



**DIVISION OF ENVIRONMENTAL QUALITY**

**DRAFT OPERATING AIR PERMIT**

**PERMIT NUMBER:** 1177-AOP-R23

**IS ISSUED TO:**  
Bakelite Chemicals LLC  
124 Paper Mill Road  
Crossett, AR 71635  
Ashley County  
**AFIN:** 02-00028

PURSUANT TO THE RULES OF THE ARKANSAS OPERATING AIR PERMIT PROGRAM, RULE 26: 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:

June 28, 2022    AND    June 27, 2027

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

**Signed:**

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Demetria Kimbrough  
Deputy Director, Office of Air Quality  
Division of Environmental Quality

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Date

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Appendix A: 40 C.F.R. § 60 Subpart Dc – *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*

Appendix B: 40 C.F.R. § 60 Subpart IIII - *New Source Performance Standards for Stationary Compression Ignition Internal Combustion Engines*

Appendix C: 40 C.F.R. § 63 Subpart W – *National Emission Standards for Hazardous Air Pollutants for Epoxy Resins Production and Non - Nylon Polyamides Production*

Appendix D: 40 C.F.R. § 63 Subpart SS – *National Emission Standard for Closed Vent Systems, Control Devices, Recovery Devices and Routing to a Fuel Gas System or a Process*

Appendix E: 40 C.F.R. § 63 Subpart UU – *National Emission Standards for Equipment Leaks - Control Level 2 Standards*

Appendix F: 40 C.F.R. § 63 Subpart WW – *National Emission Standards for Storage Vessels (Tanks)- Control Level 2*

Appendix G: 40 C.F.R. § 63 Subpart OOO – *National Emission Standards for Hazardous Air Pollutants for Amino/Phenolic Resins Production*

Appendix H: 40 C.F.R. § 61 Subpart FF – *National Emission Standards for Benzene Waste Operations*

Appendix I: 40 C.F.R. § 63 Subpart ZZZZ – *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE)*

Appendix J: 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*

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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 <sub>x</sub>   | Nitrogen Oxide                                             |
| NSPS              | New Source Performance Standards                           |
| PM                | Particulate Matter                                         |
| PM <sub>10</sub>  | Particulate Matter Equal To Or Smaller Than Ten Microns    |
| PM <sub>2.5</sub> | Particulate Matter Equal To Or Smaller Than 2.5 Microns    |
| SNAP              | Significant New Alternatives Program (SNAP)                |
| SO <sub>2</sub>   | Sulfur Dioxide                                             |
| SSM               | Startup, Shutdown, and Malfunction Plan                    |
| Tpy               | Tons Per Year                                              |
| UTM               | Universal Transverse Mercator                              |
| VOC               | Volatile Organic Compound                                  |

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## **SECTION I: FACILITY INFORMATION**

PERMITTEE: Bakelite Chemicals LLC

AFIN: 02-00028

PERMIT NUMBER: 1177-AOP-R23

FACILITY ADDRESS: 124 Paper Mill Road  
Crossett, AR 71635

MAILING ADDRESS: 124 Paper Mill Road  
Crossett, AR 71635

COUNTY: Ashley County

CONTACT NAME: Everett Kelley

CONTACT POSITION: EHS Leader

TELEPHONE NUMBER: (870) 500-8356

REVIEWING ENGINEER: Alexander Sudibjo

UTM North South (Y): Zone 15: 3667113.99 m

UTM East West (X): Zone 15: 596457.63 m

## SECTION II: INTRODUCTION

### Summary of Permit Activity

Bakelite Chemicals LLC, operates a chemical manufacturing plant located at 124 Paper Mill Road, Crossett, Arkansas 71635. With this minor modification, the facility is installing a new 31.5 MMBtu/hr natural gas-fired boiler (SN-154) and Melamine Hopper (IA). The facility's permitted annual emissions are increasing by 1.1 tpy PM/PM<sub>10</sub>, 0.1 tpy SO<sub>2</sub>, 0.8 tpy VOC, 11.4 tpy CO, 13.6 tpy NO<sub>x</sub>, 0.01 tpy lead, 0.02 tpy formaldehyde, and 0.25 tpy total other HAPs.

### Process Description

The manufacturing complex of Bakelite Chemicals consists of three distinct operating plants which are listed below. The liquid resin manufacturing plant is made-up of several individual operations.

Liquid Resin Manufacturing Plant

PF Resin Manufacturing

UF Resin Manufacturing

Wet Strength Resin Manufacturing

Novacote Resin Manufacturing

Resi-Mix Resin Manufacturing

Spray Dry Resin Manufacturing

Urea Formaldehyde Concentrate (UFC) Manufacturing Plant

The Package Boiler (SN-153) and the Clayton Steam Generator Boiler (SN-154) are natural gas boilers that supply steam required for the Liquid Resin manufacturing plant, the Spray Dry manufacturing, and the Formaldehyde and Urea Formaldehyde concentrate (UFC) manufacturing plant at Bakelite Chemicals.

### Rules and Regulations

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

| Rules and Regulations                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------------|
| Arkansas Air Pollution Control Code, Rule 18, effective March 14, 2016                                                           |
| Rules of the Arkansas Plan of Implementation for Air Pollution Control, Rule 19, effective May 6, 2022                           |
| Rules of the Arkansas Operating Air Permit Program, Rule 26, effective March 14, 2016                                            |
| 40 C.F.R. § 52 Subpart E - <i>Approval and Promulgation of Implementation Plans - Arkansas</i>                                   |
| 40 C.F.R. § 60 Subpart Dc – <i>Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units</i> |

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| Rules and Regulations                                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 40 C.F.R. § 60 Subpart IIII - <i>New Source Performance Standards for Stationary Compression Ignition Internal Combustion Engines</i>                                                   |
| 40 C.F.R. § 63 Subpart W – <i>National Emission Standards for Hazardous Air Pollutants for Epoxy Resins Production and Non - Nylon Polyamides Production</i>                            |
| 40 C.F.R. § 63 Subpart SS – <i>National Emission Standard for Closed Vent Systems, Control Devices, Recovery Devices and Routing to a Fuel Gas System or a Process</i>                  |
| 40 C.F.R. § 63 Subpart UU – <i>National Emission Standards for Equipment Leaks - Control Level 2 Standards</i>                                                                          |
| 40 C.F.R. § 63 Subpart WW – <i>National Emission Standards for Storage Vessels (Tanks)- Control Level 2</i>                                                                             |
| 40 C.F.R. § 63 Subpart OOO – <i>National Emission Standards for Hazardous Air Pollutants for Amino/Phenolic Resins Production</i>                                                       |
| 40 C.F.R. § 61 Subpart FF – <i>National Emission Standards for Benzene Waste Operations</i>                                                                                             |
| 40 C.F.R. § 63 Subpart ZZZZ – <i>National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE)</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. § 64 <i>Compliance Assurance Monitoring</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             | Equipment Number | Description                                                   | Pollutant         | Emission Rates |          |
|                           |                  |                                                               |                   | lb/hr          | tpy      |
| Total Allowable Emissions |                  |                                                               | PM                | 28.7           | 78.9     |
|                           |                  |                                                               | PM <sub>10</sub>  | 17.5           | 62.9     |
|                           |                  |                                                               | PM <sub>2.5</sub> | *              | *        |
|                           |                  |                                                               | SO <sub>2</sub>   | 2.6            | 1.7      |
|                           |                  |                                                               | VOC               | 63.0           | 87.0     |
|                           |                  |                                                               | CO                | 22.2           | 69.0     |
|                           |                  |                                                               | NO <sub>x</sub>   | 33.4           | 44.3     |
|                           |                  |                                                               | Lead              | 0.02001        | 0.020048 |
| HAPs**                    |                  |                                                               | Chlorine          | 0.25           | 1.06     |
|                           |                  |                                                               | Formaldehyde      | 12.55          | 24.20    |
|                           |                  |                                                               | Hydrogen Chloride | 2.30           | 9.80     |
|                           |                  |                                                               | Mercury           | 4.09E-06       | 2.4E-05  |
|                           |                  |                                                               | Methanol          | 20.90          | 53.51    |
|                           |                  |                                                               | Phenol            | 7.18           | 5.69     |
|                           |                  |                                                               | POM               | 2.32E-06       | 1.01E-05 |
|                           |                  |                                                               | Chromium          | 3.68E-05       | 1.61E-04 |
|                           |                  |                                                               | Total Other HAP   | 9.43           | 10.02    |
| Air Contaminants ***      |                  |                                                               | Ammonia           | 10.16          | 9.83     |
| SN-03                     | BH-4             | Spray Dry Resin Process and Process Heater<br>(15.4 MMBTU/hr) | PM                | 11.5           | 50.4     |
|                           |                  |                                                               | PM <sub>10</sub>  | 11.6           | 50.8     |
|                           |                  |                                                               | SO <sub>2</sub>   | 0.1            | 0.1      |
|                           |                  |                                                               | VOC               | 12.3           | 53.8     |
|                           |                  |                                                               | CO                | 0.6            | 2.7      |
|                           |                  |                                                               | NO <sub>x</sub>   | 1.6            | 7.0      |
|                           |                  |                                                               | Lead              | 0.000008       | 0.00004  |
|                           |                  |                                                               | Ammonia           | 1.6            | 6.8      |
|                           |                  |                                                               | Formaldehyde      | 4.8            | 21.0     |
|                           |                  |                                                               | Mercury           | 0.000004       | 0.00002  |
|                           |                  |                                                               | Methanol          | 9.4            | 41.0     |
|                           |                  |                                                               | Phenol            | 1.0            | 4.0      |
|                           |                  |                                                               | Other HAPs        | 1.5            | 6.6      |
| SN-11                     | OX-2             | RCI UFC                                                       | PM                | 0.1            | 0.2      |
|                           |                  | Manufacturing Process                                         | PM <sub>10</sub>  | 0.1            | 0.2      |
|                           |                  | Regenerative Thermal                                          | SO <sub>2</sub>   | 0.1            | 0.1      |



| EMISSION SUMMARY |                  |                                              |                   |                |          |
|------------------|------------------|----------------------------------------------|-------------------|----------------|----------|
| Source Number    | Equipment Number | Description                                  | Pollutant         | Emission Rates |          |
|                  |                  |                                              |                   | lb/hr          | tpy      |
|                  |                  | Oxidizer (3.3 MMBTU/hr)                      | VOC               | 3.5            | 15.3     |
|                  |                  |                                              | CO                | 9.4            | 41.1     |
|                  |                  |                                              | NO <sub>x</sub>   | 0.5            | 2.0      |
|                  |                  |                                              | Lead              | 0.000002       | 0.000008 |
|                  |                  |                                              | Formaldehyde      | 0.2            | 0.9      |
|                  |                  |                                              | Hydrogen Chloride | 2.3            | 9.8      |
|                  |                  |                                              | Mercury           | 9.0E-08        | 4.0E-06  |
|                  |                  |                                              | Methanol          | 1.8            | 7.9      |
|                  |                  |                                              | Phenol            | 0.1            | 0.1      |
|                  |                  |                                              | Other HAPs        | 0.2            | 0.5      |
| SN-17            | NC-1             | Novacote Resin Storage Tank (32,130 gal)     | Ammonia           | 3.4            | 0.6      |
| SN-61            | P-7              | Cresylic Acid Storage Tank (20,304 gal)      | VOC               | 0.4            | 0.1      |
|                  |                  |                                              | Other HAPs        | 0.05           | 0.01     |
| SN-62            | M-8              | Phenol Storage Tank 133,501 gal              | VOC               | 2.7            | 0.2      |
|                  |                  |                                              | Phenol            | 2.7            | 0.2      |
| SN-95            | W-3              | Process Weigh Tank - 9,710 gal               | VOC               | 0.3            | 0.3      |
|                  |                  |                                              | Ammonia           | 1.7            | 1.7      |
|                  |                  |                                              | Formaldehyde      | 0.06           | 0.06     |
|                  |                  |                                              | Methanol          | 0.18           | 0.18     |
|                  |                  |                                              | Phenol            | 0.04           | 0.04     |
| SN-103           | NC-2             | Novacote Resin Storage Tank 32,130 gal       | Ammonia           | 3.4            | 0.6      |
| SN-104           | SD-1             | Liquid Base Resin Storage Tank - 24,537 gal  | VOC               | 0.1            | 0.1      |
|                  |                  |                                              | Formaldehyde      | 0.01           | 0.01     |
|                  |                  |                                              | Methanol          | 0.05           | 0.04     |
|                  |                  |                                              | Phenol            | 0.01           | 0.01     |
| SN-105           | SD-2             | Liquid Base Resin Storage Tank - 24,537 gal  | VOC               | 0.1            | 0.1      |
|                  |                  |                                              | Formaldehyde      | 0.01           | 0.01     |
|                  |                  |                                              | Methanol          | 0.03           | 0.04     |
|                  |                  |                                              | Phenol            | 0.01           | 0.01     |
| SN-111           | T-56             | Wet Crude Tall Oil Storage Tank (27,500 gal) | VOC               | 4.4            | 0.5      |
| SN-125           | Formic           | Formic Acid Storage Tank 10,000 gal          | VOC               | 4.5            | 0.1      |
| SN-132           | WSLOAD1          | Wet Strength Resin Loading Rack              | VOC               | 0.2            | 0.4      |
| SN-133           | WSLOAD2          | Wet Strength Resin Loading Rack              | VOC               | 0.2            | 0.4      |

| EMISSION SUMMARY |                  |                                           |                  |                |      |
|------------------|------------------|-------------------------------------------|------------------|----------------|------|
| Source Number    | Equipment Number | Description                               | Pollutant        | Emission Rates |      |
|                  |                  |                                           |                  | lb/hr          | tpy  |
| SN-134           | --               | Wastewater Collection & Transfer System   | VOC              | 5.5            | 3.2  |
|                  |                  |                                           | Ammonia          | 0.04           | 0.11 |
|                  |                  |                                           | Formaldehyde     | 0.40           | 0.51 |
|                  |                  |                                           | Methanol         | 4.98           | 2.2  |
|                  |                  |                                           | Phenol           | 0.01           | 0.01 |
| SN-135           | M-14             | Aqua Ammonia Storage Tank                 | Ammonia          | 0.01           | 0.01 |
| SN-136           | --               | Crude Tall Oil, Novacote Loading Stations | VOC              | 1.0            | 1.0  |
|                  |                  |                                           | Ammonia          | 0.01           | 0.01 |
| SN-138           | --               | Resin Loading Stations                    | VOC              | 0.2            | 0.8  |
|                  |                  |                                           | Formaldehyde     | 0.01           | 0.02 |
|                  |                  |                                           | Methanol         | 0.03           | 0.10 |
|                  |                  |                                           | Phenol           | 0.20           | 0.60 |
| SN-140           | GEN-2            | Emergency Generator Diesel Fired          | PM               | 0.4            | 0.3  |
|                  |                  |                                           | PM <sub>10</sub> | 0.3            | 0.3  |
|                  |                  |                                           | SO <sub>2</sub>  | 1.1            | 0.9  |
|                  |                  |                                           | VOC              | 0.6            | 0.4  |
|                  |                  |                                           | CO               | 4.2            | 3.2  |
|                  |                  |                                           | NO <sub>x</sub>  | 18.2           | 13.6 |
|                  |                  |                                           | Formaldehyde     | 0.01           | 0.01 |
| SN-142           | --               | West Cooling Tower                        | Total Other HAP  | 0.01           | 0.01 |
|                  |                  |                                           | PM               | 0.8            | 3.4  |
|                  |                  |                                           | PM <sub>10</sub> | 0.8            | 3.4  |
|                  |                  |                                           | VOC              | 0.1            | 0.5  |
|                  |                  |                                           | Chlorine         | 0.17           | 0.74 |
| SN-143           | --               | East Cooling Tower                        | Total Other HAP  | 0.1            | 0.45 |
|                  |                  |                                           | PM               | 0.4            | 1.5  |
|                  |                  |                                           | PM <sub>10</sub> | 0.4            | 1.5  |
|                  |                  |                                           | VOC              | 0.1            | 0.3  |
|                  |                  |                                           | Chlorine         | 0.08           | 0.32 |
| SN-145           | --               | Haul Roads                                | Total Other HAP  | 0.07           | 0.28 |
|                  |                  |                                           | PM               | 14.3           | 20.8 |
| SN-146           | --               | Equipment Leaks Fugitive Emissions        | PM <sub>10</sub> | 3.1            | 4.4  |
|                  |                  |                                           | VOC              | 21.7           | 5.0  |
|                  |                  |                                           | Formaldehyde     | 7.0            | 1.6  |
|                  |                  |                                           | Methanol         | 4.2            | 1.0  |
|                  |                  |                                           | Phenol           | 3.1            | 0.7  |
|                  |                  |                                           | Total Other HAP  | 7.37           | 1.68 |

