] and measured by weight change at the mixing chamber (See Figure 1) divided by elapsed time to an accuracy within .02 lbs/min. [.009 kg/min]. Ratings using the Push/Pull method shall be identified "Push/Pull". Equipment may be rated by both methods.

9.2 The vapor refrigerant recovery rate shall be expressed in pounds per minute [kg/min] and measured by weight change at the mixing chamber (See Figure 1) divided by elapsed time to an accuracy within .02 lbs/min. [.009 kg/min].

9.3 The recycle rate is defined in 3.7 and expressed in pounds per minute [kg/min] of flow and shall be per ASHRAE 41.7-84 "Procedure For Fluid Measurement Of Gases" or ASHRAE 41.8-89 "Standard Method of Flow of Fluids—Liquids."

9.3.1 For equipment using multipass recycling or a separate sequence, the recycle rate shall be determined by dividing the net weight W of the refrigerant to be recycled by the actual time T required to recycle the refrigerant. Any set-up or operator interruptions shall not be included in the time T. The accuracy of the recycle rate shall be within .02 lbs/min. [.009 kg/min].

9.3.2 If no separate recycling sequence is used, the recycle rate shall be the higher of the vapor refrigerant recovery rate or the liquid refrigerant recovery rate. The recycle rate shall match a process which leads to contaminant levels in 9.6. Specifically, a recovery rate determined from bypassing a contaminant removal device cannot be used as a recycle rate when the contaminant levels in 9.6 are determined by passing the refrigerant through the containment removal device.

9.4 Refrigerant loss due to non-condensable purging shall be less than 5%. This rating shall be expressed as "passed" if less than 5%.

This calculation will be based upon net loss of non-condensables and refrigerant due to the purge divided by the initial net content. The net loss shall be determined by weighing before and after the purge, by collecting purged gases, or an equivalent method.

9.5 The final recovery vacuum shall be the mixing chamber pressure called for in 7.1.2.5 expressed in inches of mercury vacuum, [mm Hg or kP]. The accuracy of the measurement shall be within ± 1 inch [± 2.5 mm] of Hg and rounding down to the nearest whole number.

9.6 The contaminant levels remaining after testing shall be published as follows:

Moisture content, PPM by weight

Chloride ions, Pass/Fail

Acidity, PPM by weight

High boiling residue, percentage by volume

Particulate/solid, Pass/Fail

Non-condensables, % by volume

9.7 Product Literature: Except as provided under product labelling in Section 11. performance ratings per 9.1, 9.2, 9.3, and 9.5 must be grouped together and shown for all listed refrigerants (11.2) subject to limitations of 9.8. Wherever any contaminant levels per 9.6 are rated, all ratings in 9.6 must be shown for all listed refrigerants subject to limitations of 9.8. The type of equipment in 11.1 must be included with either grouping. Optional ratings in 9.8 need not be shown.

9.8 Ratings shall include all of the parameters for each designed refrigerant in 11.2 as shown in Tables 2 and 3.

TABLE 2—PERFORMANCE

Parameter/type of equipment	Recovery	Recovery/ recycle	Recycle	System dependent equipment
Liquid refrigerant recovery rate	(²)	(²)	N/A	N/A
Vapor refrigerant recovery rate	(²)	(²)	N/A	N/A

¹ Mandatory rating.

² For a recovery or recovery/recycle unit, one must rate for either liquid feed only or vapor feed only or can rate for both. If rating only the one, the other shall be indicated by "N/A."

³ For Recovery Equipment, these parameters are optional. If not rated, use N/A.

Parameter/type of equipment	Recovery	Recovery/ recycle	Recycle	System dependent equipment
Final recovery vacuum	(¹)	(¹)	N/A	(¹)
Recycle rate	N/A	(¹)	(¹)	N/A
Refrigerant loss due to non- condensable purging	(³)	(¹)	(¹)	N/A

¹ Mandatory rating.

² For a recovery or recovery/recycle unit, one must rate for either liquid feed only or vapor feed only or can rate for both. If rating only the one, the other shall be indicated by "N/A."

³ For Recovery Equipment, these parameters are optional. If not rated, use N/A.

TABLE 3—CONTAMINANTS

Contaminant/type of equipment	Recovery	Recovery/ recycle	Recycle	System dependent equipment
Moisture content	(*)	x	x	NA.
Chloride ions	(*)	x	x	NA.
Acidity	(*)	x	x	NA.
High boiling residue	(*)	x	x	NA.
Particulates	(*)	x	x	NA.
Non-condensables	(*)	x	x	NA.

* For Recovery Equipment, these parameters are optional. If not rated, use N/A.

x Mandatory rating.

Section 10. Tolerances

10.1 Any equipment tested shall produce contaminant levels not higher than the published ratings. The liquid refrigerant recovery rate, vapor refrigerant recovery rate, final recovery vacuum and recycle rate shall not be less than the published ratings.

Section 11. Product Labelling

11.1 *Type of equipment.* The type of equipment shall be as listed:

11.1.1 Recovery only

11.1.2 System Dependent Recovery

11.1.3 Recovery/Recycle

11.1.4 Recycle only

11.2 Designated refrigerants and the following as applicable for each:

11.2.1 Liquid Recovery Rate

11.2.2 Vapor Recovery Rate

11.2.3 Final Recovery Vacuum

11.2.4 Recycle Rate

11.3 The nameplate shall also conform to the labeling requirements established for certified recycling and recovery equipment established at 40 CFR 82.158(h).

Attachment to Appendix B1

Particulate Used in Standard Contaminated Refrigerant Sample.

1. Particulate Specification

- 1.1
- The particulate material pm will be a blend of 50% coarse air cleaner dust as received, and 50% retained on a 200-mesh screen. The coarse air cleaner dust is available from: AC Spark Plug Division, General Motors Corporation, Flint, Michigan.

1.2 Preparation of Particulate Materials

To prepare the blend of contaminant, first wet screen a quantity of coarse air cleaner dust on a 200-mesh screen (particle retention 74 pm). This is done by placing a portion of the dust on a 200-mesh screen and running water through the screen while stirring the dust with the fingers. The fine contaminant particles passing through the screen are discarded. The +200 mesh particles collected on the screen are removed and dried for one hour at 230 F [110 °C]. The blend of standard contaminant is prepared by mixing 50% by weight of coarse air cleaner dust as received after drying for one hour at 230 F [110 °C] with 50% by weight of the +200 mesh screened dust.

- 1.3
- The coarse air cleaner dust as received and the blend used as the standard contaminant have the following approximate particle size analysis: Wt. % in various size ranges, pm.

Size range	As received	Blend
0-5	12	6
5-10	12	6

Size range	As received	Blend
10-20	14	7
20-40	23	11
40-80	30	32
80-200	9	38

[58 FR 28712, May 14, 1993, as amended at 59 FR 42960, Aug. 19, 1994. Redesignated and amended at 68 FR 43815, July 24, 2003]

Appendix B2 to Subpart F of Part 82—Performance of Refrigerant Recovery, Recycling, and/or Reclaim Equipment

This appendix is based on the Air-Conditioning and Refrigeration Institute Standard 740-1995.

Section 1. Purpose

1.1 *Purpose.* The purpose of this standard is to establish methods of testing for rating and evaluating the performance of refrigerant recovery, and/or recycling equipment and general equipment requirements (herein referred to as “equipment”) for contaminant or purity levels, capacity, speed and purge loss to minimize emission into the atmosphere of designated refrigerants.

Section 2. Scope

2.1 *Scope.* This standard applies to equipment for recovering and/or recycling single refrigerants, azeotropics, zeotropic blends, and their normal contaminants from refrigerant systems. This standard defines the test apparatus, test gas mixtures, sampling procedures and analytical techniques that will be used to determine the performance of refrigerant recovery and/or recycling equipment (hereinafter, “equipment”).

Section 3. Definitions

3.1 *Definitions.* All terms in this appendix will follow the definitions in § 82.152 unless otherwise defined in this appendix.

3.2 *Clearing Refrigerant.* Procedures used to remove trapped refrigerant from equipment before switching from one refrigerant to another.

3.3 *High Temperature Vapor Recovery Rate.* For equipment having at least one designated refrigerant (see 11.2) with a boiling point in the range of –50 to +10 °C, the rate will be measured for R-22, or the lowest boiling point refrigerant if R-22 is not a designated refrigerant.

3.4 *Published Ratings*. A statement of the assigned values of those performance characteristics, under stated rating conditions, by which a unit may be chosen to fit its application. These values apply to all units of like nominal size and type (identification) produced by the same manufacturer. As used herein, the term “published rating” includes the rating of all performance characteristics shown on the unit or published in specifications, advertising or other literature controlled by the manufacturer, at stated rating conditions.

3.5 *Push/Pull Method*. The push/pull refrigerant recovery method is defined as the process of transferring liquid refrigerant from a refrigeration system to a receiving vessel by lowering the pressure in the vessel and raising the pressure in the system, and by connecting a separate line between the system liquid port and the receiving vessel.

3.6 *Recycle Flow Rate*. The amount of refrigerant processed divided by the time elapsed in the recycling mode. For equipment which uses a separate recycling sequence, the recycle rate does not include the recovery rate (or elapsed time). For equipment which does not use a separate recycling sequence, the recycle rate is a rate based solely on the higher of the liquid or vapor recovery rate, by which the contaminant levels were measured.

3.7 *Residual Trapped Refrigerant*. Refrigerant remaining in equipment after clearing.

3.8 *Shall, Should, Recommended or It Is Recommended* shall be interpreted as follows:

3.8.1 *Shall*. Where “shall” or “shall not” is used for a provision specified, that provision is mandatory if compliance with this appendix is claimed.

3.8.2 *Should, Recommended or It Is Recommended* is used to indicate provisions which are not mandatory but which are desirable as good practice.

3.9 *Standard Contaminated Refrigerant Sample*. A mixture of new or reclaimed refrigerant and specified quantities of identified contaminants which constitute the mixture to be processed by the equipment under test. These contaminant levels are expected only from severe service conditions.

3.10 *Trapped Refrigerant*. The amount of refrigerant remaining in the equipment after the recovery or recovery/recycling operation but before clearing.

3.11 *Vapor Recovery Rate*. The average rate that refrigerant is withdrawn from the mixing chamber between two pressures as vapor recovery rate is changing pressure and temperature starting at saturated conditions either 24 °C or at the boiling point 100 kPa (abs), whichever is higher. The final pressure condition is 10% of the initial pressure, but not lower than the equipment final recovery vacuum and not higher than 100 kPa (abs).

Section 4. General Equipment Requirements

4.1 *Equipment Information*. The equipment manufacturer shall provide operating instructions, necessary maintenance procedures and source information for replacement parts and repair.

4.2 *Filter Replacement*. The equipment shall indicate when any filter/drier(s) needs replacement. This requirement can be met by use of a moisture transducer and indicator light, by use of a sight glass/moisture indicator or by some measurement of the amount of refrigerant processed such as a flow meter or hour meter. Written instructions

such as “to change the filter every 181 kg, or every 30 days” shall not be acceptable except for equipment in large systems where the liquid recovery rate is greater than 11.3 kg/min where the filter/drier(s) would be changed for every job.

4.3 Purge of Non-Condensable. If non-condensables are purged, the equipment shall either automatically purge non-condensables or provide indicating means to guide the purge process.

4.4 Purge Loss. The total refrigerant loss due to purging non-condensables, draining oil and clearing refrigerant (see 9.5) shall be less than 3% (by weight) of total processed refrigerant.

4.5 Permeation Rate. High pressure hose assemblies $\frac{5}{8}$ in. [16 mm] nominal and smaller shall not exceed a permeation rate of 3.9 g/cm²/yr (internal surface) at a temperature of 48.8 °C. Hose assemblies that UL recognized as having passed ANSI/UL 1963 requirements shall be accepted without testing. See 7.1.4.

4.6 Clearing Trapped Refrigerant. For equipment rated for more than one refrigerant, the manufacturer shall provide a method and instructions which will accomplish connections and clearing within 15 minutes. Special equipment, other than a vacuum pump or manifold gauge set shall be furnished. The clearing procedure shall not rely upon the storage cylinder below saturated pressure conditions at ambient temperature.

4.7 Temperature. The equipment shall be evaluated at 24 °C with additional limited evaluation at 40 °C. Normal operating conditions range from 10 °C to 40 °C.

4.8 Exemptions. Equipment intended for recovery only shall be exempt from 4.2 and 4.3.

Section 5. Contaminated Refrigerants

5.1 Sample Characteristics. The standard contaminated refrigerant sample shall have the characteristics specified in Table 1, except as provided in 5.2.

5.2 Recovery-Only Testing. Recovery equipment not rated for any specific contaminant shall be tested with new or reclaimed refrigerant.

Section 6. Test Apparatus

6.1 General Recommendations. The recommended test apparatus is described in the following paragraphs. If alternate test apparatus are employed, the user shall be able to demonstrate that they produce results equivalent to the specified referee apparatus.

6.2 Self-Contained Equipment Test Apparatus. The apparatus, shown in Figure 1, shall consist of:

6.2.1 Mixing Chamber. A mixing chamber consisting of a tank with a conical-shaped bottom, a bottom port and piping for delivering refrigerant to the equipment, various ports and valves for adding refrigerant to the chamber and stirring means for mixing.

6.2.2 *Filling Storage Cylinder.* The storage cylinder to be filled by the refrigerant transferred shall be cleaned and at the pressure of the recovered refrigerant at the beginning of the test. It will not be filled over 80%, by volume.

6.2.3 *Vapor Feed.* Vapor refrigerant feed consisting of evaporator, control valves and piping to create a 3.0 °C superheat condition at an evaporating temperature of 21 °C $\pm$ 2K.

6.2.4 *Alternative Vapor Feed.* An alternative method for vapor feed shall be to pass the refrigerant through a boiler and then through an automatic pressure regulating valve set at different saturation pressures, moving from saturated pressure at 24 °C to final pressure of recovery.

6.2.5 *Liquid Feed.* Liquid refrigerant feed consisting of control valves, sampling port and piping.

6.2.6 *Instrumentation.* Instrumentation capable of measuring weight, temperature, pressure and refrigerant loss, as required.