| EMISSION SUMMARY           |                  |                                               |                                           |                             |                             |
|----------------------------|------------------|-----------------------------------------------|-------------------------------------------|-----------------------------|-----------------------------|
| Source Number              | Equipment Number | Description                                   | Pollutant                                 | Emission Rates              |                             |
|                            |                  |                                               |                                           | lb/hr                       | tpy                         |
| Liquid Resin Storage Tanks |                  |                                               |                                           |                             |                             |
| SN-21                      | WS-4             | Wet Strength Resin Storage Tank<br>30,932 gal | VOC<br>Formaldehyde<br>Methanol<br>Phenol | 0.3<br>0.01<br>0.23<br>0.01 | 1.1<br>0.03<br>1.05<br>0.02 |
| SN-22                      | WS-5             | Wet Strength Resin Storage Tank<br>30,932 gal |                                           |                             |                             |
| SN-23                      | DS-1             | Wet Strength Resin Storage Tank<br>30,932 gal |                                           |                             |                             |
| SN-30                      | P-11             | PF Resin Storage Tank<br>21,138 gal           |                                           |                             |                             |
| SN-31                      | RM-7             | Resin Storage Tank<br>31,285 gal              |                                           |                             |                             |
| SN-66                      | P-1              | PF Resin Storage Tank<br>14,680 gal           |                                           |                             |                             |
| SN-67                      | P-2              | PF Resin Storage Tank<br>17,650 gal           |                                           |                             |                             |
| SN-68                      | P-3              | PF Resin Storage Tank<br>14,680 gal           |                                           |                             |                             |
| SN-69                      | P-5              | PF Resin Storage Tank<br>14,680 gal           |                                           |                             |                             |
| SN-73                      | P-9              | PF Resin Storage Tank<br>21,138 gal           |                                           |                             |                             |
| SN-74                      | P-10             | PF Resin Storage Tank<br>21,138 gal           |                                           |                             |                             |
| SN-77                      | RM-2             | Resin Storage Tank<br>31,285 gal              |                                           |                             |                             |
| SN-78                      | RM-3             | Resin Storage Tank<br>31,285 gal              |                                           |                             |                             |
| SN-79                      | RM-4             | Resin Storage Tank<br>31,285 gal              |                                           |                             |                             |
| SN-80                      | RM-5             | Resin Storage Tank<br>31,285 gal              |                                           |                             |                             |
| SN-81                      | RM-6             | Resin Storage Tank<br>31,285 gal              |                                           |                             |                             |
| SN-86                      | U-5              | PF/UF Resin Storage                           |                                           |                             |                             |

| EMISSION SUMMARY |                  |                                                  |                  |                |      |
|------------------|------------------|--------------------------------------------------|------------------|----------------|------|
| Source Number    | Equipment Number | Description                                      | Pollutant        | Emission Rates |      |
|                  |                  |                                                  |                  | lb/hr          | tpy  |
| SN-87            | U-6              | PF/UF Resin Storage                              |                  |                |      |
| SN-90            | U-9              | UF Resin Storage Tank<br>25,366 gal              |                  |                |      |
| SN-91            | U-10             | UF Resin Storage Tank<br>25,366 gal              |                  |                |      |
| SN-97            | WS-1             | Wet Strength Resin<br>Storage Tank<br>30,000 gal |                  |                |      |
| SN-98            | WS-2             | Wet Strength Resin<br>Storage Tank<br>30,000 gal |                  |                |      |
| SN-99            | WS-3             | Wet Strength Resin<br>Storage Tank<br>30,000 gal |                  |                |      |
| SN-100           | WS-6             | Wet Strength Resin<br>Storage Tank<br>30,932 gal |                  |                |      |
| SN-102           | WS-7             | Wet Strength Resin<br>Storage Tank<br>30,932 gal |                  |                |      |
| SN-149           | GEN-3            | 260 hp Firepump<br>Engine                        | PM               | 0.1            | 0.1  |
|                  |                  |                                                  | PM <sub>10</sub> | 0.1            | 0.1  |
|                  |                  |                                                  | SO <sub>2</sub>  | 0.6            | 0.2  |
|                  |                  |                                                  | VOC              | 0.7            | 0.2  |
|                  |                  |                                                  | CO               | 1.5            | 0.5  |
|                  |                  |                                                  | NO <sub>x</sub>  | 1.4            | 0.5  |
|                  |                  |                                                  | Formaldehyde     | 0.01           | 0.01 |
|                  |                  |                                                  | Total Other HAP  | 0.01           | 0.01 |
| SN-150           | GEN-4            | 231 hp Firepump<br>Engine                        | PM               | 0.6            | 0.2  |
|                  |                  |                                                  | PM <sub>10</sub> | 0.6            | 0.2  |
|                  |                  |                                                  | SO <sub>2</sub>  | 0.5            | 0.2  |
|                  |                  |                                                  | VOC              | 0.6            | 0.2  |
|                  |                  |                                                  | CO               | 1.6            | 0.4  |
|                  |                  |                                                  | NO <sub>x</sub>  | 7.2            | 1.8  |
|                  |                  |                                                  | Formaldehyde     | 0.01           | 0.01 |
|                  |                  |                                                  | Total Other HAP  | 0.01           | 0.01 |
| SN-151           | T-4              | Crude Tall Oil Storage<br>Tank, 153,330 gal      | VOC              | 3.1            | 1.5  |
| SN-153           |                  | Package Boiler                                   | PM               | 0.2            | 0.9  |

| EMISSION SUMMARY |                  |                                                             |                  |                |      |
|------------------|------------------|-------------------------------------------------------------|------------------|----------------|------|
| Source Number    | Equipment Number | Description                                                 | Pollutant        | Emission Rates |      |
|                  |                  |                                                             |                  | lb/hr          | tpy  |
|                  |                  |                                                             | PM <sub>10</sub> | 0.2            | 0.9  |
|                  |                  |                                                             | SO <sub>2</sub>  | 0.1            | 0.1  |
|                  |                  |                                                             | VOC              | 0.2            | 0.7  |
|                  |                  |                                                             | CO               | 2.3            | 9.7  |
|                  |                  |                                                             | NO <sub>x</sub>  | 1.4            | 5.8  |
|                  |                  |                                                             | Lead             | 0.01           | 0.01 |
|                  |                  |                                                             | Formaldehyde     | 0.01           | 0.01 |
|                  |                  |                                                             | POM              | 0.001          | 0.01 |
|                  |                  |                                                             | Chromium         | 0.01           | 0.01 |
|                  |                  |                                                             | Total Other HAPs | 0.05           | 0.22 |
| SN-154           |                  | Clayton Steam Generator Boiler (31.5 MMBtu/hr, Natural Gas) | PM               | 0.3            | 1.1  |
|                  |                  |                                                             | PM <sub>10</sub> | 0.3            | 1.1  |
|                  |                  |                                                             | SO <sub>2</sub>  | 0.1            | 0.1  |
|                  |                  |                                                             | VOC              | 0.2            | 0.8  |
|                  |                  |                                                             | CO               | 2.6            | 11.4 |
|                  |                  |                                                             | NO <sub>x</sub>  | 3.1            | 13.6 |
|                  |                  |                                                             | Lead             | 0.01           | 0.01 |
|                  |                  |                                                             | Formaldehyde     | 0.01           | 0.02 |
|                  |                  |                                                             | POM              | 0.01           | 0.01 |
|                  |                  |                                                             | Chromium         | 0.01           | 0.01 |
|                  |                  |                                                             | Total Other HAPs | 0.06           | 0.25 |

\*PM<sub>2.5</sub> limits are source specific, if required. Not all sources have PM<sub>2.5</sub> limits.

\*\*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.

### SECTION III: PERMIT HISTORY

Georgia-Pacific LLC owns and operates several different types of industrial plants in Crossett, Arkansas. The construction of the Chemical Manufacturing Complex was begun in 1969 and has been expanded in several stages since that time. The facility was known as the Chemical Division of the Georgia-Pacific Corporation, Inc. until 1992 when the name was changed to Georgia-Pacific Resins, Inc. and changed to Georgia-Pacific Chemical LLC. December 31, 2006. The facility's first air permit (**574-A**) was issued October 1979 for the construction of a Tall Oil Plant and the emission of small amounts of particulates, NO<sub>x</sub>, and hydrocarbons, as well as 57 pounds per hour of SO<sub>2</sub>.

**Air Permit 574-AR-1** was issued July 22, 1983, to cover the construction of a Spray-Dry Resin Plant. The increased emissions associated with this project were particulate matter, SO<sub>2</sub>, VOCs, phenol, and formaldehyde. This permit addressed the reasons the modification was not subject to PSD review.

**Air Permit 574-AR-2** was issued August 28, 1987, to cover the boiler upgrade at the Resin Manufacturing Plant. A 17 MM BTU/hr boiler was replaced by a 94.1 MM Btu/hr boiler. The smaller boiler was put on stand-by status, to be used when the new boiler was shut down for maintenance. The smaller boiler (SN-04) was removed from service August 22, 1995. The larger boiler is now known as the Complex Boiler (SN-05). This permit addressed the reasons the modification was not subject to PSD review.

**Air Permit 1059-A** was issued July 5, 1990, to cover the expansion of operations at the Resin Manufacturing Plant. A new process receives rosin acid from the Tall Oil Plant and esterifies it with glycerol or pentaerythritol to form rosin esters. The summary stated that this permit is only for this modification and will be superseded and voided when the next consolidated permit is issued.

**Air Permit 1177-A** was issued September 11, 1991, to install two incinerators to control VOC emissions from the RCI Plant, the ICI Plant, and the Resin Plant. The control equipment associated with the RCI Plant and the ICI Plant was regulated under New Source Performance Standards (NSPS) CFR 40 Part 60, Subpart VV - *Standards of Performance for Equipment of VOC in the Synthetic Chemicals Manufacturing Industry*. This air permit voided permits 574-AR-2 and 1059-A.

**Air Permit 1177-AR-1** was issued March 19, 1992, to allow the installation of three additional storage tanks and the modification of one existing storage tank previously used to store methanol. Two tanks were designated as tall oil fatty acid tanks, one for crude tall oil, and one as a surface size tank. All the tanks were regulated by New Source Performance Standards (NSPS) CFR 40 Part 60, Subpart Kb - *Standards of Performance for Volatile Organic Liquid Storage Vessels* specifically, 40 CFR 60.116b(a) and 40 CFR 60.116b(b).

**Air Permit 1177-AR-2** was issued September 28, 1992, to allow the installation of six additional storage tanks and two baghouses. The tanks were installed in the Tall Oil Plant and the Resin

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Plant (SN-20 through SN-25). The baghouses were installed on the Resi-Mix Reactor (SN-18) and the Novacote Hopper (SN-19). These tanks were also subject to New Source Performance Standards (NSPS) CFR 40 Part 60, Subpart Kb - *Standards of Performance for Volatile Organic Liquid Storage Vessels*. This permit also noted the name change from Georgia-Pacific Corporation, Inc., Chemical Division to Georgia-Pacific Resins, Inc.

**Air Permit 1177-AR-3** was issued September 10, 1993, to allow for the installation of four new tanks; a dispersed size storage tank (SN-26), two dispersed size release tanks (SN-27 and SN-28), and a rosin size disperser vessel (SN-29). Only the storage tank was subject to NSPS Subpart Kb.

**Air Permit 1177-AR-4** was issued January 3, 1994, to allow the replacement of a catalytic incinerator with a thermal incinerator (SN-11). The permit also said that the facility was subject to New Source Performance Standards (NSPS) CFR 40 Part 60, Subpart VV - *Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry*.

**Air Permit 1177-AR-5** was issued April 12, 1996, with 29 new source numbers (SN-30 through SN-58). The permit modification was issued to cover the installation of a new VOC control system which includes a caustic scrubber, followed by a chilled water condenser, and finally the existing complex boiler (SN-05). This system serves the Tall Oil Fractionation Plant, the Rosin Size Plant, and the Rosin Derivatives Plant. The Tall Oil Fractionation Plant increased production capacity from 73,000 tons to 140,000 tons of crude tall oil per year, installed five new product storage tanks, a rosin drumming tank, a rosin drumming station, and replaced the Dow-Therm heater. The Rosin Size Plant replaced the condenser with a VOC control system. The Rosin Derivatives Plant replaced the two stage condenser with a new VOC control system. The Crude Tall Oil Plant replaced the wet scrubber with a high-efficiency packed column scrubber. The permit stated that the facility was subject to NESHAP 40 CFR Part 63, Subpart G and Subpart H. The permit also stated that the facility was not subject to NSPS 40 CFR 60, Subpart VV or Subpart RRR due to the fact that the formaldehyde plants have not been modified since they were originally constructed.

**Air Permit 1177-AOP-R0** was issued August 13, 2001, and it is the initial Title V permit for the facility. This permit incorporated the following changes to the facility:

The Complex Boiler SN-05 is allowed to burn the Resin Kettle Overheads (RKO) in addition to its other fuels. Georgia-Pacific Resins requested a modification to produce a rosin product which could cause iodine to be emitted from the Complex Boiler, SN-05. A three-stage alkaline scrubber was installed to remove the iodine from the vent gas stream prior to being sent to the complex boiler for destruction;

Another change allowed the production of a pastille rosin which would cause maleic anhydride to be emitted from SN-09, the Derivatives Plant Flaker Bagging Station. Two storage tanks SN-41 and SN-42 were added to store Dispro rosin and distilled tall oil respectively. These tanks used the source numbers for two tanks which were removed. A 13,000 gallon Novacote Size

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Storage Tank, SN-124; and a 10,000 Formic Acid Storage Tank, SN-125 were also added. The modification which included the Formic Acid Storage Tank also included a 10,000 gal sulfuric acid storage tank which is added to the insignificant activities list. An 80 MMBTU/hr Package Boiler, SN-130, was also added in a modification. These changes were all processed as modifications to the facility's previous SIP permit and were all incorporated into this Title V permit; and

These changes included the addition of a sixth batch liquid resin manufacturing kettle (K-7) to be controlled by SN-11, the RCI oxidizer, the addition of six Urea-Formaldehyde Resin product storage tanks SN-85, 88, 91, 92, 93, and 94, and the addition of two wet strength resin storage tanks, SN-101 and 102. Other changes from Georgia Pacific's previous permit include adding a pre-polymer storage tank (M-17) and increasing the production of liquid resin to 337 MM pounds per year and increasing the Derivatives Plant production to 7.5 MM pounds per year. There are also 55 sources which were previously considered insignificant which were added to this permit.

**Air Permit 1177-AOP-R1** was issued on February 21, 2003. The facility requested to increase the hourly VOC emission rate to 3.0 lb/hr batch average and reduce the hours of operation to 4,400 hr/year for the CTO cooker (SN-12). The facility did not increase the annual VOC emissions at SN-12. GPRI also requested to construct an 835,000 gallon tank (SN-40) to store crude tall oil (CTO). The emissions from SN-40 were 0.1 lb/hr and 0.4 tpy of VOC. The semiannual reporting requirements were removed from Specific Conditions 5, 36, and 105.

**Air Permit 1177-AOP-R2** was issued on September 12, 2003. GPRI submitted applications requesting the following:

- a. Included the production of Phenolic Rosin Resin (PRR);
- b. To allow a change in service for the storage tank SN-17 and weight tank W-3 (SN-95); and
- c. Allow GPRI to use Method 320 in lieu of Method 18; and
- d. Install a new loading rack (SN-133), a new 30,000 gal urea solution storage tank, two new 30,000 gal wet strength resin (WSR) tanks (SN-101 and SN-102), and a 7,343 gal wet strength resin and urea dilute tank.
- e. The change resulted in an increase of VOC by 1.2 tpy and HAPs by 0.044 tpy.

**Air Permit 1177-AOP-R3** was issued on December 5, 2003, to allow products from the CTO to be produced in shorter batch times. As a result of shorter batch times, the hourly VOC limit for the CTO Acidulation Scrubber (SN-12) was increased to 5.0 lb/hr. The hours of operation for SN-12 were reduced to 2,640 hours/yr in order to maintain the current annual limit of 6.6 tpy. GPRI also requested to add a 20,000 Phenol Distillate Storage Tank (PD-1). PD-1 is considered an insignificant activity since VOC emissions from PD-1 are less than 2.81 lb/yr.

**Air Permit 1177-AOP-R4** was issued on June 21, 2004, to allow SCRUB-2B to operate with additional modes of operation for processing gas fed to the VOC control system. The initial purpose of SCRUB-2B was to condense steam and remove iodides generated during Lytor production. It now also reduces the concentration of formaldehyde, from DUF 70 production.



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SCRUB-2B was modified such that only stage 1 operates during the production of DUF 70. However, during Lytor operation or operation resulting in a halogenated waste gas, SCRUB-2B will continue to operate all three stages in accordance with Specific Condition #6. The water from SCRUB-2B will be sent to an oil/water separator and the facility's waste water collection area (SN-134). GPRI also changed service for an existing 15,000 gallon tank, SN-70, to be used to store Nonylphenol.

**Air Permit 1177-AOP-R5** was issued on October 27, 2004, to allow an increase in production of a resin, LYTOR® 105K to 100 batches per year. The gas from the production of LYTOR® 105K is sent to the Complex Boiler (SN-05) to be combusted. GPRI also requested the hourly permitted iodine limit for SN-05 to be a batch average and to include Total Iodine compounds. As a result of the increased production of the resin, total iodine emissions from SN-05 increased by 0.47 lb/hr (batch average) and 2.0 tpy.

**Air Permit 1177-AOP-R6** was issued on May 5, 2005, to allow a change in service for two storage tanks (SN-17 and SN-60). DETA resin was stored in SN-17 was replaced by another resin, Novacote. The two resins, on a VOC emission rate basis, are equivalent. Cresylic Acid stored in SN-60 was replaced by Secondary Butylphenols. The two organic compounds, on a VOC as well as HAP emission rate basis, are equivalent. VOC emissions from each tank are 0.1 lb/hr and 0.4 tpy. GPRI also requested to re-melt and fuel blend old rosin material from a current stockpile and sample rosin generated on a daily basis. The fuel blend is combusted in the Complex Boiler (SN-05). Combustion of the fuel blend is considered to be an insignificant activity. Lastly, the requirement that a six hour period must elapse between start up of LYTOR® 105K batches was removed because batch times are at least 12 hours and there is only one reaction vessel used for production of the resin. As a result of the requested change permitted Phenol emissions increased by 0.10 lb/hr and 0.40 tpy.

**Air Permit 1177-AOP-R7** was issued on April 3, 2006 to increase annual production of LYTOR® 105K (SN-05 & SN-129) from 100 batches per year to 150 batches per year as referenced in Plantwide Condition #13. With this increase in production of LYTOR® 105K, batch average emissions did not change, however the Iodine annual emissions increased by 1.25 tons/year

**Air Permit 1177-AOP-R8** was issued February 5, 2008. This modification was submitted to renew the facility existing permit. Subsequently, additional applications were submitted requesting the following modifications to the existing permit:

- a. The addition of a stand-by railcar containing approximately 180,000 lbs of diethylenetriamine (DETA) to the insignificant activity list.
- b. The temporary storage of Phenol in Storage Tank M-5 (SN-60) and Storage Tank M-6 (Insignificant Activity).
- c. The temporary storage of Cresylic Acid / Secondary Butylphenol in Storage Tank SN-61.
- d. The temporary removal from service of the Phenol Storage Tank (SN-62) for repairs. However, the tank remained in the permit as a permitted source.

- e. The addition of a new emulsifier soap formulation on the facility's spray dry system (SN-03).
- f. The installation of a new Hot Melt Holding Tank (SN-126).
- g. The removal of the Package Boiler (SN-130).
- h. The removal of storage tank T-34 (SN-106).
- i. The addition of A-13 Insignificant Activities to TOFRAC plant: new column (DT-1); XTOL Light Distilled Heads Storage Tank T-73 and Test Tank T-74. These two tanks replaced SN-106.
- j. The facility name changed from Georgia-Pacific Resins, Inc. to Georgia Pacific Chemicals LLC, effective December 31, 2006.
- k. The addition of 40 CFR 61, Subpart FF (the BENWASTE rule) as an applicable regulation. The only requirement for the facility is to submit an initial report quantifying the TAB amount and must recalculate TAB only if it changes its process in a way that could cause the TAB amount to exceed 1 Mg/year. The initial report was due in April 1993, however after reviewing internal files, the facility did not find a copy of any report submitted to the Department in 1993. A report was submitted in November 2006 to update the Department's files.
- l. Other changes in permitted emissions were due to updated AP-42 factors. The existing SO<sub>2</sub> permitted emission rates for SN-05 were incorrectly calculated in the original Title V application. Therefore SN-05 emission rates were changed to the correct emission rates. There were no physical changes and/or change in operation associated with the permitted emission changes at SN-05. With the changes identified above permitted PM/PM<sub>10</sub>, VOC, CO, NO<sub>x</sub>, Maleic Anhydride, and Phenol decreased by 61.3 tons/year (tpy), 4.3 tpy, 25.7 tpy, 31.6 tpy, 2.1 tpy, and 2.6 tpy, respectively. Permitted SO<sub>2</sub>, Total Iodine, Formaldehyde, Methanol, Arsenic Compounds, Lead Compounds, Cadmium, Manganese Chromium, and Ammonia increased by 45.9 tpy, 01.25 tpy, 0.70 tpy, 10.6 tpy, 0.40 tpy, 0.40 tpy, 0.40 tpy, 1.05 tpy, 0.40 tpy, and 2.00 tpy, respectively.

**Air Permit # 1177-AOP-R9** was issued on February 10, 2009. The modification included the following changes:

- a. The replacement of the Tall Oil Fatty Storage Tank (SN-14) with a larger vessel.
- b. The replacement of Hot Melt Holding Tank (SN-123) with a larger vessel.
- c. A footnote addition to the emission rate table for SN-14, SN-15, SN-46, SN-48, SN-49, SN-57, and SN-58 to clarify that the VOC hourly emission rate (0.1 lb/hr) represented the average hourly emission and 0.14 lb/hr represented the short term hourly maximum emission limit. However, the facility accepted a VOC emission limit for each source of 0.2 lb/hr to ensure compliance can be maintained at all times.
- d. The addition of a new group of spray dried resins which contain ammonia at the spray dry process (SN-03).
- e. The reclassification of Aqua Ammonia Tank (SN-135) as a permitted source rather than an insignificant activity.
- f. Administrative amendments to the facility's insignificant activity list. The update was necessary to reflect several tanks that were taken out of service and activities that no longer occur. In addition, some of the group classifications were corrected.

- g. The revision of the language in Specific Condition #62 of Air Permit #1175-AOP-R8 to reflect calculation methodology that was consistent with the permit application and AP-42 Chapter 7.1.
- h. With these modifications permitted Ammonia emissions increased by 14.04 tpy.

**Air Permit # 1177-AOP-R10** was issued on April 9, 2010. The modification included the following changes:

- a. On May 12, 2008, the Department received an application for a modification that requested the following changes:
- b. Incorporated the provisions of 40 CFR 63, Subpart FFFF, *National Emission Standards for Hazardous Air Pollutants for Miscellaneous Organic Chemical Manufacturing (MON)*.
- c. The reclassification of the Crude Tall Oil, Novacote, Formaldehyde/Urea Formaldehyde Concentrate (UFC), Resin and Tall Oil Products Loading Stations (SN-136, SN-137, SN-138, and SN-139) from insignificant activities to permitted sources.
- d. Incorporated minor permit revisions and typographical errors.
- e. On August 18, 2008, the facility submitted an application for an administrative amendment to the facility's insignificant activity list. The update was necessary to include two Urea Formaldehyde Resins Storage Tanks (SN-86 and SN-87).
- f. On October 15, 2008, the Department received an application for an administrative amendment to correct the description for the storage tank identified as RM-1 (SN-76) to reflect current usage for dilute caustic storage in accordance with Group A-4.
- g. On November 13, 2008, the Department received an application for a minor modification application requesting the following modifications:
- h. The installation of an overhead condenser and vacuum pump system to the facility's rosin size cooker/reactor (C-1).
- i. The increase of the production limit for rosin derivatives by 20,000,000 pounds/year while reducing the rosin size production rate by 20,000,000 pounds/year.
- j. On December 15, 2008, the Department received an application for a minor modification application requesting to add three urea formaldehyde Resin storage tanks (SN-85, SN-88 and SN-89) and a back-up emergency generator (SN-140).
- k. On June 9, 2009, the Department received an application for an administrative amendment to the insignificant activity list. The revision was necessary to allow for the addition of a portable diesel fired air compressor.
- l. On June 26, 2009, the Department received an application for an administrative amendment to the facility's insignificant activity list. The modification was necessary to allow two 7,200 gallon epichlorohydrin tank truck trailers to remain onsite. Also, the facility submitted a minor modification application requesting the following modification:
- m. Removal of Reactors R-1 and R-2 (SN-29), Casein Mix Tanks; CT-61 and CT-62 (Insignificant Activities).
- n. Discontinued the use of Release Tanks RT-2 (SN-28) and RT-3 (SN-116), Storage Tanks T-60 (SN-117) and T-63 (SN-25) and the Brine Storage Tank T-86 (Insignificant Activity).
- o. Reclassified tanks T-61 (SN-118) and T-62 (SN-26) as deaerator product storage.

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- p. Reclassified tank T-59 (SN-119) as storage for Crude Tall Oil (CTO).
- q. With these modifications permitted VOC emissions decreased by 1.1 tons per year (tpy). Permitted PM/PM<sub>10</sub>, SO<sub>2</sub>, CO, & NO<sub>x</sub> emissions increased by 1.3 tpy, 1.2 tpy, 3.8 tpy, and 17.6 tpy, respectively. Methanol and formaldehyde permitted emission increased by 0.4 tpy each, and ammonia emissions increased by 1.6 tpy.

**Air Permit # 1177-AOP-R11** was issued on May 27, 2011. This modification was to revise the emission limitations associated with managing wastewater generated at this facility and the Spray Dryer Process (SN-03). This modification did not involve the addition of any new equipment or physical changes to the wastewater collection and transfer system or the Spray Dryer Process.

Based on sampling data and updated emission calculations, GP believed that the emission limits associated with the entire waste water collection and transfer system were insufficient (#1177-AOP-R10). Using updated analytical information, and an established EPA method for estimating fugitive emission from liquid-pool evaporation, GP updated the emission estimates for the facility's wastewater collection and transfer system (SN-134).

The facility completed voluntary engineering tests to compare Method 320 (FTIR) and Method 25A(FID), the current compliance test methodology, on the Spray Dry Baghouse (SN-03). Based on the comparative study, the facility proposed to use the FTIR to establish a new emission limit for the spray dryer. The modified permitted emission limit for SN-03 increased based on tests using Method 320.

This modification also incorporated a change to Resin Plant Back-up Weigh Tank, SN-95, allowing throughput of non-HAP/VOC materials while also allowing finished products to be staged or temporarily stored.

Total facility permitted emissions changed as follows:

| Pollutant      | tpy    |
|----------------|--------|
| VOC            | +92.6  |
| Formaldehyde   | +6.05  |
| Methanol       | +73.80 |
| Ammonia        | +0.50  |
| Acetaldehyde   | +10.25 |
| Benzene        | +0.10  |
| Dimethyl Ether | +2.45  |
| Toluene        | +0.20  |

**Air Permit # 1177-AOP-R12** was issued on July 15, 2011. This modification was to add a one thousand gallon ethylene glycol tank to the A-13 insignificant activities list. Permitted emission limits remained unchanged.

**Air Permit # 1177-AOP-R13** was issued on March 14, 2016.

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October 2011 a minor modification was submitted to replace the existing RCI UFC/Formaldehyde Manufacturing Process Regenerative Thermal Oxidizer (SN-11) with a new regenerative thermal oxidizer (RTO). This modification will not result in an increase in emission because the new RTO will have a lower heat input burner and a higher percent volatile organic compound control efficiency than the existing RTO.

November 11, 2011 a minor modification was submitted to temporarily install a natural gas/fuel oil fired 80 MMBtu Package Boiler (SN-141) to provide back-up steam until the facility is tied in to the Paper Mill for the extra steam supply. The fuel oil capabilities of the boiler will not be connected; therefore only natural gas will be permitted to be burned. During the comment period of this permit the facility informed the Department that the Package Boiler (SN-141) has been removed from the facility.

December 19, 2011 a modification was submitted to add (hazardous Air Pollutants) HAPs to various sources that were determined not to be de minimis and to correct permitted emissions rates based on more recent test data and/or more accurate calculation methodology, where necessary. VOC permitted emission rates are also being updated for certain sources, as applicable based on the HAP related revisions.

August 6, 2012 a renewal application was submitted to renew the facility's existing permit. No physical modifications were proposed in this renewal application; however, GP proposed to make several modifications to the permit as described below. Emission rates have been re-evaluated to reflect updated emission factors, additional stack test data, and more accurate calculation methodologies, as applicable.