TABLE 1—STANDARD CONTAMINATED REFRIGERANT SAMPLES

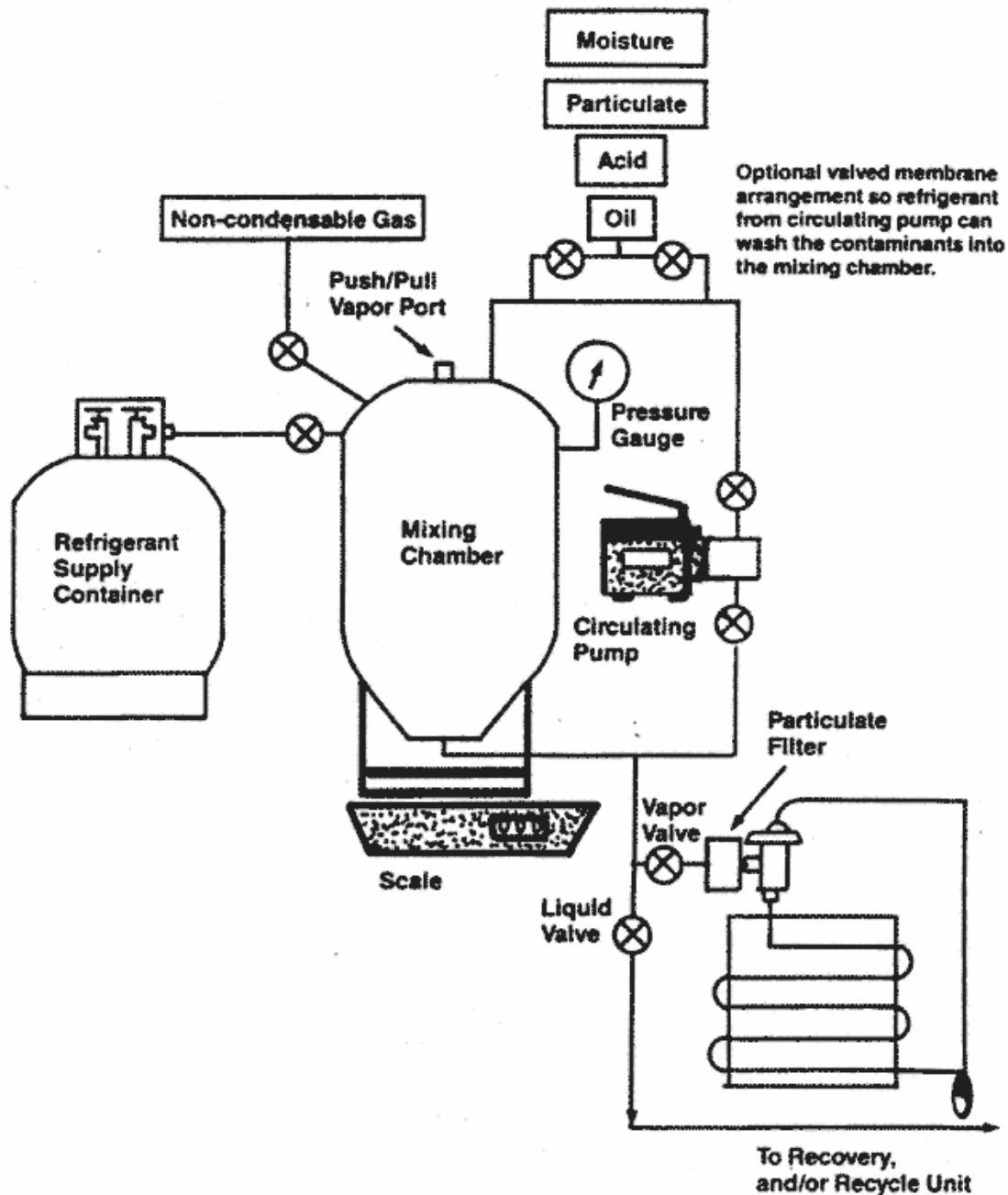
	R11	R12	R13	R22	R113	R114	R123	R134a	R500	R502	R503
Moisture Content: ppm by Weight of Pure refrigerant	100	80	30	200	100	85	200	200	200	200	30
Particulate Content: ppm by Weight of Pure Refrigerant Characterized by ¹	80	80	NA	80	80	80	80	80	80	80	NA
Acid Content: ppm by Weight of Pure Refrigerant—(mg KOH per kg Refrigerant) Characterized by ²	500	100	NA	500	400	200	500	100	100	100	NA
Mineral Oil Content:											
% by Weight of Pure Refrigerant	20	5	NA	5	20	20	20	5	5	5	NA
Viscosity (SUS)	300	150		300	300	300	300	150 ³	150	150	
Non-Condensable Gases (Air Content): % by Volume	NA	3	3	3	NA	3	NA	3	3	3	3

¹ Particulate content shall consist of inert materials and shall comply with particulate requirements in appendix B.

² Acid consists of 60% oleic acid and 40% hydrochloric acid on a total number basis.

³ Synthetic ester-based oil.

Figure 1. Test Apparatus for
Self-Contained Equipment



6.3 *Size.* The size of the mixing chamber shall be a minimum of .09 m³. The bottom port and the refrigerant feed shall depend on the size of the equipment. Typically, the mixing valves and piping shall be 9.5 mm. For large equipment to be used on chillers, the minimum inside diameter of ports, valves and pipings shall be the smaller of the manufacturer's recommendation or 37 mm.

6.4 *System Dependent Equipment Test Apparatus.* This test apparatus is to be used for final recovery vacuum rating of all system dependent equipment.

6.4.1 *Test Setup.* The test apparatus shown in Figure 2 consists of a complete refrigeration system. The manufacturer shall identify the refrigerants to be tested. The test apparatus can be modified to facilitate operation or testing of the system dependent equipment if the modifications to the apparatus are specifically described within the manufacturer's literature. (See Figure 2.) A 6.3 mm balance line shall be connected across the test apparatus between the high and low-pressure sides, with an isolation valve located at the connection to the compressor high side. A 6.3 mm access port with a valve core shall be located in the balance line for the purpose of measuring final recovery vacuum at the conclusion of the test.

Section 7. Performance Testing

7.1 *General Testing.*

7.1.1 *Temperatures.* Testing shall be conducted at an ambient temperature of 24 °C ±1K except high temperature vapor recovery shall be at 40 °C ±1K. The evaporator conditions of 6.2.3 shall be maintained as long as liquid refrigerant remains in the mixing chamber.

7.1.2 *Refrigerants.* The equipment shall be tested for all designated refrigerants (see 11.2). All tests in Section 7 shall be completed for each refrigerant before starting tests with the next refrigerant.

7.1.3 *Selected Tests.* Tests shall be as appropriate for the equipment type and ratings parameters selected (see 9.9, 11.1 and 11.2).

7.1.4 *Hose Assemblies.* For the purpose of limiting refrigerant emissions to the atmosphere, hose assemblies shall be tested for permeation according to ANSI/UL Standard 1963, Section 40.10.

7.2 *Equipment Preparation and Operation.* The equipment shall be prepared and operated per the operating instructions.

7.3 *Test Batch.* The test batch consisting of refrigerant sample (see Section 5) of the test refrigerant shall be prepared and thoroughly mixed. Continued mixing or stirring shall be required during the test while liquid refrigerant remains in the mixing chamber. The mixing chamber shall be filled to 80% level by volume.

7.3.1 *Control Test Batch.* Prior to starting the test for the first batch for each refrigerant, a liquid sample will be drawn from the mixing chamber and analyzed per Section 8 to assure that contaminant levels match Table 1 within ±10 ppm for moisture, ±20 ppm for particulate, ±20 ppm for oleic acid and ±0.5% for oil.

7.4 *Recovery Tests (Recovery and Recovery/Recycle Equipment).*

7.4.1 *Determining Recovery Rates.* The liquid and vapor refrigerant recovery rates shall be measured during the first test batch for each refrigerant (see 9.1, 9.2 and 9.4). Equipment preparation and recovery cylinder changeover shall not be included in elapsed time measurements for determining vapor recovery rate and liquid refrigerant recovery rate. Operations such as subcooling the recovery cylinder shall be included. Recovery cylinder shall be the same size as normally furnished or specified in the instructions by the equipment manufacturer. Oversized tanks shall not be permitted.

7.4.1.1 *Liquid Refrigerant Recovery Rate.* If elected, the recovery rate using the liquid refrigerant feed means (see 6.2.5) shall be determined. After the equipment reaches stabilized conditions of condensing temperature and/or recovery cylinder pressure, the recovery process shall be stopped and an initial weight shall be taken of the mixing chamber (see 9.2). The recovery process shall be continued for a period of time sufficient to achieve the accuracy in 9.4. The recovery process shall be stopped and a final weight shall be taken of the mixing chamber.

**Configuration of standard air conditioning or
refrigeration system for use as a test apparatus**

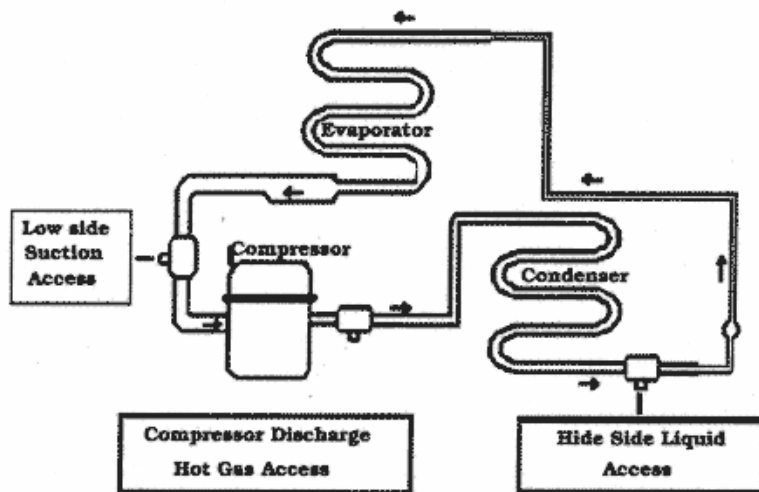


Figure 2. System Dependent Equipment Test Apparatus

7.4.1.2 Vapor Refrigerant Recovery Rate. If elected, the average vapor flow rate shall be measured to accuracy requirements in clause 9.4 under conditions with no liquid refrigerant in the mixing chamber. The liquid recovery feed means shall be used. At initial conditions of saturated vapor at the higher of 24 °C or the boiling temperature (100 kPa absolute pressure), the weight of the mixing chamber and the pressure shall be recorded. At final conditions representing pressure in the mixing chamber of 10% of the initial condition, but not less than the final recovery vacuum (see 9.6) nor more than 100 kPa, measure the weight of the mixing chamber and the elapsed time.

7.4.1.3 High Temperature Vapor Recovery Rate. Applicable for equipment having at least one designated refrigerant (see 11.2) with a boiling point between -50 °C and +10 °C. Measure the rate for R-22, or the refrigerant with the lowest boiling point if R-22 is not a designated refrigerant. Repeat the test in 7.4.1.2 at saturated conditions at 40 °C and continue to operate equipment to assure it will achieve the final recovery vacuum (see 7.4.3).

7.4.2 Recovery Operation. This test is for determining the final recovery vacuum and the ability to remove contaminants as appropriate. If equipment is rated for liquid recovery (see 7.4.1.3), liquid recovery feed means described in 6.2.5 shall be used. If not, vapor recovery means described in 6.2.3 or 6.2.4 shall be used. Continue recovery operation until all liquid is removed from the test apparatus and vapor is removed to the point where equipment shuts down by automatic means or is manually shut off per operating instructions.

7.4.2.1 Oil Draining. Capture oil from the equipment at intervals as required in the instructions. Record the weight of the container. Completely remove refrigerant from oil by evacuation or other appropriate means. The weight difference shall be used in 9.5.2.

7.4.3 Final Recovery Vacuum. At the end of the first test batch for each refrigerant, the liquid valve and vapor valve of the apparatus shall be closed. After waiting 1 minute, the mixing chamber pressure shall be recorded (see 9.6).

7.4.4 Residual Refrigerant. This test will measure the mass of remaining refrigerant in the equipment after clearing and therefore the potential for mixing refrigerants (see 4.6).

7.4.4.1 Initial Conditions. At the end of the last test for each batch for each refrigerant, the equipment shall be disconnected from the test apparatus (Figure 1). Recycle per 7.5, if appropriate. Perform refrigerant clearing operations as called for in the instruction manual. Capture and record the weight of any refrigerant which would have been emitted to the atmosphere during the clearing process for use in 9.5. If two loops are used for recycling, trapped refrigerant shall be measured for both.

7.4.4.2 Residual Trapped Refrigerant. Evacuate an empty test cylinder to 1.0 kPa absolute. Record the empty weight of the test cylinder. Open all valves to the equipment so as to provide access to all trapped refrigerant. Connect the equipment to the test cylinder and operate valves to recover the residual refrigerant. Record the weight of the test cylinder using a recovery cylinder pressure no less than specified in 6.2.2. Place the test cylinder in liquid nitrogen for a period of 30 minutes or until a vacuum of 1000 microns is reached, whichever occurs first.

7.5 Recycling Tests (Recovery/Recycle Equipment).

7.5.1 Recycling Operation. As each recovery cylinder is filled in 7.4.2, recycle according to operating instructions. There will not necessarily be a separate recycling sequence. Note non-condensable purge measurement in 9.5.

7.5.1.1 Recycle Flow Rate. While recycling the first recovery cylinder for each refrigerant, determine the recycling flow rate by appropriate means (see 9.3) to achieve the accuracy required in 9.4.

7.5.2 Non-Condensable Sample. After completing 7.4.3, prepare a second test batch (7.3). Recover per 7.4.2 until the current recovery cylinder is filled to 80% level by volume. Recycle per 7.5.1. Mark this cylinder and set aside for taking the vapor sample. For equipment having both an internal tank of at least 3 kg refrigerant capacity and an external recovery cylinder, two recovery cylinders shall be marked and set aside. The first is the cylinder described above. The second cylinder is the final recovery cylinder after filling it to 80% level by volume and recycling.

7.5.3 Liquid Sample for Analysis. Repeat steps 7.3, 7.4.2 and 7.5.1 with further test batches until indication means in 4.2 show the filter/drier(s) need replacing.

7.5.3.1 Multiple Pass. For equipment with a separate recycling circuit (multiple pass), set aside the current cylinder and draw the liquid sample (see 7.4) from the previous cylinder.

7.5.3.2 Single Pass. For equipment with the single pass recycling circuit, draw the liquid sample (see 7.4) from the current cylinder.

7.6 Measuring Refrigerant Loss. Refrigerant loss due to non-condensables shall be determined by appropriate means (see 9.5.1). The loss could occur in 7.4.1, 7.4.2 and 7.5.1.

Section 8. Sampling and Chemical Analysis Methods

8.1 Chemical Analysis. Chemical analysis methods shall be specified in appropriate standards such as ARI 700-95 and Appendix C to ARI Standard 700-95.

8.2 Refrigerant Sampling.

8.2.1 Water Content. The water content in refrigerant shall be measured by the Karl Fischer Analytical Method or by the Karl Fischer Coulometric techniques. Report the moisture level in parts per million by weight.

8.2.2 Chloride Ions. Chloride ions shall be measured by turbidity tests. At this time, quantitative results have not been defined. Report chloride content as “pass” or “fail.” In the future, when quantitative results are possible, report chloride content as parts per million by weight.

8.2.3 Acidity. The acidity test uses the titration principle. Report the acidity in parts per million by weight (mg KOH/kg) of sample.

8.2.4 High Boiling Residue. High boiling residues shall use measurement of the volume of residue after evaporating a standard volume of refrigerant. Using weight measurement and converting to volumetric units is acceptable. Report high boiling residues as percent by volume.

8.2.5 Particulates/Solids. The particulates/solids measurement employs visual examination. Report results as “pass” or “fail.”

8.2.6 Non-condensables. The level of contamination by non-condensable gases in the base refrigerant being recycled shall be determined by gas chromatography. Report results as percent by volume.

Section 9. Performance Calculation and Rating

9.1 *Vapor Refrigerant Recovery Rate*. This rate shall be measured by weight change of the mixing chamber divided by elapsed time (see 7.4.1.2). The units shall be kg/min and the accuracy shall be per 9.4.

9.1.1 *High Temperature Vapor Recovery Rate*.

9.2 *Liquid Refrigerant Recovery Rate*. This rate shall be measured by weight change of the mixing chamber divided by elapsed time (see 7.4.1.3). The units shall be kg/min and the accuracy shall be per 9.4.

9.3 *Recycle Flow Rate*. The recycle flow rate shall be as defined in 3.10, expressed in kg/min, and the accuracy shall be per 9.4.

9.3.1 For equipment using multi-pass recycling or a separate sequence, the recycle rate shall be determined by dividing the net weight *W* of the refrigerant to be recycled by the actual time *T* required to recycle. Any set-up or operator interruptions shall not be included in the time *T*.

9.3.2 If no separate recycling sequence is used, the recycle rate shall be the higher of the vapor refrigerant recovery rate or the liquid refrigerant recovery rate. The recycle rate shall match a process which leads to contaminant levels in 9.9. Specifically, a recovery rate determined from bypassing a contaminant removal device cannot be used as a recycle rate when the contaminant levels in 9.9 are determined by passing the refrigerant through the contaminant removal device.

9.4 *Accuracy of Flow Rates*. The accuracy of test measurements in 9.1, 9.2 and 9.3 shall be ± 0.08 kg/min or flow rates up to .42 kg/min and $\pm 2.0\%$ for flow rates larger than .42 kg/min. Ratings shall be expressed to the nearest .02 kg/min.

9.5 *Refrigerant Loss*. This calculation will be based upon the net loss of refrigerant which would have been eliminated in the non-condensable purge process (see 7.5.1), the oil draining process (see 7.4.2.1) and the refrigerant clearing process (see 7.4.4.1), all divided by the net refrigerant content of the test batches. The refrigerant loss shall not exceed 3% by weight.

9.5.1 *Non-Condensable Purge*. Evacuate an empty container to 2 kPa absolute. Record the empty weight of the container. Place the container in a dry ice bath. Connect the equipment purge connection to the container and operate purge according to operating instructions so as to capture the non-condensables and lost refrigerant. Weigh the cylinder after the recycling is complete. Equivalent means are permissible.