The following is a summary of the requested changes with this renewal application.

- a. Remove the following sources that are no longer in service:
- b. Crude Tall Oil Acidulation Plant Scrubber (SN-12)
- c. Phenol Storage Tank (SN-60)
- d. Three UF Resin Storage Tanks (SN-85, SN-88, and SN-89)
- e. Wet Strength Resin Storage Tank (SN-101)
- f. Rename source SN-137 from "Formaldehyde/UFC Loading Station" to "UFC Railcar Loading Station".

Incorporate previously requested modifications from Minor Modification Applications submitted October 17, 2011 and November 11, 2011 and a Major Modification Application submitted December 16, 2011.

Include the following sources that were not previously evaluated and included in the Title V permit:

- a. Haul Roads (SN-145)
- b. Fugitive Equipment Leaks (SN-146)
- c. Liquid Resin Manufacturing Cooling Tower (SN-142)

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- d. Formaldehyde Production Cooling Tower (SN-143)
- e. Derivative Plant Cooling Tower (SN-144)

Removed Specific Condition 6b which specifies limits when the plant is producing any formaldehyde containing rosin. GP Crossett no longer produces formaldehyde containing rosin

Add additional start-up, shutdown, and malfunction (SSM) wording to Specific Condition Nos. 14, 27, 39, 53, and 112.

Bubble emission limits for the Liquid Resin Storage Tanks (i.e., SN-21, SN-22, SN-23, SN-30, SN-31, SN-66, SN-67, SN-68, SN-69, SN-71, SN-73, SN-74, SN-77, SN-78, SN-79, SN-80, SN-81, SN-90, SN-91, SN-97, SN-98, SN-99, SN-100, and SN-102).

Bubble the emission limits for the Tall Oil Fractionation Plant Storage Tanks (i.e., SN-14, SN-15, SN-16, SN-20, SN-24, SN-32, SN-33, SN-34, SN-35, SN-36, SN-37, SN-40, SN-42, SN-43, SN-44, SN-45, SN-46, SN-47, SN-48, SN-49, SN-50, SN-51, SN-52, and SN-53, SN-54, SN-55, SN-56, SN-57, SN-58, SN-107, SN-108, SN-109, SN-110, SN-111, SN-113, and SN-119).

Bubble the emission limits for the Rosin Size Plant storage tanks (SN-26, SN-41, SN-118, SN-120, SN-121, SN-122, SN-123, SN-126).

Hazardous air pollutants were evaluated pursuant to the ADEQ's permittee guidance (dated July 2012) and emissions limits were proposed for all sources as appropriate.

Add GHG emission limits for sources SN-01, SN-03, SN-05, SN-07, SN-10, SN-11, SN-129, SN-140 and SN-141.

October 17, 2013 a minor modification was submitted to group certain resin tanks used in the Liquid Resin Manufacturing Plant and bubble the emission limits to allow the plant flexibility.

August 8, 2014 a minor modification application was submitted to

Group all tanks used in the Tall Oil Fractionation Plant Tanks and replace the Tall Oil Rosin Storage Tank, Tank 7 (SN-52) with Tank 63 (formerly permitted as Neutral Rosin Adduct Storage Tank, SN-25) which will be modified to the same height and capacity of Tank 7. Tank 63 will be part of the Rosin Size Plant Sources. The facility requests to designate the modified Tank 63 as SN-52.

Group all tanks used in the Rosin Size Plant to allow the plant more flexibility to store a variety of products. Revise the process description for Tank 11 (SN-120), Tank 13 (SN-121), and Tank 14 (SN-122). The facility no longer store Novaflo<sup>®</sup> 50 in Tanks 11 and 13 and 70% DUF in Tank 14. This modification will allow the facility to store an amidoamine intermediate in Tank 11 (SN-120), XTOL<sup>®</sup> 692 from the C-1 Cooker in Tank 14 (SN-122). Tank 13 (SN-121) will be used as a blending tank to blend XTOL<sup>®</sup> 692 and amidoamine to make an emulsifier, GP<sup>®</sup> 768G42.

Install a new 12,500 gal storage tank that will store molten maleic anhydride (MMA). This is a Group 2 tank under the MON Rule, because the vapor pressure is less than 1.0 psi, GP

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Chemicals will voluntarily control working losses from the tank when it is being filled using a small packaged wet scrubber (SN-147).

Include MMA fugitive emissions into the fugitive emission limit in SN-146

September 22, 2014 the facility submitted an addendum to the Title V Renewal application to correct the heat input for the spray dryer burner (SN-03) and revised the associated emission limits. The burner was originally permitted in 1983 at 10.0 MMBtu/hr but it is actually 15.4 MMBtu/hr. The original burner has not been modified, reconstructed, or replaced. GP has data from previous compliance and engineering tests while the spray dryer process unit was operating at or above 90% production capacity showing that emissions from the spray dryer were below permitted levels even with the larger burner. The facility also submitted revised calculations for the fugitive emissions from plant wide LDAR equipment within the affected sources regulated by HON, West Strength MACT, Resin MACT and MON LDAR programs identified as SN-146.

January 23, 2015 the facility submitted a minor modification to install a non-bulk packaging system (SN-148) that bags the finished product from the spray dry unit. The system will be equipped with a new dust collector to minimize particulate emissions.

During the comment period of the draft permit, several comments were received from the public in regards to HAPs emitted from the facility. On November 13, 2015, GP Chemicals conducted an air quality analysis, based on a request from ADEQ, to determine if emissions of formaldehyde would potentially exceed the presumptively acceptable impact level (PAIL). Per ADEQ guidance, this is accomplished by conducting an air dispersion modeling analysis. Other HAPs emitted from the facility were screened by ADEQ and it was determined no further action is required at this time.

Several sources modeled for formaldehyde differ from the current permitted emission rates and the most recent Title V submittals. Thus, On January 29, 2016 the facility submitted a request to modify emissions. In order to decrease emissions from the facility, GP Chemicals proposed to install enforceable emission controls on the Urea Formaldehyde Concentrate (UFC) railcar loading station (SN-137). The existing control device to be used will be SN-11, RCI UFC/Formaldehyde Manufacturing Process Oxidizer. In addition, GP Chemicals proposed to lower emission limits for the spray dryer (SN-03), liquid resin manufacturing tank source group, wastewater treatment (SN-134), and equipment leaks (SN-146).

The emission reduction for the railcar loading station will be achieved by controlling emissions with the RCI control device, SN-11. Emissions for the spray dryer (SN-03) were calculated based on the most recent stack data of 2.2 lb/hr formaldehyde. Equipment Leaks (SN-146) were not listed as a source in the previous air permit (#1177-AOP-R12), but emission estimates for this application are being updated. Emission changes for the wastewater treatment (SN-134) are based on a change in methodology due to removal of the wastewater pond.

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In addition to revising the formaldehyde emission limits GP Chemicals is also updating the estimates for other HAP emissions from the railcar unloading, liquid resin tanks, wastewater treatment, and equipment leak sources as these calculations were updates as part of the formaldehyde refinements.

Total permitted emissions will increase by 13.8 tons/year (tpy) PM<sub>10</sub>, 14.1 tpy PM, and 36.5 tpy CO. Total permitted emissions will decrease by 9.5 tpy SO<sub>2</sub>, 5.8 tpy NO<sub>x</sub>, 43.9 tpy VOC, 44.1798 tpy total HAPs and 7.30 tpy of Air Contaminants (Ammonia, Hydrogen Sulfide, Sulfuric Acid, Formic Acid, and TRS).

**Air Permit 1177-AOP-R14** was issued on July 8, 2016. The facility submitted an application for administrative amendment to remove SN-137(Formaldehyde/UFC Loading Stations) from the operating permit. Total permitted emissions will decrease by 0.2 tpy VOC.

**Permit 1177-AOP-R15** was issued on October 6, 2016. This permit was an administrative amendment to re-install the previously removed sodium hydroxide storage tank M-5. This tank replaced the sodium hydroxide storage tank M-4 that was removed. The sodium hydroxide storage tank M-5 was added to the permit as an insignificant activity. Also, the facility requested to remove the word "storage" from the emission summary table group heading, to change the description of SN-121, SN-52, and of the sources in the table shown under Specific Condition #125. There was no change with the total permitted emissions rates.

**Air Permit 1177-AOP-R16** was issued on June 1, 2018. This permit added a previously approved extension for 40 C.F.R. Part 63, Subpart OOO – *National Emission Standards for Hazardous Air Pollutants for Amino/Phenolic Resins Production* until October 9, 2018 to the permit. 40 C.F.R. § 63.6(i)(4)(a) requires the facility, since they requested an extension, apply for a modification to their title V permit and requires that the conditions of that extension be added to the permit. This permit modification incorporated that requirement. The category A-4 insignificant activity NaOH and Water Dilution Tank, T-84, was updated to NaOH/KOH and Water Dilution Tank T-84 as requested in an application for administrative amendment. There are no changes in permitted emission rates.

**Permit 1177-AOP-R17** was issued on June 25, 2018. The permit is an administrative amendment to transfer the Tall Oil Manufacturing plant to Ingevity Arkansas, LLC due to sale of that equipment. Sources SN-01, 05, 06, 07, 09, 14, 15, 16, 20, 24, 32, 33, 34, 35, 36, 37, 40, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 53, 54, 55, 56, 57, 58, 107, 108, 109, 110, 120, 121, 122, 123, 126, 129, 139, 144, and 147 were removed from the permit. Portions of SN-145 and 146 were transferred. Tanks SN-111, 113, 118, 119, and 26 were part of permitted sources groups transferred to Ingevity; however, those tanks were not transferred to Ingevity. Those tanks still exist at this facility but are no longer permitted for operation.

**Permit 1177-AOP-R18** was issued December 28, 2018. This permit was a modification to add two fire pump engines to the permit which were previously installed. These sources are SN-149 and 150. This modification also included a request to update burner sizes to installed rates for two sources. This change was not made as those sources were sold and transferred to Ingevity,



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and removed from the permit in previous permit actions. Permitted emission rates increased 0.3 tpy of particulate, SO<sub>2</sub>, and VOC; 0.8 tpy of CO, 2.1 tpy of NO<sub>x</sub>, and 0.12 tpy of HAPs.

**Permit 1177-AOP-R19** was issued April 12, 2019. This permit was a modification to add Tanks 56 and 4 (SN-111 and SN-151) back to the GP Chemical permit. These tanks were removed in a previous permitting action. SN-151 was previously listed as an insignificant activity before removal. The facility requested to add the tank as a source. Also, Specific Condition 38 was updated to allow the 50 hours for non-emergency use for SN-149 as allowed by the federal regulation. Permitted emissions increased 5.1 tpy of VOC.

**Permit 1177-AOP-R20** was issued on June 29, 2020. This permit was a minor modification permit the Package Boiler, SN-152, currently allowed as a temporary source as a permanent source. Permitted annual emissions increased 1.9 tpy of particulate, 0.1 tpy of SO<sub>2</sub>, 0.6 tpy of VOC, 5.1 tpy of CO, and 4.5 tpy of NO<sub>x</sub>, and 0.13 tpy of HAPs.

**Permit 1177-AOP-R21** was issued on June 28, 2022. This permit was the Title V renewal for the facility. In this renewal, a number of changes associated with selling off a portion of the facility, MACT applicability, and changes due to changes in process were made. These changes include:

- Removing HON MACT requirements. This made a number of sources subject to the Resin MACT, Subpart OOO.
- Removing never constructed sources from the permit, SN-92, 93, and 94.
- Adding emissions from SN-137 the UFC Loading to SN-11 the RCI UFC Manufacturing Process Thermal Oxidizer.
- Removal of a number of no longer used sources, SN-10, 13, 18, 71, and 148.
- Making insignificant tanks U-5 and U-6 sources SN-86 and 87. The sources were previously insignificant tanks for storage of Novacote and Glassmat Resin Blend. They now store UF/PF resin. These source numbers correspond to the numbers the tanks were assigned previously.
- Changing record keeping for SN-135 to pounds per year instead of gallons per year.
- Renaming SN-142 to the West Cooling tower and SN-143 to the East cooling tower. Due to changes in MACT applicability, these sources were moved to the same section of the permit.
- A number of Plantwide Conditions which apply to single sources were moved to the Specific Conditions for those sources.

This permit also incorporates a minor modification which added an Epichlorohydrin Storage Tank (M-27) to the insignificant activity list as category A-13, and allowed capturing the emissions from the vacuum pump water sump by installing a fully enclosed seal water tank. The captured emissions will be routed to the RCI UFC/Formaldehyde Manufacturing Process Regenerative Thermal Oxidizer (SN-11) for control.

**Permit 1177-AOP-R22** was issued on July 2, 2024. With this minor modification, Bakelite Chemicals LLC replaced Package Boiler SN-152 with Package Boiler SN-153. SN-153 was a 27.6 MMBtu/hr natural gas-fired boiler. The facility's permitted annual emissions decreased by 0.1 tpy of PM, 1.0 tpy of PM<sub>10</sub>, and 0.12 tpy of total other HAPs. The facility's permitted annual

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emissions increased by 0.1 tpy of VOC, 4.6 tpy of CO, 1.3 tpy of NO<sub>x</sub>, 0.01 tpy of POM, and 0.01 tpy of Chromium.

## SECTION IV: SPECIFIC CONDITIONS

### Facility-wide Sources

#### SN-11 RCI UFC Manufacturing Process Regenerative Thermal Oxidizer

##### Source Description

The RCI UFC Manufacturing Process Regenerative Thermal Oxidizer (SN-11) controls emissions from equipment which are regulated under several NESHAP standards, which are summarized as follows:

NESHAP Subpart OOO (Resin MACT): The existing Subpart OOO affected source includes, Formaldehyde Storage Tanks (F1-F2), UFC Storage Tanks (C1-C5), and Formaldehyde/UFC Load Rack which are vented through a Vapor Recovery Tank and reclaimed into the RCI processes and diverted to the RTO when the RCI process is down. The affected source includes three sets of process vents which are part of an aggregate batch vent stream all of which are subject to an emission standard including: 1) Group 1 Methanol Tank (M-2) with 95% destruction efficiency requirement, 2) Two Amino Phenolic Resin Batch Reactors (K2 & K3) with an 83% destruction efficiency requirement, and 3) RCI UFC Process (Absorber) meeting the Subpart OOO definition of a front-end reactor continuous process vent which is subject to a 0.61 lb/hr emission rate limit on a daily average basis. The affected source is subject to 40 CFR Part 63 and OOO and UU; and applicable portions of the General provisions in Subpart A and SS.

When either the Resin MACT RCI UFC Manufacturing Process or Resin MACT Reactors (K2 or K3) are in operation, the RCI Regenerative Thermal Oxidizer (RTO) controls emissions from all of the subject equipment. If both Resin MACT processes are shut down (RCI Plant and Resin Reactors (K2 and K3), the Group 1 Methanol Tank is interlocked such that methanol cannot be pumped to the tank, thus eliminating working losses.

NESHAP Subpart W (Wet Strength MACT) is applicable to the Reactors K1, K-4 and K-7. Emissions from K-4 and K-7 are also controlled by the RCI RTO.