9.5.2 *Oil Draining*. Refrigerant removed from the oil after draining shall be collected and measured in accordance with 7.4.2.1.

9.5.3 *Clearing Unit*. Refrigerant captured during the clearing process shall be measured in accordance with 7.4.4.1.

9.6 *Final Recovery Vacuum*. The final recovery vacuum shall be the mixing chamber pressure in 7.4.3 expressed in kPa. The accuracy of the measurement shall be within 0.33 kPa.

9.7 *Residual Trapped Refrigerant*. The amount of residual trapped refrigerant shall be the final weight minus the initial weight of the test cylinder in 7.4.4.2, expressed in kg. The accuracy shall be ± 0.02 kg and reported to the nearest 0.05 kg.

9.8 *Quantity Recycled*. The amount of refrigerant processed before changing filters (see 7.5.3) shall be expressed in kg to an accuracy of $\pm 1\%$.

9.9 *Contaminant Levels*. The contaminant levels remaining after testing shall be published as follows:

Moisture content, ppm by weight

Chloride ions, pass/fail

Acidity, ppm by weight

High boiling residue, % (by volume)

Particulates-solid, pass/fail (visual examination)

Non-condensables, % (by volume)

9.10 *Minimum Data Requirements for Published Ratings*. Published ratings shall include all of the parameters as shown in Tables 2 and 3 for each refrigerant designated by the manufacturer.

Section 10. Tolerances

10.1 *Tolerances*. Performance related parameters shall not be less favorable than the published ratings.

Section 11. Marking and Nameplate Data

11.1 *Marking and Nameplate Data*. The nameplate shall display the manufacturer's name, model designation, type of equipment, designated refrigerants, capacities and electrical characteristics where applicable. The nameplate shall also conform to the labeling requirements established for certified recycling and recovery equipment established at 40 CFR 82.158(h).

Recommended nameplate voltages for 60 Hertz systems shall include one or more of the utilization voltages shown in Table 1 of ARI Standard 110-90. Recommended nameplate voltages for 50 Hertz systems shall include one or more of the utilization voltages shown in Table 1 of IEC Standard Publication 38, IEC Standard Voltages.

11.2 *Data for Designated Refrigerants*. For each refrigerant designated, the manufacturer shall include all the following that are applicable per Table 2:

- a. Liquid Recovery Rate
- b. Vapor Recovery Rate
- c. High Temperature Vapor Recovery Rate
- d. Final Recovery Vacuum
- e. Recycle Flow Rate
- f. Residual Trapped Refrigerant

g. Quantity Recycled

TABLE 2—PERFORMANCE

Parameter/Type of equipment	Recovery	Recovery/Recycle	Recycle	System dependent equipment
Liquid Refrigerant Recovery Rate	(¹)	(¹)	N/A	N/A
Vapor Refrigerant Recovery Rate	(¹)	(¹)	N/A	N/A
High Temp. Vapor Recovery Rate	(¹)	(¹)	N/A	N/A
Final Recovery Vacuum	(^x)	(^x)	N/A	(^x)
Recycle Flow Rate	N/A	(^x)	(^x)	N/A
Refrigerant Loss	(³)	(^x)	(^x)	(³)
Residual Trapped Refrigerant	(²)	(²)	(²)	(²)
Quantity Recycled	N/A	(^x)	(^x)	N/A

^x Mandatory rating.

¹ For a recovery or recovery/recycle unit, one must rate either liquid refrigerant recovery rate or vapor refrigerant recovery rate or one can rate for both. If rating only the one, the other shall be indicated by N/A, "not applicable."

² Mandatory rating for equipment tested for multiple refrigerants.

³ Mandatory rating if multiple refrigerants, oil separation or non-condensable purge are rated.

Note: For recovery equipment, these parameters are optional. If not rated use N/A, "not applicable."

TABLE 3—CONTAMINANTS

Contaminant/Type of equipment	Recovery	Recovery/Recycle	Recycle	System dependent equipment
Moisture Content	(*)	(^x)	(^x)	N/A
Chloride Ions	(*)	(^x)	(^x)	N/A
Acidity	(*)	(^x)	(^x)	N/A
High Boiling Residue	(*)	(^x)	(^x)	N/A
Particulates	(*)	(^x)	(^x)	N/A

* For recovery equipment, these parameters are optional. If not rated, use N/A, "not applicable."

^x Mandatory rating.

Contaminant/Type of equipment	Recovery	Recovery/Recycle	Recycle	System dependent equipment
Non-Condensables	(*)	(^x)	(^x)	N/A

* For recovery equipment, these parameters are optional. If not rated, use N/A, "not applicable."

^x Mandatory rating.

Attachment 1 to Appendix B2 to Subpart F of Part 82—References

Listed here are all standards, handbooks, and other publications essential to the formation and implementation of the standard. All references in this appendix are considered as part of this standard.

- ANSI/UL Standard 1963, *Refrigerant Recovery/Recycling Equipment*, First Edition, 1989, American National Standards Institute/Underwriters Laboratories, Inc.
- ARI Standard 110-90, *Air-Conditioning and Refrigerating Equipment Nameplate Voltages*, Air-Conditioning and Refrigeration Institute
- ARI Standard 700-95, *Specifications for Fluorocarbon and Other Refrigerants*, Air-Conditioning and Refrigeration Institute
- ASHRAE Terminology of Heating, Ventilation, Air Conditioning, Refrigeration, & Refrigeration, American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc., 1991
- IEC Standard Publication 38, *IEC Standard Voltages*, International Electrotechnical Commission, 1983

Attachment 2 to Appendix B2 to Subpart F of Part 82-Particulate Used in Standard Contaminated Refrigerant Sample

1. Particulate Specification

B1.1 The particulate material (pm) will be a blend of 50% coarse air cleaner dust as received, and 50% retained on a 200-mesh screen. The coarse air cleaner dust is available from: AC Spark Plug Division; General Motors Corporation; Flint, Michigan.

B1.2 Preparation of Particulate Materials.

To prepare the blend of contaminant, first wet screen a quantity of coarse air cleaner dust on a 200-mesh screen (particle retention 74 pm). This is done by placing a portion of the dust on a 200-mesh screen and running water through the screen while stirring the dust with the fingers. The fine contaminant particles passing through the

screen are discarded. The +200-mesh particles collected on the screen are removed and dried for one hour at 110 °C. The blend of standard contaminant is prepared by mixing 50% by weight of coarse air cleaner dust as received (after drying for one hour at 110 °C) with 50% by weight of the +200 mesh screened dust.

B1.3 Particle Size Analysis.

The coarse air cleaner dust as received and the blend used as the standard contaminant have the following approximate particle size analysis:

Wt. % in various size ranges, pm.

Size range	As received	Blend
0-5	12	6
5-10	12	6
10-20	14	7
20-40	23	11
40-80	30	32
80-200	9	38

[68 FR 43815, July 24, 2003; 68 FR 54678, Sept. 18, 2003]

Appendix B3 to Subpart F of Part 82—Performance of Refrigerant Recovery, Recycling, and/or Reclaim Equipment

This appendix is based on the Air-Conditioning, Heating, and Refrigeration Institute Standard 740-2016, *Performance Rating of Refrigerant Recovery Equipment and Recovery/Recycling Equipment*.

Section 1. Purpose

1.1 The purpose of this standard is to establish methods of testing for rating and evaluating the performance of refrigerant recovery, and/or recycling equipment and general equipment requirements (herein referred to as “equipment”) for contaminant or purity levels, capacity, speed and purge loss to minimize emission into the atmosphere of designated refrigerants.

Section 2. Scope

2.1 This standard applies to equipment for recovering and/or recycling single refrigerants, azeotropes, zeotropic blends, and their normal contaminants from refrigerant systems. This standard defines the test apparatus, test gas mixtures, sampling procedures and analytical techniques that will be used to determine the performance of refrigerant recovery and/or recycling equipment (hereinafter, “equipment”). Appendix B4 of this subpart establishes standards for recovery/recycling equipment used with flammable refrigerants.

Section 3. Definitions

3.1 *Definitions.* All terms in this appendix will follow the definitions in § 82.152 unless otherwise defined in this appendix.

3.2 *Clearing Refrigerant.* Procedures used to remove trapped refrigerant(s) from equipment before switching from one refrigerant to another.

3.3 *High Temperature Vapor Recovery Rate.* For equipment having at least one designated refrigerant (see Section 11.2 of this appendix) with a boiling point in the range of -50 to +10 °C, the rate will be measured for R-22, or the lowest boiling point refrigerant if R-22 is not a designated refrigerant.

3.4 *Published Ratings.* A statement of the assigned values of those performance characteristics, under stated rating conditions, by which a unit may be chosen to fit its application. These values apply to all units of like nominal size and type (identification) produced by the same manufacturer. As used herein, the term “published rating” includes the rating of all performance characteristics shown on the unit or published in specifications, advertising, or other literature controlled by the manufacturer, at stated rating conditions.

3.5 *Push/Pull Liquid Recovery.* The push/pull refrigerant recovery method is defined as the process of transferring liquid refrigerant from a refrigeration system to a receiving vessel by lowering the pressure in the vessel and raising the pressure in the system, and by connecting a separate line between the system liquid port and the receiving vessel.

3.6 *Recycle Flow Rate.* The amount of refrigerant processed divided by the time elapsed in the recycling mode. For equipment which uses a separate recycling sequence, the recycle rate does not include the recovery rate (or elapsed time). For equipment which does not use a separate recycling sequence, the recycle rate is a rate based solely on the higher of the liquid or vapor recovery rate, by which the contaminant levels were measured.

3.7 *Residual Trapped Refrigerant.* Refrigerant remaining in equipment after clearing refrigerant.

3.8 *Shall, Should, Recommended or It Is Recommended* shall be interpreted as follows:

3.8.1 *Shall.* Where “shall” or “shall not” is used for a provision specified, that provision is mandatory if compliance with this appendix is claimed.

3.8.2 *Should, Recommended or It Is Recommended* is used to indicate provisions which are not mandatory but which are desirable as good practice.

3.9 *Standard Contaminated Refrigerant Sample.* A mixture of new or reclaimed refrigerant and specified quantities of identified contaminants which constitute the mixture to be processed by the equipment under test. These contaminant levels are expected only from severe service conditions.

3.10 *Trapped Refrigerant.* The amount of refrigerant remaining in the equipment after the recovery or recovery/recycling operation but before clearing refrigerant.

3.11 *Vapor Recovery Rate*. The average rate that refrigerant is withdrawn from the mixing chamber between two pressures as vapor recovery rate is changing depending on the pressure. The initial condition is vapor only at saturation pressure and temperature at either 24 °C or at the boiling point at 100 kPa, whichever is higher. The final pressure condition is 10 percent of the initial pressure, but not lower than the equipment final recovery vacuum and not higher than 100 kPa.

Section 4. General Equipment Requirements

4.1 *Equipment Information*. The equipment manufacturer shall provide operating instructions, necessary maintenance procedures, and source information for replacement parts and repair.

4.2 *Filter Replacement*. The equipment shall indicate when any filter/drier(s) needs replacement. This requirement can be met by use of a moisture transducer and indicator light, by use of a sight glass/moisture indicator, or by some measurement of the amount of refrigerant processed such as a flow meter or hour meter. The equipment manufacturer must provide maximum quantity recycled or filter change interval in its written instructions.

4.3 *Purge of Non-Condensable*. If non-condensables are purged, the equipment shall either automatically purge non-condensables or provide an indicating means to guide the purge process. Recycling equipment must provide purge means.

4.4 *Purge Loss*. The total refrigerant loss due to purging non-condensables, draining oil, and clearing refrigerant (see Section 9.5) shall be less than 3 percent (by weight) of total processed refrigerant.

4.5 *Permeation Rate*. High pressure hose assemblies $\frac{5}{8}$ in. (16 mm) nominal and smaller shall not exceed a permeation rate of 3.9 g/cm²/yr (internal surface) at a temperature of 48.8 °C. Hose assemblies that UL recognized as having passed UL 1963, 2011 requirements shall be accepted without testing. See Section 7.1.4 of this appendix.

4.6 *Clearing Trapped Refrigerant*. For equipment rated for more than one refrigerant, the manufacturer shall provide a method and instructions which will accomplish connections and clearing within 15 minutes. Special equipment, other than a vacuum pump or manifold gauge set, shall be furnished. The clearing procedure shall not rely upon the storage cylinder below saturated pressure conditions at ambient temperature.

4.7 *Temperature*. The equipment shall be evaluated at 24 °C with additional limited evaluation at 40 °C. Normal operating conditions range from 10 °C to 40 °C.

4.8 *Exemptions*. Equipment intended for recovery only shall be exempt from Sections 4.2 and 4.3.

Section 5. Contaminated Refrigerants

5.1 *Sample Characteristics*. The standard contaminated refrigerant sample shall have the characteristics specified in Table 1, except as provided in Section 5.2 of this appendix. Testing shall be conducted at an ambient temperature of 24 °C ± 1 °C except high temperature vapor recovery shall be 40 °C ± 1 °C.

5.2 *Recovery-only Testing*. Recovery equipment not rated for removal of contaminants shall be tested with new or reclaimed refrigerant.

Contaminated Refrigerant Samples

R-10	R-12	R-13	R-22	R-23	R-113	R-114	R-123	R-124	R-134a	R-500	R-502	R-503	R-401A	R-401B	R-402A
100	80	30	200	30	100	85	200	200	200	200	200	30	200	200	200
80	80	N/A	80	N/A	80	80	80	80	80	80	80	N/A	80	80	80
100	200	N/A	100	N/A	100	100	100	100	100	200	100	N/A	100	100	100
20	5	N/A	5	N/A	20	20	20	5	5	5	5	N/A	5	5	5
300/MO	150/MO	N/A	300/MO	N/A	300/MO	300/MO	300/MO	150/MO	150/MO	150/MO	150/MO	N/A	150/AB	150/AB	150/AB
N/A	3	3	3	3	N/A	3	N/A	3	3	3	3	3	3	3	3

Standard Contaminated Refrigerant Samples

R-402A	R-404A	R-406A	R-407A	R-407B	R-407C	R-407D	R-408A	R-409A	R-410A	R-410B	R-411A	R-411B	R-417C	R-419B	R-422E	R-445A	R-507	R-508A	R-508B
200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	20	20
80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	NA	NA
100	100	200	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	NA	NA
5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	NA	NA
150/A	150/P	150/A	150/P	150/P	150/P	150/P	150/M	150/M	150/P	150/P	150/M	150/M	150/P	150/P	150/P	150/P	150/P	NA	NA
B	OE	B	OE	OE	OE	OE	O	O	OE	OE	O	O	OE	OE	OE	OE	OE	NA	NA
3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

Consist of inert materials and shall comply with particulate requirements in Appendix B.

Acid and 40% hydrochloric acid on a total number basis.

Alkylbenzene, MO = Mineral Oil.

Section 6. Test Apparatus

6.1 *General Recommendations.* The recommended test apparatus is described in the following paragraphs. If alternate test apparatus are employed, the user shall be able to demonstrate that they produce results equivalent to the specified reference apparatus.

6.2 *Self-Contained Equipment Test Apparatus.* The apparatus, shown in Figure 1, shall consist of:

6.2.1 *Mixing Chamber.* A mixing chamber consisting of a tank with a conical-shaped bottom, a bottom port and piping for delivering refrigerant to the equipment, various ports and valves for adding refrigerant to the chamber, and stirring means for mixing.

6.2.2 *Filling Storage Cylinder.* The storage cylinder to be filled by the refrigerant transferred shall be cleaned and at the pressure of the recovered refrigerant at the beginning of the test. It will not be filled over 80 percent, by volume.