There is also a Novacote/Urea Solution Reactor (K-5) that is controlled by the RCI RTO, but the reactor is not subject to Resin MACT or Wet Strength MACT based on the current production associated with this unit.

##### Specific Conditions

1. The permittee shall not exceed the emission rates set forth in the following table. The permittee shall demonstrate compliance with this condition by complying with Specific Condition #8 and Plantwide Condition #13 . [Rule 19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

| SN | Description                                                                           | Pollutant        | lb/hr    | tpy      |
|----|---------------------------------------------------------------------------------------|------------------|----------|----------|
| 11 | RCI UFC<br>Manufacturing Process<br>Regenerative Thermal<br>Oxidizer (3.3<br>MMBTU/hr | PM <sub>10</sub> | 0.1      | 0.2      |
|    |                                                                                       | SO <sub>2</sub>  | 0.1      | 0.1      |
|    |                                                                                       | VOC              | 3.5      | 15.3     |
|    |                                                                                       | CO               | 9.4      | 41.1     |
|    |                                                                                       | NO <sub>x</sub>  | 0.5      | 2.0      |
|    |                                                                                       | Lead             | 0.000002 | 0.000008 |

2. The permittee shall not exceed the emission rates set forth in the following table. The permittee shall demonstrate compliance with this condition through compliance with Specific Condition #8 and Plantwide Condition #13. [Rule 18.801 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      |
|----|---------------------------------------------------------------------------------------|-------------------|------------|----------|
| 11 | RCI UFC<br>Manufacturing Process<br>Regenerative Thermal<br>Oxidizer (3.3<br>MMBTU/hr | PM                | 0.1        | 0.2      |
|    |                                                                                       | Formaldehyde      | 0.2        | 0.9      |
|    |                                                                                       | Hydrogen Chloride | 2.3        | 9.8      |
|    |                                                                                       | Mercury           | 0.00000009 | 0.000004 |
|    |                                                                                       | Methanol          | 1.8        | 7.9      |
|    |                                                                                       | Phenol            | 0.1        | 0.1      |
|    |                                                                                       | Other HAPs        | 0.2        | 0.5      |

3. Visible emissions may not exceed the limits specified in the following table of this permit as measured by EPA Reference Method 9. Compliance with this limit shall be demonstrated by natural gas combustion.

| SN | Limit | Rule/Regulatory Citation                                                                        |
|----|-------|-------------------------------------------------------------------------------------------------|
| 11 | 5%    | Rule 18.501 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311 |

4. The permittee shall reduce inlet emissions of total organic HAP by a minimum of 95 percent from RCI UFC Manufacturing Process Oxidizer Regenerative Thermal (OX-2) except during periods of planned routine maintenance. All deviations from the emission standard shall be reported in accordance with Specific Condition #9. Compliance with this condition will be demonstrated by Specific Condition #8. [Rule 19.304 and 40 C.F.R. § 63.1404(a)(1)]
5. The permittee shall reduce inlet emissions of total organic HAP by 83 percent or greater from kettles K-2 and K-3. Compliance with this condition will be demonstrated by Specific Conditions #8 and #12. [Rule 19.304 and 40 C.F.R. § 63.1406(a)(2)ii]

6. Periods of planned routine maintenance for the RCI UFC Manufacturing Process Regenerative Thermal Oxidizer, OX-2, SN-11, shall comply with the planned routine maintenance requirements established in §63.1404(c). Compliance with this condition will be shown by Specific Condition #7. [Rule 19.304 and 40 C.F.R. § 63.1404(c)]
7. The permittee shall maintain a record of all planned routine maintenance for the RCI UFC/ Manufacturing Process Regenerative Thermal Oxidizer, OX-2, SN-11, as required by §63.1404(c). [Rule 19.304 and 40 C.F.R. § 63.1404(c)]
8. The permittee shall maintain a minimum oxidizer temperature of 872°C (or subsequent established minimum temperature in the most recent NCS update) in the RCI UFC Manufacturing Process Regenerative Thermal Oxidizer combustion chamber, OX-2, SN-11 whenever the RCI plant is in operation, the methanol tank is in service, or the kettles K-1 through K-7 are producing amino-phenolic resins. As allowed in 40 CFR §63.1416(c)(2-4), periods of non-operation, and monitoring system breakdowns, repairs, calibrations and zero (low level) and high-level adjustments do not count toward the calculation of the “daily average value”. Compliance with this condition will be demonstrated by Specific Conditions #10 and #11. [Rule 19.304 and 40 C.F.R. § 63 Subpart OOO]
9. The permittee shall report all upset conditions, including planned routine maintenance as referenced in Specific Condition #4. Any exceedance shall be deemed in violation and be subject to enforcement actions unless the permittee demonstrate that the excess emissions resulted from:
  - a. Equipment malfunction or upset and are not the result of negligence or improper maintenance; or
  - b. Physical constraints on the ability of a source to comply with the emission standard, limitation or rate during startup or shutdown;

The permittee shall report such occurrence or upset or breakdown of equipment to the Department by the end of the next business day after the discovery of the occurrence and submit to the Department a full report of occurrence in accordance with Rule 19.601(c). [Rule 19.601 and 40 C.F.R. § 52 Subpart E]

10. The permittee shall install, calibrate, maintain, and operate according to manufacturer's specifications a temperature monitoring device equipped with a continuous recorder. The temperature monitoring device shall be installed in the combustion chamber of the regenerative thermal oxidizer or in the ductwork immediately downstream of the firebox in a position before any substantial heat exchange occurs. [Rule 19.304 and 40 C.F.R. § 63 Subpart OOO]
11. The permittee shall maintain continuous records of the temperature in the combustion chamber as monitored by the temperature monitoring device. The permittee shall also

- maintain daily averages of the combustion chamber or position immediately downstream of the combustion chamber. [Rule 19.304 and 40 C.F.R. § 63 Subpart OOO]
12. The permittee shall conduct an initial compliance test of the Organic HAP destruction efficiency of the RCI UFC Manufacturing Process Regenerative Thermal Oxidizer, SN-11. This test was conducted in accordance with the provisions of §63.1413 and §63.997. [Rule 19.304 and 40 C.F.R. § 63 Subpart OOO]
  13. The permittee shall conduct annual inspections of the RCI UFC Manufacturing Process Oxidizer, SN-11 and all its associated equipment subject to 40 CFR Part 63, Subpart OOO. These annual inspections shall be conducted according to §63.1400(k)(4). [Rule 19.304 and 40 C.F.R. § 63 Subpart OOO]
  14. The permittee shall install, maintain, and operate a flow indicator on the bypass line which diverts emissions required to be controlled by this subpart to identify any period when the emissions are not routed to OX-2. [Rule 19.304 40 C.F.R. § 63.1415(d)(1)]
  15. The permittee shall comply with the equipment leak provisions of 40 CFR Part 63, Subpart UU. The provisions of Subpart UU include: [Rule 19.304 and 40 C.F.R. § 63.1410]
    - a. Identifying all equipment subject to Subpart UU - §63.1022
    - b. Conducting monitoring for leaks - §63.1022
    - c. Maintain records for equipment subject to Subpart UU - §63.1038
    - d. Reporting is required in the Periodic Reports of Subpart OOO in Specific Condition #17.
  16. The permittee shall submit a Notification of Compliance Status as outlined in §63.1417(e) within 150 days after the January 20, 2003 compliance date. [Rule 19.304 and 40 C.F.R. § 63.1417(e)]
  17. The permittee shall submit periodic reports as outlined in §63.1417(f) no later than March 30th and September 30th of each year covering the six month period ending thirty days prior to each due date as approved by EPA on August 14, 2012. [Rule 19.304 and 40 C.F.R. § Subpart OOO]
  18. The permittee shall submit reports of malfunctions as outlined in §63.1417(g) on the same schedule as the Periodic Reports in Specific Condition #17. [Rule 19.304 and 40 C.F.R. § 63.1417(g)]
  19. The permittee shall monitor the pressure relief devices in OHAP service as required in §63.1411. [Rule 19.304 and 40 C.F.R. § 63 Subpart OOO]
  20. The permittee shall submit other reports as required by §63.1417(h). These reports shall include: [Rule 19.304 and 40 C.F.R. § 63.1417(h)]

- a. Notification of storage vessel inspection as specified in 40 C.F.R. Part 63, Subpart WW. - §63.1417(h)(1)
  - b. Site Specific Test Plan. This report shall be submitted no later than 90 days prior to the planned date for a performance test and shall contain the information required in §63.1417(h)(2).
  - c. Notification of Planned Performance Tests. This notification shall be at least 30 days prior to the date the performance test is scheduled. - §63.1417(h)(3).
  - d. Notification of change in primary product. - §63.1417(h)(4)
  - e. Notification of added emission points. - §63.1417(h)(5)
  - f. Redesignation of control device. - §63.1417(h)(6)
  - g. Notification of process change. - §63.1417(h)(7)
  - h. Electronic reporting of completed performance tests - §63.1417(h)(8)
21. To show compliance with the CO and VOC limits for source SN-11 the permittee shall monitor the operating temperature of the thermal oxidizer SN-11 and maintain that temperature to the temperature established for Specific Condition #8. This temperature shall be maintained on a daily average for any time VOC or CO containing gasses are routed to the thermal oxidizer. [Rule 19.304 and 40 C.F.R. § 64]
22. The permittee shall submit reports as required by § 64.9(a). These records shall include: Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective actions taken; summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable); and a description of the actions taken to implement a QIP during the reporting period as specified in §64.8. Upon completion of a QIP, the owner or operator shall include in the next summary report documentation that the implementation of the plan has been completed and reduced the likelihood of similar levels of excursions or exceedances occurring. [Rule 19.304 and 40 C.F.R. § 64]
23. The permittee shall submit reports as required by § 64.9(b). The permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to §64.8 and any activities undertaken to implement a quality improvement plan, and other supporting information required to be maintained under this part (such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions [Rule 19.304 and 40 C.F.R. § 64]

### SN-136 Crude Tall Oil, Deaerator, and Novacote Resins Loading Stations

#### Source Description

The Crude Tall Oil (CTO), Deaerator, and Novacote Resins Loading Stations are used to load and offload crude tall oil, deaerator products, and Novacote resin products between storage tanks, trucks and railcars. Some of the products loaded at these transfer racks may contain OHAP impurities which necessitate that these loading stations be regulated as Group 2 transfer racks with no control requirements.

#### Specific Conditions

24. The permittee shall not exceed the emission rates set forth in the following table. The permittee shall demonstrate compliance with this condition by complying with Plantwide Condition #13. [Rule 19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

| SN  | Description                                                     | Pollutant | lb/hr | tpy |
|-----|-----------------------------------------------------------------|-----------|-------|-----|
| 136 | Crude Tall Oil, Deaerator, and Novacote Resins Loading Stations | VOC       | 1.0   | 1.0 |

25. The permittee shall not exceed the emission rates set forth in the following table. The permittee shall demonstrate compliance with this condition by complying with Plantwide Condition #13. [Rule 18.801 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  |
|-----|-----------------------------------------------------------------|-----------|-------|------|
| 136 | Crude Tall Oil, Deaerator, and Novacote Resins Loading Stations | Ammonia   | 0.01  | 0.01 |



### SN-138 Liquid Resin Loading Stations

#### Source Description

The liquid resin loading stations are used to load liquid amino/phenolic resins to trucks and railcars.

#### Specific Conditions

26. The permittee shall not exceed the emission rates set forth in the following table. The permittee shall demonstrate compliance with this condition by complying with Plantwide Condition #13. [Rule 19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

| SN  | Description            | Pollutant | lb/hr | tpy |
|-----|------------------------|-----------|-------|-----|
| 138 | Resin Loading Stations | VOC       | 0.2   | 0.8 |

27. The permittee shall not exceed the emission rates set forth in the following table. The permittee shall demonstrate compliance with this condition by complying with Plantwide Condition #13. [Rule 18.801 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  |
|-----|------------------------|--------------|-------|------|
| 138 | Resin Loading Stations | Formaldehyde | 0.01  | 0.02 |
|     |                        | Methanol     | 0.03  | 0.10 |
|     |                        | Phenol       | 0.20  | 0.60 |

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SN-140 Emergency Generator Diesel Fired (GEN-2)  
SN-149 260 hp Fire pump Engine  
SN-150 231 hp Fire pump Engine

#### Source Description

The diesel fired generator is used as a back-up for failures of the electricity from the local utility. To help ensure the equipment is reliable during emergency situations, the generator is test run each week. Typically, the unit will be operated for very short durations not to exceed 1,500 hours/year. The generator includes an emergency stationary Reciprocating Internal Combustion Engine (RICE) with a brake horsepower of 755 HP.

SN-149 and 150 are diesel-fired emergency fire pump engines of 260 and 231 hp respectively.

#### Specific Conditions

28. The permittee shall not exceed the emission rates set forth in the following table. The permittee shall demonstrate compliance with this condition by complying with Specific Condition #31. [Rule 19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

| SN  | Description                              | Pollutant        | lb/hr | tpy  |
|-----|------------------------------------------|------------------|-------|------|
| 140 | Emergency Generator Diesel Fired (GEN-2) | PM <sub>10</sub> | 0.3   | 0.3  |
|     |                                          | SO <sub>2</sub>  | 1.1   | 0.9  |
|     |                                          | VOC              | 0.6   | 0.4  |
|     |                                          | CO               | 4.2   | 3.2  |
|     |                                          | NO <sub>x</sub>  | 18.2  | 13.6 |
| 149 | 260 hp Fire pump Engine (GEN-3)          | PM <sub>10</sub> | 0.1   | 0.1  |
|     |                                          | SO <sub>2</sub>  | 0.6   | 0.2  |
|     |                                          | VOC              | 0.7   | 0.2  |
|     |                                          | CO               | 1.5   | 0.5  |
|     |                                          | NO <sub>x</sub>  | 1.4   | 0.5  |
| 150 | 231 hp Fire pump Engine (GEN-4)          | PM <sub>10</sub> | 0.6   | 0.2  |
|     |                                          | SO <sub>2</sub>  | 0.5   | 0.2  |
|     |                                          | VOC              | 0.6   | 0.2  |
|     |                                          | CO               | 1.6   | 0.4  |
|     |                                          | NO <sub>x</sub>  | 7.2   | 1.8  |

29. The permittee shall not exceed the emission rates set forth in the following table. The permittee shall demonstrate compliance with this condition by complying with Specific Condition #31. [Rule 18.801 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  |
|-----|------------------------------------------|------------------|-------|------|
| 140 | Emergency Generator Diesel Fired (GEN-2) | PM               | 0.4   | 0.3  |
|     |                                          | Formaldehyde     | 0.01  | 0.01 |
|     |                                          | Total Other HAPs | 0.01  | 0.01 |
| 149 | 260 hp Fire pump Engine (GEN-3)          | PM               | 0.1   | 0.1  |
|     |                                          | Formaldehyde     | 0.01  | 0.01 |
|     |                                          | Total Other HAPs | 0.01  | 0.01 |
| 150 | 231 hp Fire pump Engine (GEN-4)          | PM               | 0.6   | 0.2  |
|     |                                          | Formaldehyde     | 0.01  | 0.01 |
|     |                                          | Total Other HAPs | 0.01  | 0.01 |

30. Visible emissions may not exceed the limits specified in the following table of this permit as measured by EPA Reference Method 9.

| SN         | Limit | Rule/Regulatory Citation                 |
|------------|-------|------------------------------------------|
| 149<br>150 | 20%   | Rule 19.503 and 40 C.F.R. § 52 Subpart E |

31. The permittee shall not operate the emergency generator SN-140 in excess of 1,500 total hours (emergency and non-emergency) per calendar year in order to demonstrate compliance with the annual emission rate limits. The permittee shall not operate SN-149 and SN-150 in excess of 500 hours per rolling 12 month period per engine. Emergency operation in excess of these hours may be allowable but shall be reported and will be evaluated in accordance with Rule 19.602 and other applicable regulations. [Rule 19.705, 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]
32. The permittee shall maintain monthly records to demonstrate compliance with Specific Condition #31. The permittee shall update these records by the fifteenth day of the month following the month to which the records pertain. The calendar year totals and each individual month's data shall be maintained on-site, made available to Department personnel upon request, and submitted in accordance with General Provision #7. [Rule 19.705 and 40 C.F.R. § 52 Subpart E]
33. The Emergency Generator (SN-140) is subject to the standards 40 C.F.R. Part 63 Subpart ZZZZ (*NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)*). The permittee shall demonstrate compliance through initial notification requirement as specified in §63.6645(f). [Rule 19.304 and 40 C.F.R. § 63 Subpart ZZZZ]

34. Engine SN-149 is subject to 40 C.F.R. Part 63 Subpart ZZZZ (*NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)*). The permittee shall comply with the standards of Subpart ZZZZ by complying with the standards of 40 C.F.R. Part 60 Subpart IIII.
35. The permittee shall for SN-149 not exceed the emissions in the following table. The permittee must operate and maintain SN-149 in a manner that achieves the emission standards below over the entire life of the engine. [Rule 19.304 and 40 C.F.R. § 60 Subpart IIII]

| Source | Pollutant              | Limit       |
|--------|------------------------|-------------|
| SN-149 | NMHC + NO <sub>x</sub> | 4.0 g/KW-hr |
|        | CO                     | 3.5 g/KW-hr |
|        | PM                     | 0.2 g/KW-hr |

36. The permittee shall use a diesel fuel in SN-149 that meets the requirements of 40 CFR 80.510(b). [Rule 19.304 and 40 C.F.R. § 60 Subpart IIII]
37. SN-149 must be certified to meet the emission limitations of 60.4202(d). SN-149 must be installed and configured according to the manufacturers emission related specification. [Rule 19.304 and 40 C.F.R. § 60 Subpart IIII]
38. The permittee must operate and maintain SN-149 and control device according to the manufacture's written emission-related instructions, change only those emission-related settings that are permitted by the manufacturer, and meet the requirements of 40 C.F.R. §§ 89, 94, and/or 1068 as they apply to you. [Rule 19.304 and 40 C.F.R. § 60 Subpart IIII]
39. The permittee may operate SN-149 a maximum of 100 hours per calendar year for maintenance and readiness checks. The permittee may operate the engine SN-149 for 50 hours per year in non-emergency situations as outlined. Those 50 hours must be included in the 100 hours for maintenance and readiness checks. [Rule 19.304 and 40 C.F.R. § 60 Subpart IIII]
40. The permittee shall maintain records of the time of operation of the engine SN-149 and the reason the engine was in operation during that time. [Rule 19.304 and 40 C.F.R. § 60 Subpart IIII]
41. The permittee must meet the following maintenance requirements for SN-150: Change the oil and filter every 500 hours of operation or annually, whichever comes first; inspect the air cleaner every 1,000 hours of operation or annually, whichever comes first; and inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary. [Rule 19.304 and 40 C.F.R. § 63 Subpart ZZZZ]

42. The permittee must for SN-150, 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. [Rule 19.304 and 40 C.F.R. § 63 Subpart ZZZZ]
43. The permittee is to comply with the operating limitations of 40 C.F.R. Part 63, Subpart ZZZZ that apply at all times and maintain any affected source including any associated air pollution control equipment and monitoring equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions. [Rule 19.304 and 40 C.F.R. § 63 Subpart ZZZZ]
44. The permittee must maintain the Emergency Engine, SN-150, according to the manufacturer's emission-related written instructions or develop their own maintenance plan according to 40 C.F.R. 63.6625(e). [Rule 19.304 and 40 C.F.R. § 63 Subpart ZZZZ]
45. The permittee must install on the Emergency Engine, SN-150, a non-resettable hour meter. [Rule 19.304 and 40 C.F.R. § 63 Subpart ZZZZ]
46. The permittee may operate the Emergency Engine, SN-150, 100 hours per year for maintenance and readiness checks. The permittee may operate the engines 50 hours per year in non-emergency situations as outlined in §63.6640(f)(4). Those 50 hours must be included in the 100 hours for maintenance and readiness checks. There is no limit on emergency operation due to Subpart ZZZZ. [Rule 19.304 and 40 C.F.R. § 63 Subpart ZZZZ]
47. The permittee shall submit reports as outlined in §63.6650. [Rule 19.304 and 40 C.F.R. § 63 Subpart ZZZZ]
48. The permittee shall maintain records as outlined in §63.6655. These records shall be kept in accordance with General Provision 7 and made available to Department personnel upon request. [Rule 19.304 and 40 C.F.R. § 63 Subpart ZZZZ]

SN-145 Haul Roads

Source Description

Vehicle traffic on the paved roads throughout the manufacturing complex creates fugitive dust emissions.

Specific Conditions

49. The permittee shall not exceed the emission rates set forth in the following table. The permittee shall demonstrate compliance with this condition by complying with Specific Condition #51. [Rule 19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

| SN  | Description | Pollutant        | lb/hr | tpy |
|-----|-------------|------------------|-------|-----|
| 145 | Haul Roads  | PM <sub>10</sub> | 3.1   | 4.4 |

50. The permittee shall not exceed the emission rates set forth in the following table. The permittee shall demonstrate compliance with this condition by complying with Specific Condition #51. [Rule 18.801 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  |
|-----|-------------|-----------|-------|------|
| 145 | Haul Roads  | PM        | 14.3  | 20.8 |

51. The permittee shall not operate in a manner such that fugitive emissions from the haul roads would cause a nuisance off-site or allow visible emissions to extend beyond the property boundary. Off-site opacity less than or equal to 5% shall not be considered a nuisance. The permittee shall use water sprays or other techniques as necessary to control fugitive emissions that migrate off-site. [Rule 18.501, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

### SN-146 Equipment Leaks

#### Source Description

Fugitive VOC/HAP emissions result from equipment component leaks such as valves, connectors, pumps, and agitators.

#### Specific Conditions

52. The permittee shall not exceed the emission rates set forth in the following table. The permittee shall demonstrate compliance with this condition by complying with Specific Condition #15 and Plantwide Conditions #15, #17, and #18. [Rule 19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

| SN  | Description                   | Pollutant | lb/hr | tpy |
|-----|-------------------------------|-----------|-------|-----|
| 146 | Equipment leaks<br>(Fugitive) | VOC       | 21.7  | 5.0 |

53. 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 #15 for Resin MACT, Plantwide Conditions #15, #17, and #18 for WSR MACT. [Rule 18.801 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  |
|-----|-------------------------------|-----------------|-------|------|
| 146 | Equipment leaks<br>(Fugitive) | Formaldehyde    | 7.0   | 1.6  |
|     |                               | Methanol        | 4.2   | 1.0  |
|     |                               | Phenol          | 3.1   | 0.7  |
|     |                               | Total Other HAP | 7.37  | 1.68 |

### Liquid Resins Manufacturing Sources

#### SN-61 Cresylic Acid Storage Tank

##### Source Description

The Cresylic Acid Storage Tank, P-7, provides cresylic acid as a raw material to the liquid resin kettles.

##### Specific Conditions

54. The permittee shall not exceed the emission rates set forth in the following table. Emission limits are based on EPA Tanks emission estimates and are assumed to be worst case. [Rule 19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

| SN | Description                | Pollutant | lb/hr | tpy |
|----|----------------------------|-----------|-------|-----|
| 61 | Cresylic Acid Storage Tank | VOC       | 0.4   | 0.1 |

55. The permittee shall not exceed the emission rates set forth in the following table. Emission limits are based on EPA Tanks emission estimates and are assumed to be worst case. [Rule 18.801 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  |
|----|----------------------------|------------|-------|------|
| 61 | Cresylic Acid Storage Tank | Other HAPs | 0.05  | 0.01 |



SN-62 Phenol Storage Tank

Source Description

The Phenol Storage Tank, M-8, provides phenol to the kettles at the liquid resin manufacturing plant.

Specific Conditions

56. 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 Plantwide Condition #13. [Rule 19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

| SN | Description         | Pollutant | lb/hr | tpy |
|----|---------------------|-----------|-------|-----|
| 62 | Phenol Storage Tank | VOC       | 2.7   | 0.2 |

57. 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 Plantwide Condition #13. [Rule 18.801 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 |
|----|---------------------|-----------|-------|-----|
| 62 | Phenol Storage Tank | Phenol    | 2.7   | 0.2 |

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### SN-17 Novacote Resin Storage Tank

#### Source Description

The Novacote Resin Storage Tank (SN-17) provide raw material for kettles and/or storage tank additions. The resin can be processed through either a mass flow meter or a process weigh tank (W-3) which send the proper amount of resin to the kettles and/or storage tanks.

#### Specific Conditions

58. The permittee shall not exceed the emission rates set forth in the following table. The permittee shall demonstrate compliance with this condition by complying with Plantwide Condition #13. [Rule 18.801 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 |
|----|-----------------------------|-----------|-------|-----|
| 17 | Novacote Resin Storage Tank | Ammonia   | 3.7   | 0.6 |

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SN-21, SN-22, SN-23, SN-30, SN-31, SN- 66, SN- 67, SN- 68, SN- 69, SN-73, SN-74, SN-77,  
SN-78, SN-79, SN-80, SN-81, SN-86, SN-87, SN-90, SN-91, SN-97, SN-98, SN-99, SN-100,  
and SN-102

#### Liquid Resin storage Tanks

##### Source Description

The Wet Strength Resin Storage Tanks (SN-21, SN-22, SN-23, SN-97, SN-98, SN-99, SN-100, and SN-102), WS-1 through WS-7 and DS-1, provide product storage for wet strength resin produced in the liquid resin manufacturing reactors until the wet strength resin can be loaded onto trucks for off-site shipment.

The PF Resin Storage tanks (SN-30, SN-66, SN-67, SN-68, SN-69, SN-73, and SN-74) are product storage tanks which hold phenol formaldehyde resins produced in the reactors until they are shipped off site by trucks. The PF Resin Storage Tanks have equipment ID numbers P-1, P-2, P-3, P-5, P-6, P-9, P-10, and P-11. These tanks are authorized to store either PF-Resin or UF-Resin.

The UF Resin Storage Tanks (SN-90 and SN-91), U-9 and U-10, store the urea formaldehyde resin products that may be produced by reactors K-1 through K-3 of the liquid resin manufacturing plant. The tanks hold the UF Resin product until it is loaded onto trucks for off-site shipment.

Tanks SN-31, SN-77, SN-78, SN-79, SN-80, SN-81, SN-86 and SN-87 are product storage tanks for UF and PF resin. The tanks hold the resin product until it is loaded onto trucks for off-site shipment.

##### Specific Conditions

59. The permittee shall not exceed the emission rates set forth in the following table. The permittee shall demonstrate compliance with this condition by complying with Plantwide Condition #13. [Rule 19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

| SN                                                                                                                                                                                      | Description                | Pollutant | lb/hr | tpy |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-----------|-------|-----|
| SN-21, SN-22, SN-23, SN-30, SN-31, SN- 66, SN- 67, SN- 68, SN- 69, SN-73, SN-74, SN-77, SN-78, SN-79, SN-80, SN-81, SN-86, SN-87, SN-90, SN-91, SN-97, SN-98, SN-99, SN-100, and SN-102 | Liquid Resin storage Tanks | VOC       | 0.3   | 1.1 |

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60. The permittee shall not exceed the emission rates set forth in the following table. The permittee shall demonstrate compliance with this condition by complying with Plantwide Condition #13. [Rule 18.801 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-21, SN-22, SN-23, SN-30, SN-31, SN- 66, SN- 67, SN- 68, SN- 69, SN-73, SN-74, SN-77, SN-78, SN-79, SN-80, SN-81, SN-86, SN-87, SN-90, SN-91, SN-97, SN-98, SN-99, SN-100, and SN-102 | Liquid Resin storage Tanks | Formaldehyde<br>Methanol<br>Phenol | 0.01<br>0.23<br>0.01 | 0.03<br>1.05<br>0.02 |

SN-95 Process Weigh tank

Source Description

The Process Weigh Tank, W-3, is used for various purposes such as temporary storage and/or metering of raw materials to batch reactors or containers.

Specific Conditions

61. The permittee shall not exceed the emission rates set forth in the following table. The permittee shall demonstrate compliance with this condition by complying with Plantwide Condition #13. [Rule 19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

| SN | Description        | Pollutant | lb/hr | tpy |
|----|--------------------|-----------|-------|-----|
| 95 | Process Weigh Tank | VOC       | 0.3   | 0.3 |

62. The permittee shall not exceed the emission rates set forth in the following table. The permittee shall demonstrate compliance with this condition by complying with Plantwide Condition #13. [Rule 18.801 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  |
|----|--------------------|--------------|-------|------|
| 95 | Process Weigh Tank | Ammonia      | 1.7   | 1.7  |
|    |                    | Formaldehyde | 0.06  | 0.06 |
|    |                    | Methanol     | 0.18  | 0.18 |
|    |                    | Phenol       | 0.04  | 0.04 |

63. The permittee shall emit less than 0.25 tons of any single HAP or any combination of HAPs from SN-95 in any consecutive twelve month period. The purpose of this condition is to avoid the provisions of 40 C.F.R. § 63.1407. [Rule 18.801, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
64. The facility shall maintain monthly records of the 12 month rolling HAP total which demonstrate compliance with the limits set in Specific Condition #63 and may be used by the Department for enforcement purposes. These records shall be updated by the fifteenth day of the month following the month to which the records pertain. These records shall be kept on site, and shall be made available to Department personnel upon request. An annual total and each individual month's data shall be submitted to the Department in accordance with General Provision #7. [Rule 18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

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### SN-103 Novacote Resin Storage Tank

#### Source Description

The Novacote Resin Storage Tank, NC-2, provides product storage for Novacote resin produced in the liquid resin manufacturing kettles until the Novacote resin can be loaded onto trucks or railcars for off-site shipment.

#### Specific Conditions

65. The permittee shall not exceed the emission rates set forth in the following table. The permittee shall demonstrate compliance with this condition by complying with Plantwide Condition #13. [Rule 18.801 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 |
|-----|-----------------------------|-----------|-------|-----|
| 103 | Novacote Resin Storage Tank | Ammonia   | 3.4   | 0.6 |

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SN-125 Formic Acid Storage Tank

Source Description

Specific Conditions

66. The permittee shall not exceed the emission rates set forth in the following table. The permittee shall demonstrate compliance with this condition by complying with Plantwide Condition #13. [Rule 19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

| SN  | Description              | Pollutant   | lb/hr | tpy |
|-----|--------------------------|-------------|-------|-----|
| 125 | Formic Acid Storage Tank | Formic Acid | 4.5   | 0.1 |

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### SN-132 and SN-133 Wet Strength Resin Loading Racks

#### Source Description

WSLOAD1(SN-132) and WSLOAD2(SN-133) are loading racks exclusively used to load wet strength resins.