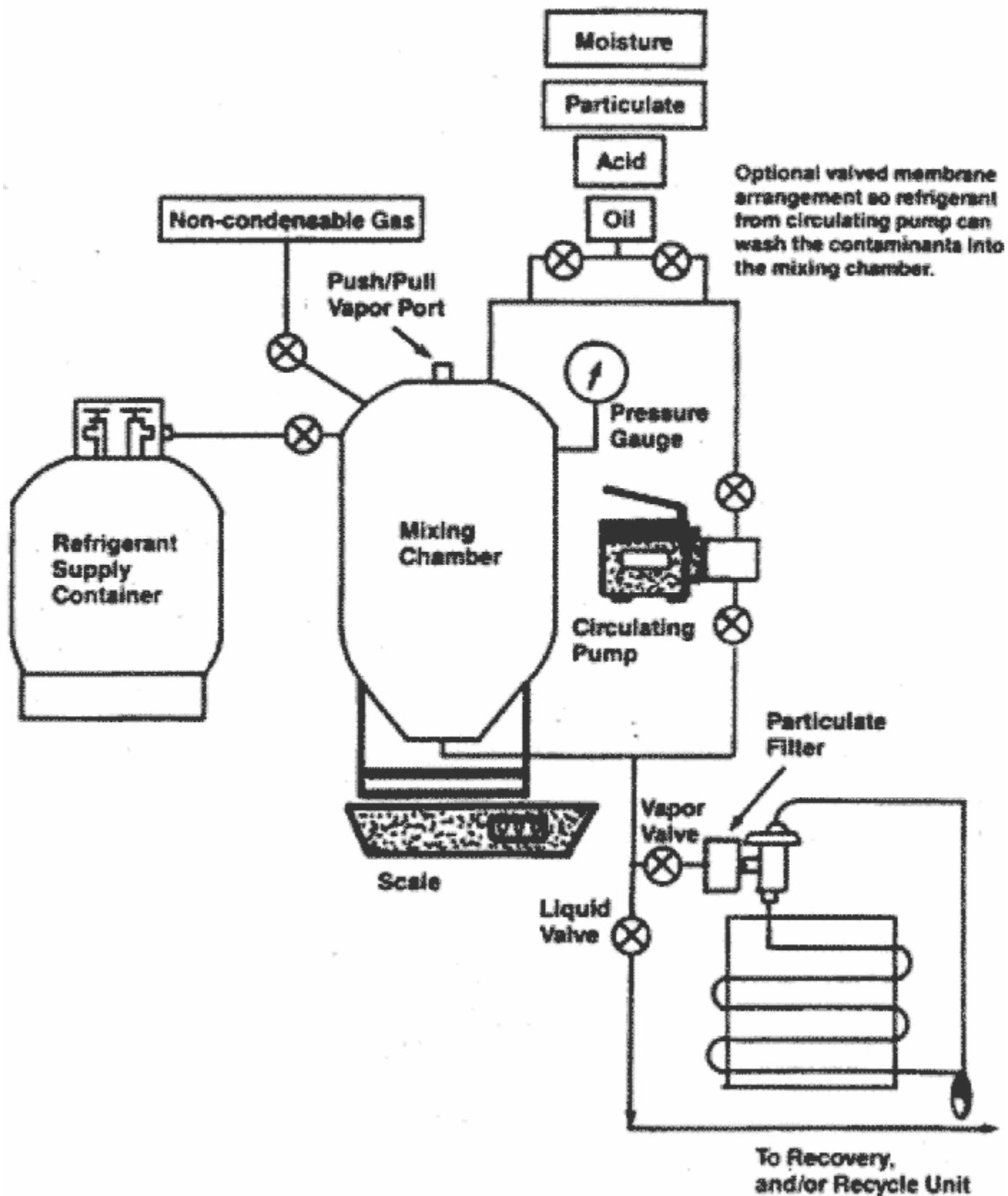
6.2.3 *Vapor Feed.* Vapor refrigerant feed consisting of evaporator, control valves and piping to create a 3.0 °C superheat condition at an evaporating temperature of 21 °C ± 2 °C.

6.2.4 *Alternative Vapor Feed.* An alternative method for vapor feed shall be to pass the refrigerant through a boiler and then through an automatic pressure regulating valve set at different saturation pressures, moving from saturated pressure at 24 °C to final pressure of recovery.

6.2.5 *Liquid Feed.* Liquid refrigerant feed consisting of control valves, sampling port, and piping.

6.2.6 *Instrumentation.* Instrumentation capable of measuring weight, temperature, pressure, and refrigerant loss, as required.

Figure 1. Test Apparatus for
Self-Contained Equipment



6.3 Size. The size of the mixing chamber and filling storage cylinder used during testing shall correspond to the size of the equipment being tested per Section 6.3.1 or 6.3.2:

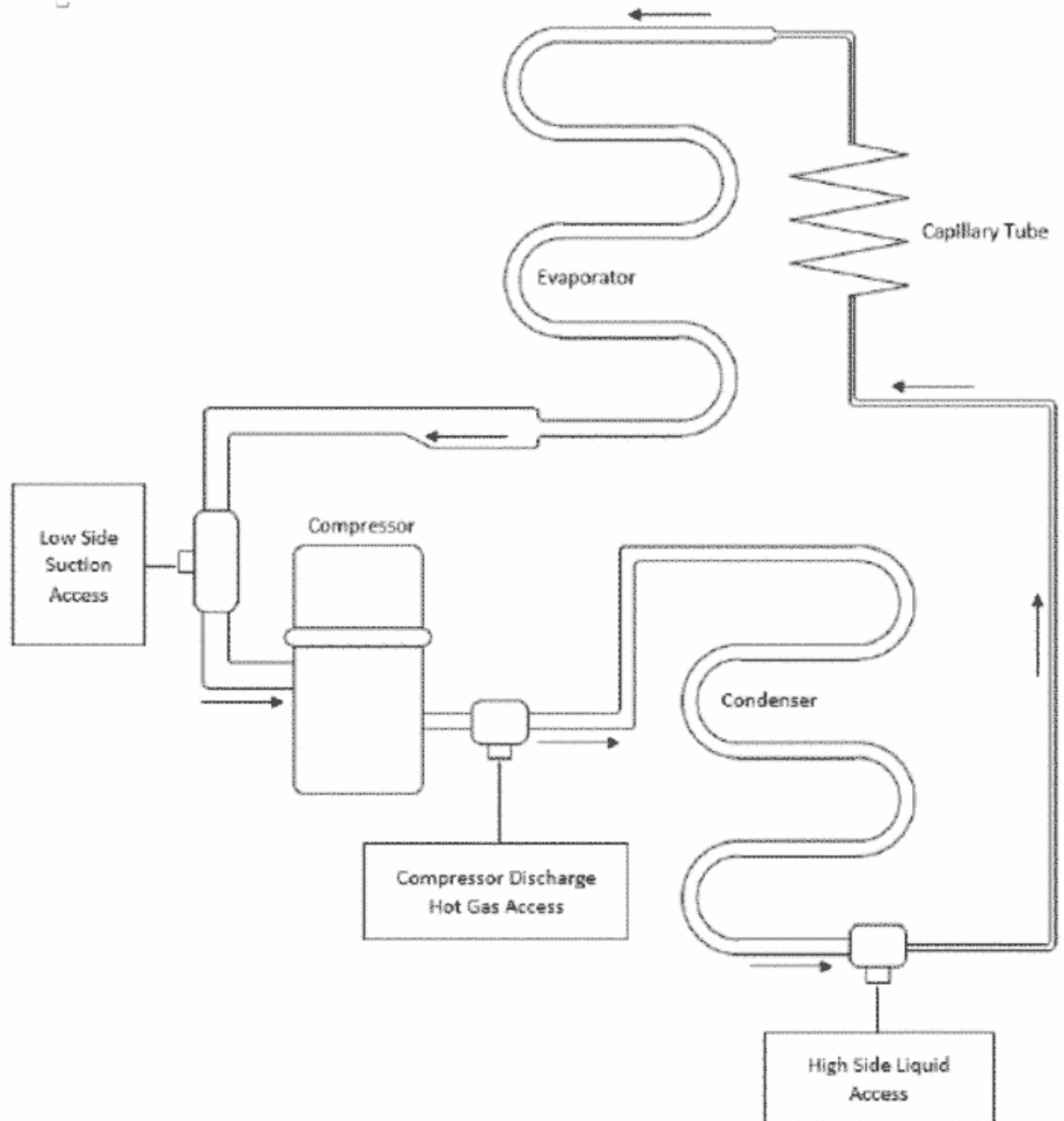
6.3.1 For equipment utilizing nominal $\frac{1}{4}$ " or $\frac{3}{8}$ " flare ports and hoses, the mixing chamber shall be 0.09 m³ and all ports, valves, mixing valves, and piping shall be $\frac{1}{2}$ " or larger, reduced down to the port size of the equipment by fittings at the connection ports of the mixing chamber. The filling storage cylinder used during testing shall be a nominal 50-pound water capacity DOT 4Bx cylinder with $\frac{1}{4}$ " flare liquid and vapor ports.

6.3.2 For equipment utilizing $\frac{1}{2}$ " or larger flare ports and hoses, the mixing chamber shall be 0.45 m³ (or nominal 1000-pound water capacity DOT 4Bx cylinder) and all ports, valves, mixing valves, and piping shall be $1\frac{1}{2}$ " or larger, reduced down to the port size of the equipment by fittings at the connection ports of the mixing chamber. The filling storage cylinder used during testing shall be a nominal 1000-pound water capacity DOT 4Bx cylinder with liquid and vapor ports, valves and piping sized $\frac{3}{4}$ " NPT and reduced or increased to the port size of the equipment by fittings at the connection ports of the filling storage cylinder.

6.4 *System Dependent Equipment Test Apparatus*. This test apparatus is to be used for final recovery vacuum rating of all system dependent equipment.

6.4.1 *Test Setup*. The test apparatus shown in Figure 2 consists of a complete refrigeration system. The manufacturer shall identify the refrigerants to be tested. The test apparatus can be modified to facilitate operation or testing of the system dependent equipment if the modifications to the apparatus are specifically described within the manufacturer's literature. A 6.3 mm balance line shall be connected across the test apparatus between the high- and low-pressure sides, with an isolation valve located at the connection to the compressor high side. A 6.3 mm access port with a valve core shall be located in the balance line for the purpose of measuring final recovery vacuum at the conclusion of the test.

Figure 2. System Dependent Equipment Test Apparatus



Section 7. Performance Testing Procedures

7.1 General Testing.

7.1.1 Temperatures. Testing shall be conducted at an ambient temperature of $24\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$ except high temperature vapor recovery shall be at $40\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$. The evaporator conditions of Section 6.2.3 shall be maintained as long as liquid refrigerant remains in the mixing chamber.

7.1.2 Refrigerants. The equipment shall be tested for all designated refrigerants (see Section 11.2). All tests in Section 7 shall be completed for each refrigerant before starting tests with the next refrigerant.

7.1.3 *Selected Tests*. Tests shall be as appropriate for the equipment type and ratings parameters selected (see Sections 9.9, 11.1 and 11.2).

7.1.4 *Hose Assemblies*. For the purpose of limiting refrigerant emissions to the atmosphere, hose assemblies shall be tested for permeation according to UL Standard 1963 (incorporated by reference, see § 82.168).

7.2 *Equipment Preparation and Operation*. The equipment shall be prepared and operated per the operating instructions.

7.3 *Test Batch*. The test batch consisting of refrigerant sample (see Section 5) of the test refrigerant shall be prepared and thoroughly mixed. Continued mixing or stirring shall be required during the test while liquid refrigerant remains in the mixing chamber. The mixing chamber shall be filled to 80 percent level by volume.

7.3.1 *Control Test Batch*. Prior to starting the test for the first batch for each refrigerant, a liquid sample will be drawn from the mixing chamber and analyzed per Section 8 to assure that contaminant levels match Table 1 within ± 10 ppm for moisture, ± 20 ppm for oleic acid and ± 0.5 percent for oil.

7.4 *Recovery Tests (Recovery and Recovery/Recycling Equipment)*

7.4.1 *Determining Recovery Rates*. The liquid and vapor refrigerant recovery rates shall be measured during the first test batch for each refrigerant (see Sections 9.1, 9.2 and 9.4). Equipment preparation and recovery cylinder changeover shall not be included in elapsed time measurements for determining vapor recovery rate and liquid refrigerant recovery rate. Operations such as subcooling the recovery cylinder shall be included. The recovery cylinder shall be the same size as per Section 6.3 or as furnished by the equipment manufacturer. Oversized tanks shall not be permitted.

7.4.1.1 *Liquid Refrigerant Recovery Rate*. If elected, the recovery rate using the liquid refrigerant feed means (see Section 6.2.5) shall be determined. After the equipment reaches stabilized conditions of condensing temperature and/or recovery cylinder pressure, the recovery process shall be stopped and an initial weight shall be taken of the mixing chamber (see Section 9.2). The recovery process shall be continued for a period of time sufficient to achieve the accuracy in Section 9.4. The recovery process shall be stopped and a final weight of the mixing chamber shall be taken.

7.4.1.2 *Vapor Refrigerant Recovery Rate*. If elected, the average vapor flow rate shall be measured to accuracy requirements in Section 9.4 under conditions with no liquid refrigerant in the mixing chamber. The liquid recovery feed means shall be used. At initial conditions of saturated vapor at the higher of 24 °C or the boiling temperature (100 kPa), the weight of the mixing chamber and the pressure shall be recorded. At final conditions representing pressure in the mixing chamber of 10 percent of the initial condition, but not less than the final recovery vacuum (see Section 9.6) nor more than 100 kPa, measure the weight of the mixing chamber and the elapsed time. At initial conditions, the recovery cylinder shall be at saturation pressure at ambient conditions.

7.4.1.3 *High Temperature Vapor Recovery Rate*. This is applicable for equipment having at least one designated refrigerant (see Section 11.2) with a boiling point between -50 °C and +10 °C. Measure the rate for R-22, or the refrigerant with the lowest boiling point if R-22 is not a designated refrigerant. Repeat the test in Section 7.4.1.2 at saturated conditions at 40 °C and continue to operate equipment to assure it will operate at this condition (see Section 7.4.3). At initial conditions, the recovery cylinder shall be at saturated pressure at 40 °C.

7.4.1.4 Push/Pull Liquid Refrigerant Recovery Rate. If elected, the average liquid push/pull flow rate shall be measured to accuracy requirements in Section 9.4. The mixing chamber and filling storage cylinder shall be filled with refrigerant vapor at initial conditions of saturated vapor at the higher of 24 °C or the boiling temperature at 100 kPa. An amount of liquid refrigerant shall be added to the mixing chamber equivalent to 80 percent by weight of the capacity of the filling storage cylinder. The pressure between the mixing chamber and filling storage cylinder shall be equalized and stabilized at initial conditions of saturated vapor at the higher of 24 °C or the boiling temperature at 100 kPa. The initial weight of the mixing chamber and the pressure shall be recorded. The equipment is then operated in push/pull liquid recovery mode and the weight change of the mixing chamber is recorded over time until all of the liquid has been transferred.

7.4.2 Recovery Operation. This test is for determining the final recovery vacuum and the ability to remove contaminants as appropriate. If equipment is rated for liquid recovery (see Section 7.4.1.3), liquid recovery feed means described in Section 6.2.5 shall be used. If not, vapor recovery means described in Sections 6.2.3 or 6.2.4 shall be used. Continue recovery operation until all liquid is removed from the test apparatus and vapor is removed to the point where equipment shuts down by automatic means or is manually shut off per operating instructions.

7.4.2.1 Oil Draining. Capture oil from the equipment at intervals as required in the instructions. Record the weight of the container. Completely remove refrigerant from oil by evacuation or other appropriate means. The weight difference shall be used in Section 7.5.2.

7.4.3 Final Recovery Vacuum. At the end of the first test batch for each refrigerant, the liquid valve and vapor valve of the apparatus shall be closed. After waiting 1 minute, the mixing chamber pressure shall be recorded (see Section 9.6).

7.4.4 Residual Refrigerant. This test will measure the mass of remaining refrigerant in the equipment after clearing and therefore the extent of mixing different refrigerants (see Section 9.6).

7.4.4.1 Initial Conditions. At the end of the last test for each batch for each refrigerant, the equipment shall be disconnected from the test apparatus (Figure 1). Recycle per Section 7.5, if appropriate. Perform refrigerant clearing operations as called for in the instruction manual. Capture and record the weight of any refrigerant which would have been emitted to the atmosphere during the clearing process for use in Section 9.5. If two loops are used for recycling, trapped refrigerant shall be measured for both.

7.4.4.2 Residual Trapped Refrigerant. Evacuate an empty test cylinder to 1.0 kPa. Record the empty weight of the test cylinder. Open all valves to the equipment so as to provide access to all trapped refrigerant. Connect the equipment to the test cylinder and operate valves to recover the residual refrigerant. Record the weight of the test cylinder using a recovery cylinder pressure no less than specified in Section 6.2.2. Place the test cylinder in liquid nitrogen for a period of 30 minutes or until a vacuum of 1000 microns is reached, whichever occurs first.

7.5 Recycling Tests (Recovery/Recycling Equipment).

7.5.1 Recycling Operation. As each recovery cylinder is filled in Section 7.4.2, recycle according to operating instructions. There will not necessarily be a separate recycling sequence. Note non-condensable purge measurement in Section 9.5.

7.5.1.1 Recycle Flow Rate. While recycling the first recovery cylinder for each refrigerant, determine the recycling flow rate by appropriate means (see Section 9.3) to achieve the accuracy required in Section 9.4.

7.5.2 Non-Condensable Sample. After completing Section 7.4.3, prepare a second test batch (see Section 7.3). Recover per Section 7.4.2 until the current recovery cylinder is filled to 80 percent level by volume. Recycle per Section 7.5.1. Mark this cylinder and set aside for taking the vapor sample. For equipment having both an internal tank of at least 3 kg refrigerant capacity and an external recovery cylinder, two recovery cylinders shall be marked and set aside. The first is the cylinder described above. The second cylinder is the final recovery cylinder after filling it to 80 percent level by volume and recycling.

7.5.2.1 Push/Pull Liquid Refrigerant Recovery Rate. This rate shall be measured by weight change of the mixing chamber divided by elapsed time (see Section 7.4.1.4). The units shall be kg/min and the accuracy shall be per Section 9.4.

7.5.3 Liquid Sample for Analysis. Repeat steps in Sections 7.3, 7.4.2 and 7.5.1 with further test batches until indication means in Section 4.2 show the filter/drier(s) need replacing.

7.5.3.1 Multiple Pass. For equipment with a separate recycling circuit (multiple pass), set aside the current cylinder and draw the liquid sample (see Section 7.4) from the previous cylinder.

7.5.3.2 Single Pass. For equipment with the single pass recycling circuit, draw the liquid sample (see Section 7.4) from the current cylinder.

7.6 Measuring Refrigerant Loss. Refrigerant loss due to non-condensables shall be determined by appropriate means (see Section 9.5.1). The loss could occur in Sections 7.4.1, 7.4.2 and 7.5.1.

Section 8. Sampling and Chemical Analysis Methods

8.1 Chemical Analysis. Chemical analysis methods shall be specified in appropriate standards such as AHRI Standard 700, 2008 Appendix C for Analytical Procedures for AHRI Standard 700-2014- Normative, and Addendum 700-1 to Appendix C. If alternate test methods are employed, the laboratory must be able to demonstrate that they produce results equivalent to the specified referee method.

8.2 Refrigerant Sampling.

8.2.1 Moisture Content. The water content in refrigerant shall be measured by the Karl Fischer Coulometric Titration technique. Report the moisture level in parts per million by weight.

8.2.2 Chloride Ions. Chloride ions shall be measured by turbidity tests. At this time, quantitative results have not been defined. Report chloride content as “pass” or “fail.” In the future, when quantitative results are possible, report chloride content as parts per million by weight.

8.2.3 Acid Content. The acidity test uses the titration principle. Report the acidity in parts per million by weight (mg KOH/kg) of sample.

8.2.4 High Boiling Residue. High boiling residues shall use measurement of the volume of residue after evaporating a standard volume of refrigerant. Using weight measurement and converting to volumetric units is acceptable. Report high boiling residues as percent by volume.

8.2.5 *Particulates/Solids*. The particulates/solids measurement employs visual examination. Report results as "pass" or "fail."

8.2.6 *Non-condensables*. The level of contamination by non-condensable gases in the base refrigerant being recycled shall be determined by gas chromatography. Report results as percent by volume.

Section 9. Performance Calculations for Ratings

9.1 *Vapor Refrigerant Recovery Rate*. This rate shall be measured by weight change of the mixing chamber divided by elapsed time (see 7.4.1.2). The units shall be kg/min and the accuracy shall be per Section 9.4.

9.1.1 *High Temperature Vapor Recovery Rate*. This rate shall be measured by measured weight change of the mixing chamber divided by elapsed time (see Section 7.4.1.3). The units shall be kg/min and the accuracy shall be per Section 9.4.

9.2 *Liquid Refrigerant Recovery Rate*. This rate shall be measured by weight change of the mixing chamber divided by elapsed time (see 7.4.1.3). The units shall be kg/min and the accuracy shall be per Section 9.4.

9.3 *Recycle Flow Rate*. The recycle flow rate shall be as defined in Section 3.12, expressed in kg/min, and the accuracy shall be per Section 9.4.

9.3.1 For equipment using multi-pass recycling or a separate sequence, the recycle rate shall be determined by dividing the net weight, *W*, of the refrigerant to be recycled by the actual time *T* required to recycle. Any set-up or operator interruptions shall not be included in the time *T*.

9.3.2 If no separate recycling sequence is used, the recycle rate shall be the higher of the vapor refrigerant recovery rate or the liquid refrigerant recovery rate. The recycle rate shall match a process which leads to contaminant levels in Section 9.9. Specifically, a recovery rate determined from bypassing a contaminant removal device cannot be used as a recycle rate when the contaminant levels in Section 9.9 are determined by passing the refrigerant through the contaminant removal device.

9.4 *Accuracy of Flow Rates*. The accuracy of test measurements in Sections 9.1, 9.2 and 9.3 shall be ± 0.08 kg/min for flow rates up to 0.42 kg/min and ± 2.0 percent for flow rates larger than 0.42 kg/min. Ratings shall be expressed to the nearest 0.02 kg/min.

9.5 *Refrigerant Loss*. This calculation will be based upon the net loss of refrigerant which would have been eliminated in the non-condensable purge process (see Section 7.5.1), the oil draining process (see Section 7.4.2.1) and the refrigerant clearing process (see Section 7.4.4.1), all divided by the net refrigerant content of the test batches. The refrigerant loss shall not exceed 3 percent by weight.

9.5.1 *Non-Condensable Purge*. Evacuate an empty container to 2 kPa. Record the empty weight of the container. Place the container in a dry ice bath. Connect the equipment purge connection to the container and operate purge according to operating instructions so as to capture the non-condensables and lost refrigerant. Weigh the cylinder after the recycling is complete. Equivalent means are permissible.

For units which either recycle or publish (list) non-condensable removal, non-condensable gases are purged, operating the recycle device per the manufacturer's instructions through an evaporator pressure regulator (EPR) valve into a liquid nitrogen-chilled cylinder. This combination will simulate the atmosphere while allowing the capture of purge gases. The cylinder is weighed before and after the purge procedure.

9.5.2 *Oil Draining*. Refrigerant removed from the oil after draining shall be collected and measured in accordance with Section 7.4.2.1.

9.5.3 *Clearing Unit*. Refrigerant captured during the clearing process shall be measured in accordance with Section 7.4.4.1.

9.6 *Final Recovery Vacuum*. The final recovery vacuum shall be the mixing chamber pressure in Section 7.4.3 expressed in kPa at 24 °C. The accuracy of the measurement shall be within 0.33 kPa.

9.7 *Residual Trapped Refrigerant*. The amount of residual trapped refrigerant shall be the final weight minus the initial weight of the test cylinder in Section 7.4.4.2, expressed in kg. The accuracy shall be ± 0.02 kg and reported to the nearest 0.05 kg.

9.8 *Refrigerant Processed*. The amount of refrigerant processed before changing filters (see Section 7.5.3) shall be expressed in kg to an accuracy of ± 1 percent.

9.9 *Contaminant Levels*. The contaminant levels remaining after testing shall be published as follows:

Moisture content, ppm by weight

Chloride ions, pass/fail

Acid Content, ppm by weight

High boiling residue, percent (by volume)

Particulates/solids, pass/fail (visual examination)

Non-condensables, percent (by volume)

9.10 *Minimum Data Requirements for Published Ratings*. Published ratings shall include all of the parameters as shown in Tables 2 and 3 for each refrigerant designated by the manufacturer.

Section 10. Tolerances

10.1 *Tolerances*. Performance related parameters shall be equal to or better than the published ratings.

Section 11. Marking and Nameplate Data

11.1 *Marking and Nameplate Data.* The nameplate shall display the manufacturer's name, model designation, type of equipment (Recovery or Recovery/Recycling and Self-Contained or System Dependent), designated refrigerant(s), capacities, and electrical characteristics where applicable. The nameplate shall also conform to the labeling requirements established for certified recycling and recovery equipment established at 40 CFR 82.158(h).

Recommended nameplate voltages for 60 Hertz systems shall include one or more of the equipment nameplate voltages shown in Table 1 of AHRI 110-2016 (incorporated by reference, see § 82.168). Recommended nameplate voltages for 50 Hertz systems shall include one or more of the utilization voltages shown in Table 1 of IEC 60038 (English version) (incorporated by reference, see § 82.168).

11.2 *Data for Designated Refrigerants.* For each refrigerant designated, the manufacturer shall include all the following that are applicable per Table 2:

- a. Liquid Recovery Rate, kg/min
- b. Vapor Recovery Rate, kg/min
- c. High Temperature Vapor Recovery Rate, kg/min
- d. Push/Pull Liquid Recovery Rate, kg/min
- e. Final Recovery Vacuum Level, kPa
- f. Recycle Flow Rate, kg/min
- g. Refrigerant Loss, kg
- h. Residual Trapped Refrigerant, kg
- i. Quantity of Refrigerant Processed at Rated Conditions, kg

TABLE 2—PERFORMANCE RATINGS FOR REFRIGERANT RECOVERY AND RECOVERY/RECYCLING EQUIPMENT ^{4 5}

Parameter	Type of equipment			
	Recovery	Recovery/ recycling	Recycling	System dependent equipment
Liquid Refrigerant Recovery Rate, kg/min	X ^{1 4}	X ¹	N/A ⁵	N/A
Vapor Refrigerant Recovery Rate, kg/min	X ¹	X ¹	N/A	N/A

¹ For a recovery or recovery/recycle unit, one must rate either liquid refrigerant recovery rate or vapor refrigerant recovery rate or one can rate for both. If rating only one, the other shall be indicated by N/A, "not applicable."

² Mandatory rating if multiple refrigerants, oil separation or non-condensable purge are rated.

³ Mandatory rating for equipment tested for multiple refrigerants.

⁴ "X" denotes mandatory rating or equipment requirements.

⁵ "N/A" indicates "Not Applicable" for a parameter that does not have a rating.

Parameter	Type of equipment			
	Recovery	Recovery/ recycling	Recycling	System dependent equipment
High Temperature Vapor Recovery Rate, kg/min	X ¹	X ¹	N/A	N/A
Push/Pull Liquid Recovery Rate, kg/min	X ¹	X ¹	N/A	N/A
Final Recovery Vacuum Level, kPa	X	X	N/A	X
Recycle Flow Rate, kg/min	N/A	X	X	N/A
Refrigerant Loss, kg	X ²	X	X	X ³
Residual Trapped Refrigerant, kg	X ³	X ²	X ²	X ²
Quantity of Refrigerant Processed at Rated Conditions, kg	N/A	X	X	N/A

¹ For a recovery or recovery/recycle unit, one must rate either liquid refrigerant recovery rate or vapor refrigerant recovery rate or one can rate for both. If rating only one, the other shall be indicated by N/A, "not applicable."

² Mandatory rating if multiple refrigerants, oil separation or non-condensable purge are rated.

³ Mandatory rating for equipment tested for multiple refrigerants.

⁴ "X" denotes mandatory rating or equipment requirements.

⁵ "N/A" indicates "Not Applicable" for a parameter that does not have a rating.

**TABLE 3—CONTAMINANT REMOVAL RATINGS FOR REFRIGERANT RECOVERY AND
RECOVERY/RECYCLING EQUIPMENT^{1 2}**

Contaminant	Type of equipment			
	Recovery	Recovery/ recycling	Recycling	System dependent equipment
Moisture Content, ppm by weight	N/A ²	X ¹	X	N/A
Chloride Ions, pass/fail	N/A	X	X	N/A
Acid Content, ppm by weight	N/A	X	X	N/A
High Boiling Residue, % by volume	N/A	X	X	N/A
Particulates/solids, pass/fail	N/A	X	X	N/A
Non-condensables, % by volume	N/A	X	X	N/A

¹ "X" denotes mandatory rating.

² "N/A" indicates "Not Applicable" for a parameter that does not have a rating.

Section 12. References

Listed here are all standards, handbooks, and other publications essential to the formation and implementation of the standard. All references in this appendix are considered as part of this standard.

- UL 1963, *Standard for Safety Refrigerant Recovery/Recycling Equipment*, Fourth Edition (with revisions through October 13, 2013), dated June 1, 2011, (incorporated by reference, see § 82.168).
- AHRI 110-2016, *2016 Standard for Air-Conditioning, Heating and Refrigerating Equipment Nameplate Voltages*, copyright 2016 (incorporated by reference, see § 82.168).
- AHRI Standard 700-2015, *Specifications for Refrigerants*, Air-Conditioning, Heating, and Refrigeration Institute
- IEC 60038 *IEC Standard Voltages*, Edition 7.0, 2009-06 (English version) (incorporated by reference, see § 82.168).

Section 13.0. Particulate Used in Standard Contaminated Refrigerant Sample

13.1 Particulate Specification

- 13.1.1 The particulate material (pm) will be a blend of 50 percent coarse air cleaner dust as received, and 50 percent retained on a 200-mesh screen. The coarse air cleaner dust is available from: AC Spark Plug Division; General Motors Corporation; Flint, Michigan.
- 13.1.2 *Preparation of Particulate Materials.* To prepare the blend of contaminant per ANSI/ASHRAE Standard 63.2-1996 (RA 2010), first wet screen a quantity of coarse air cleaner dust on a 200-mesh screen (particle retention 74 µm). This is done by placing a portion of the dust on a 200-mesh screen and running water through the screen while stirring the dust with the fingers. The fine contaminant particles passing through the screen are discarded. The larger than 200-mesh particles collected on the screen are removed and dried for one hour at 110 °C. The blend of standard contaminant is prepared by mixing 50 percent by weight of coarse air cleaner dust as received (after drying for one hour at 110 °C) with 50 percent by weight of the larger than 200-mesh screened dust.
- 13.1.3 *Particle Size Analysis.* The coarse air cleaner dust as received and the blend used as the standard contaminant have the following approximate particle size analysis:

TABLE B1—WEIGHT PERCENTAGE IN VARIOUS µm SIZE RANGES FOR PARTICLE SIZE ANALYSIS

Size range (µm)	As received (wt %)	Blend (wt %)
0-5	12	6
5-10	12	6
10-20	14	7
20-40	23	11

Size range (µm)	As received (wt %)	Blend (wt %)
40-80	30	32
80-200	9	38

[81 FR 82383, Nov. 18, 2016]

Appendix B4 to Subpart F of Part 82—Performance and Safety of Flammable Refrigerant Recovery and/or Recycling Equipment

This appendix is based on the Air-Conditioning, Heating, and Refrigeration Institute Standard 740-2016, *Performance Rating of Refrigerant Recovery Equipment and Recovery/Recycling Equipment*, and Underwriters Laboratories Standard 1963-2011 (Fourth Edition), *Standard for Safety: Refrigerant Recovery/Recycling Equipment*, including Supplement SB (added October 11, 2013), *Requirements for Refrigerant Recovery/Recycling Equipment Intended for Use with a Flammable Refrigerant*.

Section 1. Purpose

1.1 The purpose of this standard is to establish methods of testing for rating and evaluating the performance and safety of refrigerant recovery and/or recycling equipment and general equipment requirements (herein referred to as “equipment”) for contaminant or purity levels, capacity, speed and purge loss to minimize emission into the atmosphere of designated refrigerants, as well as safety for use with flammable refrigerants.

Section 2. Scope

2.1 This standard applies to equipment for recovering and/or recycling flammable single refrigerants, azeotropes, zeotropic blends, and their normal contaminants from refrigerant systems. This standard defines the test apparatus, test gas mixtures, sampling procedures, analytical techniques, and equipment construction that will be used to determine the performance and safety of refrigerant recovery and/or recycling equipment (hereinafter, “equipment”).

Section 3. Definitions

3.1 All terms in this appendix will follow the definitions in § 82.152 and Appendix B3 to Subpart F of Part 82 unless otherwise defined in this appendix.