#### Specific Conditions

67. The permittee shall not exceed the emission rates set forth in the following table. The permittee shall demonstrate compliance with this condition by complying with Plantwide Condition #13. [Rule 19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

| SN  | Description                        | Pollutant | lb/hr | tpy |
|-----|------------------------------------|-----------|-------|-----|
| 132 | Wet Strength Resin<br>Loading Rack | VOC       | 0.2   | 0.4 |
| 133 |                                    | VOC       | 0.2   | 0.4 |



SN-135 Aqua Ammonia Storage Tank

Source Description

The aqua ammonia storage tank provides ammonia to the kettles at the liquid resin manufacturing plant.

Specific Conditions

68. 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 #69. [Rule 18.801 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  |
|-----|---------------------------|-----------|-------|------|
| 135 | Aqua Ammonia Storage Tank | Ammonia   | 0.01  | 0.01 |

69. The permittee shall not have a throughput in excess of 9,653,410 pounds of aqueous ammonia at SN-135 during any consecutive twelve month period. [Rule 18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
70. The permittee shall maintain records which demonstrate compliance with the emission limit set in Specific Condition #69. These records may be used by the Department for enforcement purposes. Records shall be updated on a monthly basis, shall be kept on site, and shall be provided to Department personnel in accordance with General Provision #7. [Rule 18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

## SN-142 and 143 West Cooling Tower and East Cooling Tower

### Source Description

The Resin MACT RCI Process, liquid Resin Manufacturing Process, and Spray Dryer Process are cooled by two cooling towers, West and East, which share a common basin but are two separate emission sources.

### Specific Conditions

71. The permittee shall not exceed the emission rates set forth in the following table. Compliance with this condition is demonstrated by the equipment maximum flowrate and maximum TDS value for the Crossett area from USGS. [Rule 19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

| SN  | Description        | Pollutant        | lb/hr | tpy |
|-----|--------------------|------------------|-------|-----|
| 142 | West Cooling Tower | PM <sub>10</sub> | 0.8   | 3.4 |
|     |                    | VOC              | 0.1   | 0.5 |
| 143 | East Cooling Tower | PM <sub>10</sub> | 0.4   | 1.5 |
|     |                    | VOC              | 0.1   | 0.3 |

72. The permittee shall not exceed the emission rates set forth in the following table. Compliance with this condition is demonstrated by the equipment maximum flowrate and maximum TDS value for the Crossett area from USGS. [Rule 18.801 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  |
|-----|--------------------|------------------|-------|------|
| 142 | West Cooling Tower | PM               | 0.8   | 3.4  |
|     |                    | Chlorine         | 0.17  | 0.74 |
|     |                    | Total Other HAPs | 0.08  | 0.45 |
| 143 | East Cooling Tower | PM               | 0.8   | 3.4  |
|     |                    | Chlorine         | 0.17  | 0.74 |
|     |                    | Total Other HAPs | 0.1   | 0.45 |

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73. Visible emissions may not exceed the limits specified in the following table of this permit as measured by EPA Reference Method 9. Compliance with the opacity limit for this cooling tower is demonstrated by the equipment maximum flowrate and maximum TDS value for the Crossett area from USGS.

| SN         | Limit | Rule/Regulatory Citation                    |
|------------|-------|---------------------------------------------|
| 142<br>143 | 20%   | Rule 19.503 and 40 C.F.R.<br>§ 52 Subpart E |

74. The permittee shall monitor SN-142 and 143 as required by §63.1409(b) monthly for the first 6 months then quarterly thereafter to detect leaks. [Rule 19.304 and 40 C.F.R. § 63.1409]

### Spray Dry Resin Manufacturing sources

#### SN-03 Spray Dry Resin Process and Process Heater

##### Source Description

The Spray Dry Resin manufacturing process is part of the existing Resin MACT affected source. The process meets the Subpart OOO Definition of a back-end continuous process vent.

Liquid UF and PF resins manufactured in the batch process reactors are the primary feedstock for the Spray Dryer Process. Liquid resin is pumped into two base resin storage tanks (S-1, S-2) and diluted to reduce the solids content. These liquid resins are pumped through a heat exchanger and then injected into the 15.4 MM Btu/hr natural gas fired spray dryer chamber. The atomizing air used in the spray dryer is heated by a natural gas-fired burner. Combustion gases generated by the burner are exhausted through the final spray dryer stack. A drying agent contained in Tank S-3 is also injected into the spray dryer. After exiting the spray drying chamber, the dried resin is cooled before it enters a series of eight (six primary, two secondary) high efficiency cyclones. After the resin is separated from the gas stream, it enters a swirl trap which entrains the particles in a refrigerated air stream. Heavier particles fall through the swirl trap and discharge through a venturi valve where they also encounter the refrigerated air stream. The two air streams are combined and conveyed to the cooling conveyor cyclone collectors (two units). The finished product is then discharged through the packaging system. Emulsifier soap solution is produced in the same manner. Particulate-laden exhaust gases from the six primary cyclone collectors and the cooling conveyor cyclone (secondary) collectors are discharged through a baghouse (BH-4).

##### Specific Conditions

75. The permittee shall not exceed the emission rates set forth in the following table. The permittee shall demonstrate compliance with this condition by complying with Specific Condition #79 and Plantwide Condition #13. [Rule 19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

| SN | Description                                      | Pollutant        | lb/hr    | tpy     |
|----|--------------------------------------------------|------------------|----------|---------|
| 03 | Spray Dry Resin<br>Process and Process<br>Heater | PM <sub>10</sub> | 11.6     | 50.8    |
|    |                                                  | SO <sub>2</sub>  | 0.1      | 0.1     |
|    |                                                  | VOC              | 12.3     | 53.8    |
|    |                                                  | CO               | 0.6      | 2.7     |
|    |                                                  | NO <sub>x</sub>  | 1.6      | 7.0     |
|    |                                                  | Lead             | 0.000008 | 0.00004 |

76. 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

Plantwide Condition #13. [Rule 18.801 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     |
|----|--------------------------------------------------|--------------|----------|---------|
| 03 | Spray Dry Resin<br>Process and Process<br>Heater | PM           | 11.5     | 50.4    |
|    |                                                  | Ammonia      | 1.6      | 6.8     |
|    |                                                  | Formaldehyde | 4.8      | 21.0    |
|    |                                                  | Mercury      | 0.000004 | 0.00002 |
|    |                                                  | Methanol     | 9.4      | 41.0    |
|    |                                                  | Phenol       | 1.0      | 4.0     |
|    |                                                  | Other HAPs   | 1.5      | 6.6     |

77. Visible emissions may not exceed the limits specified in the following table of this permit as measured by EPA Reference Method 9. Compliance with this limit shall be demonstrated by Specific Condition #78.

| SN | Limit | Rule/Regulatory Citation                                                                        |
|----|-------|-------------------------------------------------------------------------------------------------|
| 03 | 5%    | Rule 18.501 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311 |

78. The permittee shall conduct weekly observations of the opacity from SN-03, BH-4, and keep a record of these observations. The permittee need only make these observations during weeks when the source operates for more than 2 hours during daylight hours. The permittee shall also maintain records of the hours of operation of the source each day.

Weekly observations may be performed by plant personnel that are not certified opacity readers. If any visible emissions are detected, the permittee shall immediately take action to identify the cause of the visible emissions, 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 plantwide condition.

- The date and time of the observation and the source observed.
- If visible emissions were detected.
- If visible emissions were detected, the cause of the emissions in excess 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.
- The name of the person conducting the opacity observation.

These records shall be kept on site and made available to Department personnel upon request. [Rule 19.702 and 40 C.F.R. § 52 Subpart E]

79. The permittee shall test the Spray Dry Resin Process and Process Heater, SN-03, for emissions of PM<sub>10</sub> to demonstrate compliance with the limits set forth in the table in Specific Condition #75 above. At the time of issuance of 117-AOP-R21, SN-03 is idled. The facility shall conduct the test within 180 days of the source restarting operation. This test shall be conducted using an EPA approved test method and in accordance with Plantwide Condition 3. [Rule 19.702 and 40 C.F.R. § 52 Subpart E]
80. The Spray Dry Resin Process and Process Heater (SN-03) is subject to Compliance Assurance Monitoring (CAM) for PM and shall comply with all applicable CAM provisions, including: [Rule 19.703, 40 C.F.R. § 52 Subpart E, and § 64.6]
- a. The permittee shall perform opacity checks of the baghouse exhaust once a week to check that the baghouse is operating in good working order as outlined in Specific Condition #78. The records shall be updated on a weekly basis. These records shall be kept on site, provided to Department personnel upon request and may be used by the Department for enforcement purposes.
  - b. The presence of any visible emissions from the operating baghouse shall be considered an indicator that a bag rupture or leak is occurring and that corrective action is necessary.
  - c. Upon observing visible emissions, an operator will check the pressure drop, pulsing system, and baghouse structure. If these checks do not allow the operator to correct the visible emissions, the maintenance department will be notified immediately. A complete maintenance inspection will be initiated within 12 hours of the observation and any necessary repairs completed within 12 hours or the source shall be taken out of service until the maintenance inspection and any necessary repairs can be made. Records of corrective action shall be kept onsite, updated daily, and made available to Department personnel upon request.
  - d. The permittee shall monitor and record the pressure drop of the baghouse. The pressure drop shall be maintained between 0.0 and 5 in H<sub>2</sub>O on an hourly basis calculated using 15 minute values. At least three of the four 15-minute values of any hour must be obtained while the process is operating for the hourly average value to be considered a valid hour.
81. The permittee shall submit reports as required by § 64.9(a). These records shall include: Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective actions taken; summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable); and a description of the actions taken to implement a QIP during the reporting period as specified in §64.8. Upon completion of a QIP, the owner or operator shall include in the next summary report documentation that the implementation of the plan has been completed and reduced the likelihood of similar levels of excursions or exceedances occurring. [Rule 19.304 and 40 C.F.R. § 64]

82. The permittee shall submit reports as required by § 64.9(b). The permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to §64.8 and any activities undertaken to implement a quality improvement plan, and other supporting information required to be maintained under this part (such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions [Rule 19.304 and 40 C.F.R. § 64])
83. The permittee shall reduce total organic HAP emissions to less than or equal to 4.3 kilograms of total organic HAP per megagram of resin produced (8.6 pounds of total organic HAP per ton of resin produced). [Rule 19.304 and 40 C.F.R. § 63.1405(b)(2)]
84. Continuous compliance with the limit in Specific Condition #83 shall be based on the daily average emission rate calculated for each operating day. The first continuous compliance average daily emission rate shall be calculated using the first 24-hour period or otherwise-specified operating day after the compliance date. Continuous compliance shall be determined by comparing the daily average emission rate to the mass emission limit specified in § 63.1405(b)(2)(i). The daily emission rate of organic HAP shall be calculated as required in § 63.1413 (h)(3). [Rule 19.304 and 40 C.F.R. § 63 Subpart OOO]
85. The permittee shall conduct an initial compliance test to show compliance with the limit of Specific Condition #83. This test shall be conducted in accordance with 40 C.F.R. § 63.1414 and in accordance with Plantwide Condition 3. If the permittee has already conducted testing to show compliance with Subpart OOO limits, this condition does not require additional testing. [Rule 19.304 and 40 C.F.R. § 63 Subpart OOO]
86. If an owner or operator is complying with the mass emission limit specified in § 63.1405(b)(2)(i), the sample of production records specified in § 63.1413(h)(3) shall be submitted in the Precompliance Report. [Rule 19.304 and 40 C.F.R. § 63 Subpart OOO]
87. The permittee shall submit periodic reports as outlined in §63.1417(f) semiannually no later than 60 days after the end of each 180 day period. [Rule 19.304 and 40 C.F.R. § 63.1417(f)]

SN-104 and SN-105 Base Liquid Resin Storage Tanks

Source Description

The Base Liquid Resin Storage Tanks, SD-1 and SD-2, store the PF resins produced at the liquid resin manufacturing plant which will be used in the production of spray dry resins.

Specific Conditions

88. The permittee shall not exceed the emission rates set forth in the following table. The permittee shall demonstrate compliance with this condition by complying with Plantwide Condition #13. [Rule 19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

| SN  | Description                    | Pollutant | lb/hr | tpy |
|-----|--------------------------------|-----------|-------|-----|
| 104 | Base Liquid Resin Storage Tank | VOC       | 0.1   | 0.1 |
| 105 | Base Liquid Resin Storage Tank | VOC       | 0.1   | 0.1 |

89. The permittee shall not exceed the emission rates set forth in the following table. The permittee shall demonstrate compliance with this condition by complying with Plantwide Condition #13. [Rule 18.801 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  |
|-----|---------------------------------|--------------|-------|------|
| 104 | Base Liquid Resin Storage Tanks | Formaldehyde | 0.01  | 0.01 |
|     |                                 | Methanol     | 0.05  | 0.04 |
|     |                                 | Phenol       | 0.01  | 0.01 |
| 105 | Base Liquid Resin Storage Tanks | Formaldehyde | 0.01  | 0.01 |
|     |                                 | Methanol     | 0.03  | 0.04 |
|     |                                 | Phenol       | 0.01  | 0.01 |



## SN-134 Wastewater Collection & Transfer System

### Source Description

The chemical facility has an extensive system of pipes, impoundments, trenches, sumps, and containment structures used to convey and manage wastewater produced by various processes and storm water that falls in process areas. These streams flow from the point of generation through a variety of intermediate structures to the adjacent papermill wastewater treatment system for treatment and discharge. The chemical plant's combined wastewater stream includes a variety of process and maintenance wastewater from the Resin MACT and WSR MACT process units including but not limited to: Reactors, seal water system, boil-out water, condensate, filter cleanings, scrubber discharges, blow downs, distillates, wash waters, maintenance waste water, and other miscellaneous wastewater streams. Because most of these streams contain low concentrations of organic materials and ammonia, a small percentage is emitted to atmosphere as fugitive emissions. The predominant source of the wastewater HAP loading and wastewater fugitive come from the Resin MACT "affected sources". As such, this wastewater collection and transfer system meets the Resin MACT definition of a Waste Management Unit (WMU) and is therefore part of the Resin MACT affected source.

### Specific Conditions

90. The permittee shall not exceed the emission rates set forth in the following table. The permittee shall demonstrate compliance with this condition by complying with Plantwide Condition #13. [Rule 19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

| SN  | Description                             | Pollutant | lb/hr | tpy |
|-----|-----------------------------------------|-----------|-------|-----|
| 134 | Wastewater Collection & Transfer System | VOC       | 5.5   | 3.2 |

91. The permittee shall not exceed the emission rates set forth in the following table. The permittee shall demonstrate compliance with this condition by complying with Plantwide Condition #13. [Rule 18.801 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  |
|-----|-----------------------------------------|--------------|-------|------|
| 134 | Wastewater Collection & Transfer System | Ammonia      | 0.04  | 0.11 |
|     |                                         | Formaldehyde | 0.40  | 0.51 |
|     |                                         | Methanol     | 4.98  | 2.2  |
|     |                                         | Phenol       | 0.01  | 0.01 |

SN-111 and SN-151 Wet Crude Tall Oil Storage Tank and Crude Tall Oil Storage Tank

Source Description

Tank T-56, SN-111, is a 27,500 gallon Wet Crude Tall Oil Storage Tank.