3.2 All definitions used in UL 1963, including the definitions in Supplement SB, as applicable, are incorporated by reference, see § 82.168.

Section 4. Evaluation of Performance

4.1 *Performance Ratings*. All recovery and/or recycling equipment to be tested under this appendix must follow the procedures and meet all requirements established in Appendix B3 to Subpart F of Part 82 to determine the performance ratings in addition to the safety evaluation conducted under the rest of this appendix.

4.2 *Safety*. All recovery and/or recycling equipment to be tested under this appendix must follow the procedures and meet all requirements in Supplement SB (added October 11, 2013), *Requirements for Refrigerant Recovery/Recycling Equipment Intended for Use with a Flammable Refrigerant* in Underwriters Laboratories Standard 1963-2011 (Fourth Edition), *Standard for Safety: Refrigerant Recovery/Recycling Equipment* (incorporated by reference, see § 82.168).

[81 FR 82390, Nov. 18, 2016]

Appendix C to Subpart F of Part 82—Method for Testing Recovery Devices for Use With Small Appliances

Recovery Efficiency Test Procedure for Refrigerant Recovery Equipment Used on Small Appliances

The following test procedure is utilized to evaluate the efficiency of equipment designed to recover ozone depleting refrigerants (or any substitute refrigerant subject to the recycling rules promulgated pursuant to section 608 of the Clean Air Act Amendments of 1990) from small appliances when service of those appliances requires entry into the sealed refrigeration system or when those appliances are destined for disposal. This procedure is designed to calculate on a weight or mass basis the percentage of a known charge of CFC-12 refrigerant removed and captured from a test stand refrigeration system. Captured refrigerant is that refrigerant delivered to a container suitable for shipment to a refrigerant reclaimer plus any refrigerant remaining in the recovery system in a manner that it will be transferred to a shipping container after additional recovery operations.

The test stand refrigeration system required for this procedure is constructed with standard equipment utilized in currently produced household refrigerator and freezer products. The procedure also accounts for compressor oils that might be added to or removed from the test stand compressor or any compressor used in the recovery system.

I. Test Stand

Test stands are constructed in accordance with the following standards.

1. Evaporator— $\frac{5}{16}$ in. outside dia. with 30 cu. in. volume.
2. Condenser— $\frac{1}{4}$ in. outside dia. with 20 cu. in. volume.
3. Suction line capillary heat exchanger—appropriate for compressor used.
4. An 800-950 Btu/hr high side case (rotary) compressor; or (depending on the test senario);
5. An 800-9500 Btu/hr low side case (reciprocating) compressor.

A person seeking to have its recovery system certified shall specify the compressors by manufacturer and model that are to be used in test stands constructed for evaluation of its equipment, and the type and quantity of compressor to be used in those compressors. Only a compressor oil approved for use by the compressor's manufacturer may be specified, and the

quantity of compressor oil specified shall be an appropriate quantity for the type of oil and compressor to be used. In order to reduce the cost of testing, the person seeking certification of its recovery system may supply an EPA approved third party testing laboratory with test stands meeting these standards for use in evaluating its recovery system.

II. Test Conditions

Tests are to be conducted at 75 degrees F, plus or minus 2 degrees F ($23.9\text{ C} \pm 1.1\text{ C}$). Separate tests are conducted on both high side case compressor stands and low side case compressor stands. Separate tests are also conducted with the test stand compressor running during the recovery operation, and without the test stand compressor running during the recovery operation, to calculate the system's recovery efficiency under either condition.

These tests are to be performed using a representative model of all equipment used in the recovery system to deliver recovered refrigerant to a container suitable for shipment to a refrigerant reclaimer. The test stands are to be equipped with access valves permanently installed as specific by the recovery system's vendor to represent the valves used with that system in actual field operations.

A series of five (5) recovery operations are to be performed for each compressor scenario and a recovery efficiency is calculated based on the total quantity of refrigerant captured during all five (5) recoveries. Alternatively, at the request of the recovery system's vendor, a recovery efficiency is to be calculated for each recovery event. In this case, a statistically significant number of recovery operations are to be performed. Determination of what is a statistically significant number of recoveries is to be calculated as set out below. These individual recovery efficiencies are then averaged.

There are four (4) compressor scenarios to be tested. These are a high side case compressor in working condition; a high side case compressor in nonworking condition; a low side case compressor in working condition; and a low side case compressor in nonworking condition. Recovery efficiencies calculated for the two working compressor scenarios are to be averaged to report a working compressor performance. The two nonworking compressor efficiencies are also to be averaged to report a nonworking compressor performance.

If large scale equipment is required in the system to deliver recovered refrigerant to a refrigerant reclaimer (eg. carbon desorption equipment) and it is not possible to have that equipment evaluated under the procedure, the system's vendor shall obtain engineering data on the performance of that large scale equipment that will reasonably demonstrate the percentage refrigerant lost when processed by that equipment. That data will be supplied to any person required to evaluate the performance of those systems. The following procedure will also be modified as needed to determine the weight of refrigerant recovered from a test stand and delivered to a container for shipment to the large process equipment for further processing. The percentage loss documented to occur during processing is then to be applied to the recovery efficiencies calculated in this modified procedure to determine the overall capture efficiency for the entire system.

The following are definitions of symbols used in the test procedure.

Test Stand:

"TSO" means an original test stand weight.

"TSC" means a charged test stand weight.

Shipping Containers:

"SCO" means the original or empty weight of shipping container(s).

"SCF" means the final or full weight of shipping container(s).

Recover/Transfer System:

"RSO" means the original weight of a recovery/transfer system.

"RSF" means the final weight of a recovery/transfer system.

"OL" means the net amount of oil added/removed from the recovery device and/or transfer device between the beginning and end of the test for one compressor scenario.

Weighing steps are conducted with precision and accuracy of plus or minus 1.0 gram.

III. Test Procedure

1. Evacuate the test stand to 20 microns vacuum (pressure measured at a vacuum pump) for 12 hours.
2. Weigh the test stand (TSO).
3. If this is the first recovery operation being performed for a compressor scenario (or if a recovery efficiency is to be calculated for each recovery event), then weigh all devices used in the recovery system to deliver recovered refrigerant to a container suitable for shipment or delivery to a refrigerant reclaimer. Weigh only devices that can retain refrigerant in a manner that it will ultimately be transferred to a shipping container without significant release to the atmosphere (RSO).
4. Weigh final shipping containers (SCO).
5. Charge the test stand with an appropriate CFC-12 charge (either 6 oz. or 9 oz.).
6. Run the test stand for four (4) hours with 100% run time.
7. Turn off the test stand for twelve (12) hours. During this period evaporate all condensation that has collected on the test stand during step 6.
8. Weigh the test stand (TSC).
9. Recover CFC-12 from the test stand and perform all operations needed to transfer the recovered refrigerant to one of the shipping containers weighed in step 4. All recovery and transfer operations are to be performed in accordance with the operating instructions provided by the system's vendor. The compressor in the test stand is to remain "off" or be turned "on" during the recovery operation depending on whether the test is for a nonworking or working compressor performance evaluation. If a recovery efficiency is to be calculated for each recovery event, transfer the captured refrigerant to a shipping container and then skip to step 13. Otherwise continue. If the system allows for multiple recovery operations to be performed before transferring recovered refrigerant to a shipping container, the transfer operation can be delayed until either the maximum number of recovery operations allowed before a transfer is required have been performed, or the last of the five (5) recovery operations has been performed.
10. Perform any oil removal or oil addition operations needed to properly maintain the test stand and the devices used for recovery or transfer operations. Determine the net weight of the oil added or removed from the recovery device and/or transfer device. (OP1 for oil added, OP2 for oil removed).
11. Evacuate the test stand to 20 microns vacuum for 4 hours.

12. Return to step 2 unless five (5) recovery operations have been performed.
13. Weigh all final shipping containers that received recovered refrigerant (SCF).
14. Weigh the equipment weighed in step three (3) above (RSF). If a recovery efficiency is to be calculated for each recovery event, perform calculations and return to step one (1) for additional recoveries.

IV. Calculations

A. For Five (5) Consecutive Recoveries

Refrigerant Recoverable equals the summation of charged test stand weights minus original test stand weights.

$$\text{Refrigerant Recoverable} = \sum_{i=1}^5 (TSC_i - TSO_i)$$

Oil Loss equals the net weight of oil added to and removed from the recovery device and/or transfer device.

$$OL = \sum_{i=1}^5 (OP1_i - OP2_i)$$

Refrigerant Recovered equals the final weight of shipping containers minus the initial weight of final shipping containers, plus final recovery system weight, minus original recovery system weight, plus the net value of all additions and removals of oil from the recovery and transfer devices.

$$\text{Refrigerant Recovered} = \left(\sum_{i=1}^n SCF_i - SCO_i \right) + RSF - RSO - OL$$

n = number of shipping containers used.

Recovery Efficiency equals Refrigerant Recovered divided by Refrigerant Recoverable times 100%.

$$\text{Recovery Efficiency} = \frac{\text{Refrigerant Recovered}}{\text{Refrigerant Recoverable}} 100\%$$

B. For Individual Recoveries

Refrigerant Recoverable equals the charged test stand weight minus the original test stand weight.

$$\text{Refrigerant Recoverable} = TSCO - TSO$$

Refrigerant Recovered equals the final weight of the shipping container minus the initial weight of the shipping container plus the final weight of the recovery system minus the original recovery system weight.

$$\text{Refrigerant Recovered} = \text{SCF} - \text{SCO} + \text{RSF} - \text{RSO}$$

Recovery Efficiency equals Refrigerant Recovered divided by Refrigerant Recoverable times 100 percent.

$$\text{Recovery Efficiency} = \frac{\text{Refrigerant Recovered}}{\text{Refrigerant Recoverable}} 100\%$$

C. Calculation of a Statistically Significant Number of Recoveries

$$N_{\text{add}} = \left((t * \text{sd}) / (.10 * X) \right)^2 - N$$

Where:

N_{add} = the number of additional samples required to achieve 90% confidence.

sd = Standard deviation, or $(X/(N-1))^5$

X = Sample average

N = Number of samples tested

Number of samples	t for 90% confidence
2	6.814
3	2.920
4	2.353
5	2.132
6	2.015
7	1.943
8	1.895
9	1.860
10	1.833

Procedure:

1. Compute N_{add} after completing two recoveries.
2. If $N_{\text{add}} > 0$, then run an additional test.
3. Re-compute N_{add} . Continue to test additional samples until $N_{\text{add}} < 0$.

V. Test Procedure Approval and Certification

Each vendor of capture equipment for small appliances desiring certification will provide a representative model of its capture system and its recommended recovery procedures to an EPA approved third party laboratory for testing in accordance with this procedure. The third party laboratory will certify recovery systems that when tested in accordance with this procedure demonstrate a sufficient recovery efficiency to meet EPA regulatory requirements.

Appendix D to Subpart F of Part 82—Standards for Becoming a Certifying Program for Technicians

a. Test Preparation. Technicians must pass an EPA-approved test, provided by an EPA-approved certifying program to be certified as a Type I technician. Organizations providing Type I certification only may choose either an on-site format or a mail-in format similar to what is permitted under the MVACs program.

Technicians must pass a closed-book, proctored test, administered in a secure environment, by an EPA-approved certifying program to be certified as a Type II or Type III technician.

Technicians must pass a closed-book, proctored test (or series of tests), administered in a secure environment, by an EPA-approved certifying program to be certified as a Universal technician. Mail-in format Type I tests cannot be used toward a Universal certification.

Each certifying program must assemble tests by choosing a prescribed subset from the EPA test bank. EPA will have a test bank with more questions than are needed for an individual test, which will enable the certifying program to generate multiple tests in order to discourage cheating. Each test must include 25 questions drawn from Group 1 and 25 questions drawn from each relevant technical Group. Tests for Universal technicians will include 100 questions (25 from Group 1 and 25 from each relevant technical Group). Universal tests may be taken all at once, or by combining passing scores on separate Type I, Type II, and Type III tests. Questions should be divided in order to sufficiently cover each topic within the Group.

Certifying programs must provide a paper hand-out or electronic form of communication to technicians after they have completed their certification test that contains the following information:

- Which certifying program is providing the testing;
- Contact information for the certifying program;
- The name and contact information of the proctor; and
- When they should expect to receive their score and, if they passed, their certification card.

Each certifying program must show a method of randomly choosing which questions will be on the tests. Multiple versions of the test must be used during each testing event. Test answer sheets must include the name and address of the applicant, the name and address of the certifying program, and the date and location at which the test was administered.

Training material accompanying mail-in Type I tests must not include sample test questions mimicking the language of the certification test. All mail-in material will be subject to review by EPA.

Certifying programs may charge individuals reasonable fees for the administration of the tests. EPA will publish a list of all approved certifying programs.

b. Proctoring. A certifying program for Type I (if in-person), Type II, Type III, and Universal technicians must designate at least one proctor registered for every 50 people taking tests at the same time at a given site.

The certification test for Type I (if taken as part of a Universal certification), Type II, Type III, and Universal technicians is a closed-book exam. The proctors must ensure that the applicants for certification do not use any notes or training materials during testing. Desks or work space must be placed in a way that discourages cheating. The space and physical facilities are to be conducive to continuous surveillance by the proctors and monitors during testing.

The proctor may not receive any benefit from the outcome of the testing other than a fee for proctoring. Proctors cannot know in advance which questions are on the tests they are proctoring.

Proctors are required to verify the identity of individuals taking the test by examining photo identification. Acceptable forms of identification include but are not limited to drivers' licenses, government identification cards, passports, and military identification.

Certifying programs for Type I technicians using the mail-in format, must take sufficient measures at the test site to ensure that tests are completed honestly by each technician. Each test for Type I certification must provide a means of verifying the identification of the individual taking the test. Acceptable forms of identification include but are not limited to drivers' licenses and passports.

c. Test Security. A certifying program must demonstrate the ability to ensure the confidentiality and security of the test questions and answer keys through strict accountability procedures. An organization interested in developing a technician certification program will be required to describe these test security procedures to EPA.

After the completion of a test, proctors must collect all test forms, answer sheets, scratch paper and notes. These items are to be placed in a sealed envelope.

d. Test Content. All Type I, Type II and Type III, certification tests will include 25 questions from Group I and 25 questions from Group

- II. Universal certification tests will include 25 questions from Group I and 75 questions from Group II (with 25 from each of the three sector-specific areas).

Group I will ask questions in the following areas:

1. Environmental impact of CFCs, HCFCs, and substitute refrigerants
2. Laws and regulations
3. Changing industry outlook

Group II will ask questions covering sector-specific (i.e., Type I, Type II, Type III) issues in the following areas:

4. Leak detection
5. Recovery Techniques
6. Safety
7. Shipping
8. Disposal

e. Grading. Tests must be graded objectively. Certifying programs must inform the applicant of their test results no later than 30 days from the date of the test. Type I certifying programs using the mail-in format must notify the applicants of their test results no later than 30 days from the date the certifying programs received the completed test and any required documentation.

The passing score for the closed-book Type I, Type II, Type III and Universal certification test is 70 percent. The passing score for Type I certification tests using the mail-in format is 84 percent.

f. Proof of Certification. Certifying programs must issue a standard wallet-sized identification card no later than 30 days from the date of the test. Type I certifying programs using mail-in formats must issue cards to certified technicians no later than 30 days from the date the certifying program receives the completed test and any required documentation.

Each wallet-sized identification card must include, at a minimum, the name of the certifying program including the date the certifying program received EPA approval, the name of the person certified, the type of certification, a unique number for the certified person that does not include a technician's social security number, and the following text:

[name of person] has successfully passed a [Type I, Type II, Type III and/or Universal—as appropriate] exam on how to responsibly handle refrigerants as required by EPA's National Recycling and Emissions Reduction Program.

g. Recordkeeping and Reporting Requirements. Certifying programs must maintain records of the names and addresses of all individuals taking the tests, the scores of all certification tests administered, and the dates and locations of all tests administered. These records must be maintained indefinitely, unless transferred to another certifying program or EPA.

EPA must receive an activity report from all approved certifying programs by every January 30 and July 30, which covers the previous six months of certifications. The first report must be submitted following the first full six-month period for which the program has been approved by EPA. This report includes the pass/fail rate. If the certifying program believes a test bank question needs to be modified, information about that question should also be included.

Approved certifying programs will receive a letter of approval from EPA. Each testing center must display a copy of that letter at their place of business.

Approved technician certification programs that voluntarily plan to stop providing the certification test must forward all records required by this appendix and § 82.161 to another program currently approved by EPA in accordance with this appendix and with § 82.161. Approved technician certification programs that receive records of certified technicians from a program that no longer offers the certification test, and the program that is voluntarily withdrawing from being a technician certification program must inform EPA at the address listed in § 82.160 within 30 days of receiving or transferring these records. The notification must include the name and address of the program to which the records have been transferred. If another currently approved program willing to accept the records cannot be located, these records must be submitted to EPA at the address listed at § 82.160.

Technician certification programs that have had their certification revoked in accordance with § 82.169 must forward all records required by this appendix and § 82.161 to EPA at the address listed in § 82.160. Failure to do so is a violation of 40 CFR part 82, subpart F.

h. Additional Requirements. EPA may periodically inspect testing sites to ensure compliance with EPA regulations. If testing center discrepancies are found, they must be corrected within a specified time period. If discrepancies are not corrected, EPA may suspend or revoke the certifying program's approval. The inspections will include but are not limited to a review of the certifying program's provisions for test security, the availability of space and facilities to conduct the administrative requirements and ensure the security of the tests, the availability of adequate testing facilities and spacing of the applicants during testing, a review of the proper procedures regarding accountability, and that there is no evidence of misconduct on the part of the certifying programs, their representatives and proctors, or the applicants for certification.

If the certifying programs offer training or provide review materials to the applicants, these endeavors are to be considered completely separate from the administration of the certification test.

[81 FR 82390, Nov. 18, 2016]

Appendix E to Subpart F of Part 82—Test Procedure for Leaks From Containers Holding Two Pounds or Less of Refrigerant for Use in an MVAC

This appendix is based on the California Air Resources Board (CARB) standard *TP-503: Test Procedure for Leaks from Small Cans of Automotive Refrigerant*, as amended on January 5, 2010; and CARB standard *BP-A1: Balance Protocol for Gravimetric Determination of Sample Weights using a Precision Balance*, as amended January 5, 2010.

Section 1. Applicability

This test procedure is used by manufacturers of containers holding two pounds or less of refrigerant for use in a motor vehicle air conditioner (MVAC) to determine the leakage rate of small containers of automotive refrigerant that are subject to the requirements of 40 CFR part 82, subpart F. Specifically, this test procedure will specify the equipment, procedures, and calculations to determine if a container holding two pounds or less of refrigerant for use in an MVAC complies with the leakage rate specified in § 82.154(c)(2)(ii). All terms in this appendix will follow the definitions in § 82.152 unless otherwise defined in this appendix.

All containers holding two pounds or less of refrigerant for use in an MVAC must comply with other applicable codes and regulations such as local, state, or Federal safety codes and regulations.

This test procedure involves the use of materials under pressure and operations and should only be used by or under the supervision of those familiar and experienced in the use of such materials and operations. Appropriate safety precautions should be observed at all times while performing this test procedure.

Section 2. Principle and Summary of Test Procedure

This procedure is used to determine the leakage rate of containers holding two pounds or less of refrigerant for use in an MVAC (small cans). Testing will involve subjecting both full and partially empty cans in both upright and inverted positions at two temperatures: 73 °F and 130 °F.

Thirty small cans are tested under each condition for a total of 240 small cans tested. Small cans are brought to temperature stability, weighed, then stored for 30 days under specified conditions of temperature, orientation, and state of fill, then re-weighed. Leakage rate (grams/year) is estimated by (weight loss in grams) x 365/(days duration). The leakage rate is then compared to a standard of 3.00 grams/year to determine if a given small can complies with the leakage rate specified in § 82.154(c)(2)(ii).

Section 3. Biases and Interferences

3.1 Contaminants on the operator's hands can affect the weight of the small can and the ability of the small can to absorb moisture. To avoid contamination of the small can, the balance operator should wear gloves while handling the small cans.

3.2 Weight determinations can be interfered with by moisture condensing on the small can and by thermal currents generated by temperature differences between the small can and the room temperature. The small cans cool during discharge and could cause condensation. For these reasons, small cans must be equilibrated to balance room temperature for at least four hours before weighing.

3.3 Variations in the temperature, pressure, and humidity of the ambient air will cause variations in the buoyancy of the small can. These variations should typically be less than 25 mg for a small can. If the small can is not leaking at all, then the uncorrected weight changes will be within the range of 0 ± 25 mg, which is about ten percent of the 247 mg loss expected after thirty days for a can leaking at 3 g/yr. In that case buoyancy corrections can be omitted. If the absolute value of the uncorrected weight change exceeds 25 mg, then all calculations must be made using weights corrected for buoyancy based on the temperature, pressure, and humidity of the weighing room.

3.4 Some electronic balances are sensitive to the effects of small static charges. The small can should be placed directly on the balance pan, ensuring metal to metal contact. If the balance pan is not grounded, the small can and balance pan should be statically discharged before weighing.

Section 4. Sensitivity and Range

The mass of a full small can could range from roughly 50 g to 1000 g depending on the container capacity. A top loading balance, capable of a maximum weight measurement of not less than 1,000 g and having a minimum readability of 0.001 g, reproducibility and linearity of ± 0.002 g, must be used to perform mass measurements.

Section 5. Equipment

5.1 A top loading balance that meets the requirements of Section 4 above.

5.2 A NIST traceable working standard mass for balance calibration. A NIST traceable working standard mass for a balance linearity check. A reference mass to serve as a "blank" small can.

5.3 An enclosure capable of controlling the internal air temperature from $73^{\circ}\text{F} \pm 5^{\circ}\text{F}$, and an enclosure capable of controlling the internal air temperature to $130^{\circ}\text{F} \pm 5^{\circ}\text{F}$.

5.4 A temperature instrument capable of measuring the internal temperature of the temperature conditioning enclosures and the balance room with a sensitivity of ± 2 °F.

5.5 A barometric pressure instrument capable of measuring atmospheric pressure at the location of the balance to within ± 0.02 inches of mercury.

5.6 A relative humidity measuring instrument capable of measuring the relative humidity (RH) at the location of the balance with a sensitivity of ± 2 percent RH.

5.7 A hose with appropriate fitting for dispensing refrigerant from the small can to a recovery machine.

5.8 A refrigerant recovery machine to collect the discharged refrigerant from small cans being tested.

Section 6. Calibration Procedures

6.1 Calibrations are applied to the balance and to the support equipment such as temperature, humidity, and pressure monitoring equipment. Procedures for calibration are not spelled out here. General calibration principals for the support equipment and the balance are described in Section 11, Quality Assurance/Quality Control. Detailed calibration procedures for measurements made using the balance are contained in Attachment A: "Balance Protocol for Gravimetric Determination of Sample Weights using a Precision Balance."

Section 7. Small Can Preparation

7.1 Receive a batch of 240 small cans of one design to be tested. These may include several SKUs from different manufacturers if the container and valve combination are the same.

7.2 Clean small cans with Alkanox solution or equivalent and dry with a lint free towel.

7.3 Confirm that the sample ID sticker on the small can matches the sample ID on the chain of custody forms.

7.4 Select a reference mass similar to the weight of a full small can. If multiple sets of similar sized small cans are being tested, only one reference mass is needed; it can be used with all sets. Store the reference mass in the balance area.

7.5 Evacuate the contents of one half of the small cans (120 cans) into the refrigerant recovery machine using normal DIY dispensing procedures until each small can is approximately half full.

7.6 Select a reference mass similar to the weight of the half-full small can. If multiple sets of similar size small cans are being tested, only one reference mass is needed; it can be used with all sets. Store the reference mass in the balance area.

Section 8. Small Can Weighing

Weighing cans on the balance is done in accordance with Attachment A to this appendix. Attachment A describes how to conduct weight determinations including appropriate calibration and QC data. This section, "Small Can Weighing," describes the overall process, not the details of how to use the balance.

Initial Weights

8.1 Put on gloves. Check the small cans for contamination.

8.2 Place the 240 small cans into a location where they can equilibrate to balance room temperature. Record the small can test IDs and the equilibration start time on the Small Can Test Data Forms available on EPA's Web site in sets of thirty, one form for each of the eight test conditions.

8.3 Let cans equilibrate for at least four hours.

8.4 Weigh the set of 240 small cans and the reference weights using Attachment A and log the results to the Balance Weighing Log Form available on EPA's Web site.

8.5 Transfer data from the Balance Weighing Log Form to the Small Can Test Data Form in sets of 30, one set for each of the eight conditions to be tested.

Thirty-Day Soak

8.6 Place each set of 30 small cans into the appropriate orientation and temperature for soaking:

- 30 full small cans—73 °F, upright
- 30 full small cans—73 °F, inverted
- 30 full small cans—130 °F, upright
- 30 full small cans—130 °F, inverted
- 30 half-full small cans—73 °F, upright
- 30 half-full small cans—73 °F, inverted
- 30 half-full small cans—130 °F, upright
- 30 half-full small cans—130 °F, inverted

8.7 Soak the small cans for 30 days undisturbed.

Final Weighing

8.8 Place the 240 small cans into a location where they can equilibrate to balance room temperature.

8.9 Let the small cans equilibrate for at least four hours.

8.10 Weigh the set of 240 small cans, the reference weights, and any additional sets of small cans using Attachment A.

8.11 Transfer data from the Balance Weighing Log Form to the corresponding Small Can Test Data Forms.

Section 9. Calculations

Corrections for Buoyancy

The calculations in this section are described in terms of “weight.” Mass is a property of the small can, whereas weight is a force due to the effects of buoyancy and gravity. Procedures for correcting the effect of buoyancy are given in Attachment B of this appendix. Ignoring buoyancy, *i.e.*, using weight data uncorrected for buoyancy effects, is acceptable for a thirty day test if the absolute magnitude of the weight change is less than 25 mg. If the uncorrected weight change exceeds 25 mg for any small can, then correct all small can weights for buoyancy using the procedures in Attachment B before performing the calculations described below.

Calculation of Leak Rate

The emission rate in grams/day for each small can is calculated by subtracting the final weight from the initial weight and then dividing the weight difference by the time difference measured in days to the nearest hour (nearest 1/24 of a day). The emission rate in g/day is multiplied by 365 to determine emission rate in grams/yr. If the annual emission rate for any small can exceeds the entire small can contents, then the annual emission rate for that small can is adjusted to equal the entire small can contents/year (*e.g.*, about 350 g/yr for a 12 ounce small can). The annual emission rate for the purpose of the test is calculated by averaging the 240 individual adjusted annual emission rates and rounding to two decimal places. The cans fail the test if the adjusted annual emission rate averaged over 240 cans is greater than 3.00 g/yr. The calculations are described below.

Loss rate for each small can

$$E_{i\text{daily}} = (W_{i\text{final}} - W_{i\text{initial}})/(D_{i\text{final}} - D_{i\text{initial}}) \text{ g/day}$$

$$E_{i\text{annual}} = 365 \times E_{i\text{daily}} \text{ g/year}$$

$$E_{i\text{adjusted}} = \text{Minimum of } (E_{i\text{adjusted}}, C_i/\text{year}) \text{ g/yr}$$

Where,

E_i = emission rate

$W_{i\text{final}}$ = weight of can *i* after soaking (grams)

$W_{i\text{initial}}$ = weight of can *i* before soaking (grams)

$D_{i\text{final}}$ = date/time of final weight measurements (days)

$D_{i\text{initial}}$ = date/time of initial weight measurements (days)

C_i = original factory mass of refrigerant in can i

Note: Date/Times are measured in days. Microsoft Excel stores dates and times in days, and the calculations can be made directly in Excel. If calculations are made manually, calculate serial days to the nearest hour for each date and time as follows:

$$D = \text{Julday} + \text{Hour}/24$$

Where,

Julday = serial day of the year: Jan 1 = 1, Jan 31 = 31, Feb 1 = 32, etc.

Hour = hour of day using 24-hour clock, 0 to 23

Calculate the average loss rate for the 240 small cans as follows:

$$E_{\text{mean}} = [\text{Sum } (E_{\text{adjusted}i}), i = 1 \text{ to } 240]/240$$

Section 10. Recordkeeping

During small can weighing, record the small can weights and date/times on the Balance Weighing Log Form. After each weighing session, transfer the measured weights and date/times from the Balance Weighing Log Form to the Small Can Test Data Form.

At the end of the test, complete the calculations described in Section 9, Calculations, and record the results on the Small Can Test Data Form.

Section 11. Quality Assurance/Quality Control

11.1 All temperature, pressure, and humidity instruments should be calibrated annually against NIST traceable laboratory standards. The main purpose of the NIST traceable calibration is to establish the absolute accuracy of the device. The instruments should also be checked periodically such as weekly, monthly, or quarterly against intermediate standards or against independent instruments. For example, a thermocouple can be checked weekly against a wall thermometer. A barometer or pressure gauge can be checked weekly by adjusting to sea level and comparing with local airport data. The main purpose of the frequent checks is to verify that the device has not failed in some way. This is especially important for electronic devices such as a digital thermometer, but even a liquid filled thermometer can develop a problem such as a bubble.

11.2 The balance should be serviced and calibrated annually by an independent balance service company or agency using NIST traceable reference masses. Servicing verifies accuracy and linearity, and the maintenance performed helps ensure that a malfunction does not develop.

11.3 The balance must also be calibrated and its linearity checked with working standards before and after each weighing session, or before and after each group of 24 small cans if more than 24 small cans are weighed in a session. Procedures for calibrating and using the balance, as well as recording balance data, are described in the accompanying balance weighing protocol. These procedures include zero checks, calibration checks, and reference mass checks. Procedures for calculating quality control data from those checks are described in Attachment A.

11.4 The small cans are cleaned then handled using gloves to prevent contamination. All equilibration and soaking must be done in a dust free area.

Section 12. Balance Protocol for Gravimetric Determination of Sample Weights Using a Precision Balance

12.1 *Scope and application*

This Protocol summarizes a set of procedures and tolerances for weighing objects in the range of 0 to 1,000 g with a resolution of 0.001 g. This protocol only addresses balance operations, it does not address project requirements for equilibration, sample hold time limits, sample collection etc.

12.2 *Summary of method*

The balance is zeroed and calibrated using procedures defined herein. Object weight determinations are conducted along with control object weight determinations, zero checks, calibration checks, sensitivity checks, and replicate weightings in a defined sequence designed to control and quantitatively characterize precision and accuracy.

12.3 *Definitions*

N/A.

12.4 *Interferences*

Object weights can be affected by temperature and relative humidity of their environment, air currents, static electricity, gain and loss of water vapor, gain or loss of and loss of volatile compounds directly from the sample or from contaminants such as finger prints, marker ink, and adhesive tape.

Contamination, transfer of material to or from the samples, is controlled by conducting operations inside a clean area dedicated to the purpose and having a filtered laminar air flow where possible; by wearing gloves while handling all samples and related balance equipment; by using forceps to handle small objects, and by keeping the balance and all related equipment inside the clean area.

Air currents are controlled by conducting weighing operations inside a closed chamber or glove box and by allowing the substrates to reach temperature and relative humidity equilibrium. The chamber is maintained at 40 percent relative humidity and 25 °C by a continuous humidity and temperature control system. The temperature and RH conditions are recorded at least once per weighing sessions. Equilibration times for samples that are particularly sensitive to humidity or to loss of semi-volatiles species are specified by project requirements.

Static electric charges on the walls of the balance and the weighed objects, including samples, controls, and calibration weights, can significantly affect balance readings. Static is avoided by the operator ground himself and test objects as described in the balance manual.

12.5 *Personnel health and safety*

N/A

12.6 *Equipment and supplies*

- Filtered, temperature and humidity controlled weighing chamber.
- Precision Balance
- Plastic forceps
- Nylon fabric gloves.
- Working calibration weights: ANSI Class 2, 1000g and 500 g
- Working sensitivity weight: 50 mg
- Reference objects: references are one or more objects that are typical of the objects to be weighed during a project, but that are stored permanently inside the balance glove box. Reference objects are labeled Test1, Test2, Test3, etc.

12.7 *Reagents and standard*

N/A

12.8 *Sample collection, preservation, and storage*

N/A. See relevant project requirements and SOPs.

12.9 *Quality control*

Data quality is controlled by specifying frequencies and tolerances for Zero, Calibration, Linearity, and Sensitivity checks. If checks do not meet tolerance criteria, then samples must be re-weighed. In addition, the procedures specify frequencies for Control Object Checks.

Data quality is quantitatively characterized using Zero Check, Calibration Check, and Control Check data. These data are summarized monthly in statistics and QC charts.

12.10 *Calibration and standardization*

The absolute accuracy of the balance is established by calibration against an ANSI Class 2, stainless steel working weight: 1000.000 g $\pm$ 0.0025 g. Linearity is established checking the midpoint against an ANSI Class 2 stainless steel working weight: 500.000 $\pm$ 0.0012 g. Sensitivity is established using an ANSI Class 2 stainless steel or aluminum working weight: 50 mg. Precision is checked by periodically checking zero, calibration, and reference object weights.

12.11 Procedure

12.11.1 Overview of Weighing Sequence

Weighing a series of substrates consists of performing the following procedures in sequence, while observing the procedures for handling and the procedures for reading the balance:

1. Initial Adjustment
2. Weigh eight samples
3. Zero Check
4. Weigh eight samples
5. Zero Check
6. Weigh eight samples
7. Calibration Check
8. Return to step 2.
9. If less than 24 cans are weighed, perform a final Calibration Check at the end of weighing.

This sequence is interrupted and samples are reweighed if QC check tolerances are not met. Each of these procedures along with procedures for handling and reading the balance are described below. The QC tolerances referred to in these procedures are listed in Table 1.

12.11.2 Handling

1. Never touch samples, weights, balance pans, etc. with bare hands. Wear powder free gloves to handle the weights, controls, and samples.

12.11.3 Reading the Balance

1. Close the door. Wait for the balance stabilization light to come on, and note the reading.
 2. Watch the balance reading for 30 sec (use a clock). If the reading has not changed by more than 0.001 g from the reading noted in step 1, then record the reading observed at the end of the 30 sec period.
 3. If the reading has drifted more than 0.001 g note the new balance reading and go to step 2.
 4. If the balance reading is flickering back and forth between two consecutive values choose the value that is displayed more often than the other.
 5. If the balance reading is flickering equally back and forth between two consecutive values choose the higher value.

12.11.4 Initial Adjustment

1. Empty the sample pan Close the door. Select Range 1000 g
2. Wait for a stable reading
3. Record the reading with QC code IZC (initial zero check)
4. Press the Tare button
5. Record the reading in the logbook with QC code IZA (initial zero adjust)
6. Place the 1,000 g working calibration weight on the balance pan
7. Wait for a stable reading.
8. Record the reading with QC code ICC (initial cal check)
9. Press the Calibrate button
10. Record the reading with QC code ICA (initial cal adjust)
11. Remove the calibration weight.
12. Wait for a stable reading.
13. Record the reading with QC code IZC.
14. If the zero reading exceeds ± 0.002 g, go to step 4.
15. Place the 500 g calibration weight on the balance pan
16. After a stable reading, record the reading with QC code C500. Do not adjust the balance.
17. Add the 0.050 g weight to 500 g weight on the balance pan.
18. After a stable reading, record the reading with QC code C0.05. Do not adjust the balance.
19. Weigh reference object TEST1, record reading with QC code T1.
20. Weigh the reference object TEST2, TEST3, etc. that is similar in weight to the samples that you will be weighing. Record with QC code T2, T3, etc.

12.11.5 Zero Check

1. Empty the sample pan. Close the door.
2. Wait for a stable reading
3. Record the reading with QC code ZC
4. If the ZC reading is less than or equal to the zero adjustment tolerance shown in Table 1, return to weighing and *do not adjust the zero*. If the ZC reading exceeded the zero adjustment tolerance, proceed with steps 5 through 7.
5. Press the Tare button
6. Record the reading in the logbook with QC code ZA.
7. If the ZC reading exceeded the zero re-weigh tolerance, change the QC code recorded in step 3 from ZC to FZC. Then enter a QC code of FZ into the QC code column of all samples weights obtained after the last valid zero check. Re- weigh all of those samples, recording new data in new rows of the logbook.

12.11.6 Calibration Check

1. First, follow procedures for Zero Check. If the ZC was within tolerance, tare the balance anyway (*i.e.*, follow steps 5 and 6 of the Zero Check method)
2. Place the 1,000 g working calibration weight on the sample pan, wait for a stable reading.
3. Record the reading with QC code C1000
4. If the C1000 reading is less than or equal to the calibration adjustment tolerances, skip steps 5 through 8 and proceed to step 9. *Do not adjust the calibration.*
5. If the C100 reading exceeded the calibration adjust tolerance, press the Calibrate button.
6. Record the reading in the logbook with QC code CA
7. Perform a Zero Check (follow the Zero Check method)
8. If the C1000 reading exceeded the calibration re-weigh tolerance, change the code recorded in step 3 from C1000 to FC1000. Enter FC into the QC column for all sample weights obtained after the last valid calibration check. Re-weigh all of those samples, recording new data in new rows of the logbook.

12.11.7 Replicate Weighing Check

1. This protocol does not include reweigh samples to obtain replicates. The projects for which this protocol is intended already include procedures multiple weightings of each sample.

TABLE 1—QC TOLERANCES AND FREQUENCIES FOR BALANCE PROTOCOL

READING TOLERANCE:	
0.001 g, stable for 30 sec.	
ADJUSTMENT TOLERANCES:	
Zero:	−0.003 to +0.003 g.
Calibration:	999.997 to 1000.003 g.
Controls:	none.
Replicates:	none.
RE-WEIGH TOLERANCES:	
Zero:	−0.005 to +0.005 g.
Calibration:	999.995 to 1000.005 g.
Controls:	none.
Replicates:	none.
REFERENCE OBJECTS:	
Test 1—A reference object weighing about 400 g.	
Test 2—A reference object weighing about 200 g.	
Test 3—A reference object weighing about 700 g.	
QC FREQUENCIES:	
Zero Checks:	once per 8 samples.
Calibration Checks:	once per 24 samples.

Repeat weighings:	none (test method includes replicate determinations).
Control objects:	once per weighing session.

12.12 Data analysis and calculations

For Zero Checks, let Z equal the recorded Zero Check value. For control checks let T1, T2, etc. equal the recorded value for control object Test 1, Test 2, etc. For Calibration Checks, let C1000 equal C1000 reading minus 1000, $M = C500 - 500$, $S = .C.050 - C500 - .050$. For Replicate Checks, let D equal the loss that occurred between the first and second measurements. In summary:

$$T1 = T1$$

$$T2 = T2$$

$$T3 = T3$$

$$Z = ZC - 0$$

$$C = C1000 - 1000$$

$$M = C500 - 500$$

$$G = C050 - C500 - .050$$

Tabulate the mean and standard deviation for each of the following: Z, C, M, G, T1, T2, T3. Depending on the number of operators using the balance and the number of protocols in use, analyze the data by subcategories to determine the effects of balance operator and protocol. Each of these standard deviations, S_Z , S_C , etc. is an estimate of the precision of single weight measurement.

For Z, C, M, and G, check the mean value for statistical difference from 0. If the means are statistically different than zero, troubleshooting to eliminate bias may be called for. For Z, C, M, G, T1, T2, T3, check that the standard deviations are all comparable. If there are systematic differences, then troubleshooting to eliminate the problem may be called for.

Note that the precision of a weight gain, involves two weight determinations, and therefore is larger than S by a factor of $\sqrt{2}$. On the other hand replicate weighings improves the precision of the determinations by a factor of $\sqrt{N}$. If $N = 2$, i.e., duplicates, then the factors cancel each other.

To estimate the overall uncertainty in a weight determination, a conservative estimate might be to combine the imprecision contributed by the zero with the imprecision contributed by the calibration.

$$U = \sqrt{S_Z^2 + S_C^2}$$

The uncertainty in a weight gain from N replicates is then given by:

$$U_{\text{gain}} = \text{Sqrt}(2) \times \text{Sqrt}(S_Z^2 + S_C^2) / \text{Sqrt}(N)$$

But due to the balance adjustment and reweigh tolerances, we expect S_Z to approximately equal S_C , to approximately equal S_M , etc. tolerances, so that the equation above becomes:

$$U_{\text{gain}} = 2 \times S / \text{Sqrt}(N)$$

Where S is any individual standard deviation; or better, a pooled standard deviation.

12.13 *Method performance*

The data necessary to characterize the accuracy and precision of this method are still being collected. The method is used primarily to weigh objects before and after a period of soaking to determine weight loss by subtraction. Given the reweigh tolerances, we expect that the precision of weight gain determinations will be on the order of 0.006 g at the 1-sigma level. Bias in the weight gain determination, due to inaccuracy of the calibration weight and to fixed non-linearity of the balance response is on the order 0.005 percent of the gain.

12.14 *Pollution prevention*

When discharging half the can contents during can preparation, do not vent the contents of the small can to the atmosphere. Use an automotive recovery machine to transfer small can content to a recovery cylinder.

12.15 *Waste management*

Dispose of the contents of the recycle cylinder through a service that consolidates waste for shipment to EPA certified facilities for reclaiming or destruction.

Section 13. Compensation of Weight Data for Buoyancy and Gravity Effects

13.1 *Gravity*

Variations in gravity are important only when weighing objects under different gravitational fields, *i.e.*, at different locations or at different heights. Since the balance procedures calibrate the balance against a known mass (the calibration "weight") at the same location where sample objects are weighed, there is no need to correct for location. Although both the sample and the calibration weight are used at the same location, there will be a difference in the height of the center of gravity of the sample object (small can) and the center of gravity of the reference mass (calibration weight). However, this difference in height is maintained during both the initial weights and final weights, affecting the initial and final weights by the same amount, and affecting the scale of the weight difference by only a few ppm. In any event, the magnitude of this correction is on the order of 0.3 ug per kg per mm of height difference. A difference on the order of 100 mm would thus yield a weight difference of about 0.03 mg, which is insignificant compared to our balance resolution which is 0.001 g or 1 mg.

Based on the discussion above, no corrections for gravity are necessary when determining weight changes in small cans.

13.2 Buoyancy

Within a weighing session, the difference in density between the sample object and the calibration weight will cause the sample object weight value to differ from its mass value due to buoyancy. For a 1-liter object in air at 20 °C and at 1 atm, the buoyant force is about 1.2 g. The volume of a 1 kg object with a density of 8 g/cm³ (e.g., a calibration weight), is about 0.125 liters, and the buoyancy force is about 0.15 g. Variations in air density will affect both of these values in proportion. The net value being affected by variations in air density is thus on the order of 1.2 – 0.15 = 1.05 g. Air density can vary up or down by 2 percent or more due to variations in barometric pressure, temperature, and humidity. The buoyancy force will then vary up or down by 0.02 g, or 20 mg. This is significant compared to the weight change expected after one week for a can leaking at 3 grams per year, which is 57 mg.

Based on the discussion above, buoyancy corrections must be made.

Variables measured or calculated:

V_{can} = volume of can (cm³). Estimate to within 10 percent by measuring the can dimensions or by water displacement. Error in the can volume will cause an error in the absolute amount of the buoyancy force, but will have only a small effect on the change in buoyancy force from day to day.

W_{can} = nominal weight of a can (g), used to calculate the nominal density of the can.

ρ_{can} = nominal density of a small can (g/cm³). The nominal values can be applied to corrections for all cans. It is not necessary to calculate a more exact density for each can. Calculate once for a full can and once for a half full can as follows:

$$\rho_{\text{can}} = W_{\text{can}} / V_{\text{can}}$$

T = Temperature in balance chamber (degrees Celsius).

RH = Relative humidity in balance chamber (expressed a number between 0 and 100).

P_{baro} = Barometric pressure in balance chamber (millibar). Use actual pressure, NOT pressure adjusted to sea level.

ρ_{air} = density of air in the balance chamber (g/cm³). Calculate using the following approximation:

$$\rho_{\text{air}} = 0.001 * [0.348444 * P_{\text{baro}} - (RH/100) * (0.252 * T - 2.0582)] / (T + 273.15)$$

ρ_{ref} = the reference density of the calibration weight (g/cm³). Should be 8.0 g/cm³.

Equation to correct for buoyancy: $W_{\text{corrected}} = W_{\text{reading}} * (1 - \rho_{\text{air}} / \rho_{\text{ref}}) / (1 - \rho_{\text{air}} / \rho_{\text{can}})$

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Appendix B

Storage Vessel Parameter Summary Form

Storage Vessel Parameter Summary Form

*Some vessels will be limited by molecular weight in lieu of material type.

SN	Description	Maximum Pump Capacity (gal/min)	Allowable Material*	Minimum Allowable Molecular Weight* (lb/lbmol)
BR-08	Recycle HCl Storage Tank	75	Water/HCl	-
CB-04	MeOH Storage Tank	200	MeOH	-
DE-01	ADMA Brine or non-HAP VOC Storage Tank	180	ADMA Brine or Non-HAP VOC VP≤0.012 psia	157.3
AD-01	Olefins Storage Tank	100	-	168.30
AD-02	Olefins Storage Tank	100	-	168.30
AD-03	Alkyl Amines Storage Tank	100	-	157.30
AD-07	Alkyl Amine Rundown tank	20	-	157.30
AD-08	Alkyl Amine Rundown Tank	20	-	157.30
AD-09	Alkyl Amine Rundown Tank	20	-	157.30
AD-10	Alkyl Amine Storage Tank	100	-	157.30
AD-11	Alkyl Amine Storage Tank	100	-	157.30
AD-12	Alkyl Amine Storage Tank	100	-	157.30
AD-13	Alkyl Amine Storage Tank	100	-	157.30
AD-14	Alkyl Amine Storage Tank	100	-	157.30
AD-15	Alkyl Amine Storage Tank	100	-	157.30
AD-17	Alkyl Amine Storage Tank	100	-	157.30
AD-18	NaBr Recycle Tank	100	-	157.30
AD-20	Olefins Storage Tank	100	-	168.3
AD-21	Olefins Storage Tank	100	-	112.30
AD-23	Alkyl Amine Storage Tank	10	-	157.30
AD-24	Alkyl Amine Storage Tank	100	-	157.30
AD-25	Alkyl Amine Storage Tank	100	-	157.30
AD-27	Recycle Storage Tank	100	-	157.30
AD-28	Recycle Storage Tank	70	-	157.30

SN	Description	Maximum Pump Capacity (gal/min)	Allowable Material*	Minimum Allowable Molecular Weight* (lb/lbmol)
AD-29	Recycle Storage Tank	31	-	157.30
AD-29	ADMA Brine or non-HAP VOC Storage Tank (alt scenario)	31	ADMA Brine or Non-HAP VOC VP<0.012 psia	157.3
TB-11	ADMA Brine or non-HAP VOC Storage Tank	60	ADMA Brine or Non-HAP VOC VP<0.012 psia	157.3
AD-37	ADMA Condensate Collection Tank	20	-	157.30
AD-40	Mixed ADMA Final Product Storage	100	ADMA Product	157.3
AD-41	Mixed ADMA Final Product Storage	100	ADMA Product	157.3
DB-02	Raw Material Storage Tank	100	-	170.2
DB-07	Raw Material Storage Tank	100	-	170.20
TB-01	Alkyl Amines Storage Tank	100	ADMA Product	157.3
15-13	Weigh Tanks (D-9965, D-9966)	57	-	182
16-16	TBPA Neutralization Tank	606	Sulfuric Acid	-
16-17	Ethylene Glycol Tank	900	Ethylene Glycol/Water	-
16-28	TBPA Neutralization Tank	606	Sulfuric Acid	-
BT-01	Feed Brine Oil Separator/Surge Tank	10,200	Feed Brine	-
BT-11	Neutralization tank	10,600	Tail Brine	-
BT-13	Tail Brine Tank	10,600	Tail Brine	-
BT-17	Brinefield Oil Storage Tank	16.7	Crude Oil	-
DM-01	Ethylene Glycol Tank	30	Ethylene Glycol/Water	-
DM-03	Hydrogen Peroxide Tank 1	300	Hydrogen Peroxide/Water	-
DM-06	Hydrogen Peroxide Tank 2	300	Hydrogen Peroxide/Water	-