Tank T-4, SN-151, is a 153,330 gallon Crude Tall Oil Storage Tank.

Specific Conditions

92. The permittee shall not exceed the emission rates set forth in the following table. The permittee shall demonstrate compliance with this condition by complying with Plantwide Condition #13. [Rule 19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

| SN  | Description                           | Pollutant | lb/hr | tpy |
|-----|---------------------------------------|-----------|-------|-----|
| 111 | Wet Crude Tall Oil Storage Tank, T-56 | VOC       | 4.4   | 0.5 |
| 151 | Crude Tall Oil Storage Tank, T-4      | VOC       | 3.1   | 1.5 |

93. The permittee shall not have a throughput in excess of 35,000,000 gallons of crude tall oil through SN-111 or SN-151 during any consecutive twelve month period. [Rule 19.705, 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]
94. The permittee shall maintain records which demonstrate compliance with the emission limit set in Specific Condition #93. These records may be used by the Department for enforcement purposes. Records shall be updated on a monthly basis, shall be kept on site, and shall be provided to Department personnel in accordance with General Provision #7. [Rule 19.705 and 40 C.F.R. § 52 Subpart E]

## SN-153 Package Boiler

### Source Description

SN-153 is a 27.6 MMBtu/hr Natural gas-fired boiler.

### Specific Conditions

95. 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 Plantwide Condition #5. [Rule 19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

| SN  | Description    | Pollutant        | lb/hr | tpy  |
|-----|----------------|------------------|-------|------|
| 153 | Package Boiler | PM <sub>10</sub> | 0.2   | 0.9  |
|     |                | SO <sub>2</sub>  | 0.1   | 0.1  |
|     |                | VOC              | 0.2   | 0.7  |
|     |                | CO               | 2.3   | 9.7  |
|     |                | NO <sub>x</sub>  | 1.4   | 5.8  |
|     |                | Lead             | 0.01  | 0.01 |

96. The permittee shall not exceed the emission rates set forth in the following table. The permittee shall demonstrate compliance with this by compliance with Plantwide Condition #5. [Rule 18.801 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  |
|-----|----------------|------------------|-------|------|
| 153 | Package Boiler | PM               | 0.2   | 0.9  |
|     |                | Formaldehyde     | 0.01  | 0.01 |
|     |                | POM              | 0.001 | 0.01 |
|     |                | Chromium         | 0.01  | 0.01 |
|     |                | Total Other HAPs | 0.05  | 0.22 |

97. Visible emissions may not exceed the limits specified in the following table of this permit as measured by EPA Reference Method 9.

| SN  | Limit | Rule/Regulatory Citation                                                                        |
|-----|-------|-------------------------------------------------------------------------------------------------|
| 153 | 5%    | Rule 18.501 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311 |

98. The permittee shall perform annual tune-ups as required by 40 C.F.R. § 63 Subpart DDDDD. [Rule 19.304 and 40 C.F.R. § 63 Subpart DDDDD]

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99. The permittee shall maintain monthly records of the fuel combusted in SN-153. These records shall be kept in accordance with General Provision #7, kept on site, and made available to Department personnel upon request. [Rule 19.304 and 40 C.F.R. § 60 Subpart Dc]

## SN-154 Clayton Steam Generator Boiler

### Source Description

SN-154 is a 31.5 MMBtu/hr natural gas fired boiler used to supply steam to the facility.

### Specific Conditions

100. 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 Plantwide Condition #5. [Rule 19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

| SN  | Description                                                 | Pollutant        | lb/hr | tpy  |
|-----|-------------------------------------------------------------|------------------|-------|------|
| 154 | Clayton Steam Generator Boiler (31.5 MMBtu/hr, Natural Gas) | PM <sub>10</sub> | 0.3   | 1.1  |
|     |                                                             | SO <sub>2</sub>  | 0.1   | 0.1  |
|     |                                                             | VOC              | 0.2   | 0.8  |
|     |                                                             | CO               | 2.6   | 11.4 |
|     |                                                             | NO <sub>x</sub>  | 3.1   | 13.6 |
|     |                                                             | Lead             | 0.01  | 0.01 |

101. The permittee shall not exceed the emission rates set forth in the following table. The permittee shall demonstrate compliance with this by compliance with Plantwide Condition #5. [Rule 18.801 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  |
|-----|-------------------------------------------------------------|------------------|-------|------|
| 154 | Clayton Steam Generator Boiler (31.5 MMBtu/hr, Natural Gas) | PM               | 0.2   | 1.1  |
|     |                                                             | Formaldehyde     | 0.01  | 0.02 |
|     |                                                             | POM              | 0.01  | 0.01 |
|     |                                                             | Chromium         | 0.01  | 0.01 |
|     |                                                             | Total Other HAPs | 0.06  | 0.25 |

102. Visible emissions may not exceed the limits specified in the following table of this permit as measured by EPA Reference Method 9.

| SN  | Limit | Regulatory Citation                                                                             |
|-----|-------|-------------------------------------------------------------------------------------------------|
| 154 | 5%    | Rule 18.501 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311 |

103. The owner or operator of each affected facility shall record and maintain records of the amount of each fuel combusted during each operating day. As an alternative to meeting this requirement, 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 SO<sub>2</sub> 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. 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. [Rule 19.304 and 40 C.F.R. § 60.48c(g) and (i)]

104. The permittee shall conduct a tune-up of the boiler annually as specified in § 63.7540. [Rule 19.304 and 40 C.F.R. § 63.7500(e)]
105. Each annual tune-up specified in § 63.7540(a)(10) must be no more than 13 months after the previous tune-up. The first annual tune-up must be no later than 13 months after the initial startup of the source. [Rule 19.304 and 40 C.F.R. § 63.7515(d)]
106. 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. [Rule 19.304 and 40 C.F.R. § 63.7540(a)(10)]
  - a. 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; [40 C.F.R. § 63.7540(a)(10)(i)]
  - b. 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; [40 C.F.R. § 63.7540(a)(10)(ii)]
  - c. 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; [40 C.F.R. § 63.7540(a)(10)(iii)]
  - d. 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; [40 C.F.R. § 63.7540(a)(10)(iv)]

- e. 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 [40 C.F.R. § 63.7540(a)(10)(v)]
  - f. 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, [40 C.F.R. § 63.7540(a)(10)(vi)]
    - i. 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;
    - ii. A description of any corrective actions taken as a part of the tune-up; and
    - iii. 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.
107. 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. [Rule 19.304 and 40 C.F.R. § 63.7540(a)(13)]
108. 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), (xiv), and (xvii) of this section: [Rule 19.304 and 40 C.F.R. § 63.7550(c)(1)]
- a. Company and Facility name and address. [40 C.F.R. § 63.7550(c)(5)(i)]
  - b. Process unit information, emissions limitations, and operating parameter limitations. [40 C.F.R. § 63.7550(c)(5)(ii)]
  - c. Date of report and beginning and ending dates of the reporting period. [40 C.F.R. § 63.7550(c)(5)(iii)]
  - d. 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. [40 C.F.R. § 63.7550(c)(5)(xiv)]
  - e. 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. [40 C.F.R. § 63.7550(c)(5)(xvii)]
109. 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

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(<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. [Rule 19.304 and 40 C.F.R. § 63.7550(h)(3)]



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## **SECTION V: COMPLIANCE PLAN AND SCHEDULE**

Bakelite Chemicals LLC 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. [Rule 19.704, 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. [Rule 19.410(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. [Rule 19.702 and/or Rule 18.1002 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.

[Rule 19.702 and/or Rule 18.1002 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. [Rule 19.303 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. [Rule 26 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. [Rule 19.901 *et seq.* and 40 C.F.R. § 52 Subpart E]

#### Title VI Provisions

8. The permittee must comply with the standards for labeling of products using ozone-depleting substances. [40 C.F.R. § 82 Subpart E]
  - a. All containers containing a class I or class II substance stored or transported, all products containing a class I substance, and all products directly manufactured with a class I substance must bear the required warning statement if it is being introduced to interstate commerce pursuant to § 82.106.
  - b. The placement of the required warning statement must comply with the requirements pursuant to § 82.108.
  - c. The form of the label bearing the required warning must comply with the requirements pursuant to § 82.110.
  - d. No person may modify, remove, or interfere with the required warning statement except as described in § 82.112.
9. The permittee must comply with the standards for recycling and emissions reduction, except as provided for MVACs in Subpart B. [40 C.F.R. § 82 Subpart F]
  - a. Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to § 82.156.
  - b. Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to § 82.158.
  - c. Persons performing maintenance, service repair, or disposal of appliances must be certified by an approved technician certification program pursuant to § 82.161.
  - d. Persons disposing of small appliances, MVACs, and MVAC like appliances must comply with record keeping requirements pursuant to § 82.166. (“MVAC like appliance” as defined at § 82.152)
  - e. Persons owning commercial or industrial process refrigeration equipment must comply with leak repair requirements pursuant to § 82.156.
  - f. Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to § 82.166.

10. If the permittee manufactures, transforms, destroys, imports, or exports a class I or class II substance, the permittee is subject to all requirements as specified in 40 C.F.R. § 82 Subpart A, Production and Consumption Controls.
11. If the permittee performs a service on motor (fleet) vehicles when this service involves ozone depleting substance refrigerant (or regulated substitute substance) in the motor vehicle air conditioner (MVAC), the permittee is subject to all the applicable requirements as specified in 40 C.F.R. § 82 Subpart B, Servicing of Motor Vehicle Air Conditioners.

The term “motor vehicle” as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed. The term “MVAC” as used in Subpart B does not include the air tight sealed refrigeration system used as refrigerated cargo, or the system used on passenger buses using HCFC 22 refrigerant.

12. The permittee can switch from any ozone depleting substance to any alternative listed in the Significant New Alternatives Program (SNAP) promulgated pursuant to 40 C.F.R. § 82 Subpart G.
13. The permittee shall not exceed production or process limits specified in the following table for each of the facility’s production plants in any consecutive 12 month period. Compliance with this condition will be demonstrated by Plantwide Conditions #14. [Rule 19.705, 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>Plant</b>          | <b>Consecutive 12 Month Limit</b>                           |
|-----------------------|-------------------------------------------------------------|
| Spray Dry Resin (dry) | 25,000,000 pounds of Spray Dry Powdered Resin produced      |
| UFC Production Plant  | 54,666,667 pounds Urea-Formaldehyde Concentrate (60% basis) |
| Liquid Resin Plant    | 845,000,000 pounds of liquid resin produced                 |

14. The permittee shall maintain monthly records of the amounts of product produced or the amount of materials processed as per the limits established in Plantwide Condition #13 at each production plant at the facility. These records shall be updated by the 10<sup>th</sup> day of the month following the month to which the records pertain. These records shall be kept on sight and made available to Department personnel upon request. An annual total and each individual month’s data shall be submitted to the Department in accordance with General Provision #7. [Rule 19.705 and 40 C.F.R. § 52 Subpart E]

15. The permittee shall comply with the requirements of 40 C.F.R. § 63 Subpart H to control emissions from equipment leaks from equipment used in the production of wet strength resins. [Rule 19.304 and 40 C.F.R. § 63 Subpart W]
16. The permittee shall, for all equipment at the Liquid Resin Manufacturing plant used to manufacture wet strength resins and which are in organic HAP service, comply with the general standards as outlined in 40 C.F.R. § 63.162 of Subpart H and the equipment specific standards outlined in 40 C.F.R. §§ 63.163 to 63.176 of Subpart H. [Rule 19.304 and 40 C.F.R. § 63 Subpart W]
17. The permittee shall, for all equipment at the Liquid Resin Manufacturing plant used to manufacture wet strength resins and which are in organic HAP service, comply with the testing and procedure requirements as outlined in 40 C.F.R. § 63.180 of Subpart H. [Rule 19.304 and 40 C.F.R. § 63 Subpart W]
18. The permittee shall, for all equipment at the Liquid Resin Manufacturing plant used to manufacture wet strength resins and which are in organic HAP service, comply with the record keeping and reporting requirements outlined in 40 C.F.R. § 63.181 of Subpart H. [Rule 19.304 and 40 C.F.R. § 63 Subpart W]

§ 112(r) Risk Management Plan

19. The permittee, if subject to the provisions of § 112(r) of the Clean Air Act, shall develop and register a risk management plan with the appropriate agency. [Rule 26.402(B)(5) and 40 C.F.R. § 70.5(c)(5)]

## 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 Rule 18 and Rule 19 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 June 16, 2025. [Rule 26.304 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

| Description                                                | Category |
|------------------------------------------------------------|----------|
| 1,000 gal Dowtherm Storage Tank                            | A-3      |
| Urea Storage Silo                                          | A-13     |
| Kettle Urea Feed Hoppers                                   | A-13     |
| Epichlorohydrin Storage Tank M-7                           | A-13     |
| Urea Solution Storage Tank                                 | A-13     |
| Urea Solution Storage Tank                                 | A-13     |
| Wet Strength Resin and Urea Solution Dilute Tank           | A-13     |
| Onsite Storage of Epichlorohydrin: 2-7,200 gallon trailers | A-13     |
| RCI Distillate Tank                                        | A-13     |
| Crude Tall Oil Storage Tank                                | A-13     |
| Solid Resins Drying Pad                                    | A-13     |
| Epichlorohydrin Storage Tank M-27                          | A-13     |
| Process Water Storage Tanks (2) 112,000 gal each           | A-13     |
| DETA Storage Tank                                          | A-13     |
| Pre-polymer Storage Tank                                   | A-13     |
| Melamine Hopper                                            | A-13     |

## SECTION VIII: GENERAL PROVISIONS

1. Any terms or conditions included in this permit which specify and reference Arkansas Pollution Control & Ecology Commission Rule 18 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 Rule 18 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 Rule 18 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 Rule 26.701(B)]
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. [Rule 26.406]
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 Rule 26.701(A)(2)]
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 Rule 26.701(C)(2)]

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 Rule 26.701(C)(2)(b)]
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 Rule 26.2 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 Rule 26.701(C)(3)(a)]

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 Rule 19.601), 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.

[Rule 19.601, Rule 19.602, Rule 26.701(C)(3)(b), 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 26.701(E), 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 Rule 26 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 Rule 26.701(F)(1)]
- 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 Rule 26.701(F)(2)]
- 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 Rule 26.701(F)(3)]

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 Rule 26.701(F)(4)]
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 Rule 26.701(F)(5)]
15. The permittee must pay all permit fees in accordance with the procedures established in Rule 9. [40 C.F.R. § 70.6(a)(7) and Rule 26.701(G)]
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 Rule 26.701(H)]
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 Rule 26.701(I)(1)]
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 Rule 26.702(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 Rule 26.2. [40 C.F.R. § 70.6(c)(1) and Rule 26.703(A)]
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 Rule 26.703(B)]
  - 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 Rule 26.703(E)(3)]
  - 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: [Rule 26.704(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.

[Rule 18.314(A), Rule 19.416(A), Rule 26.1013(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.

[Rule 18.314(B), Rule 19.416(B), Rule 26.1013(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.

Bakelite Chemicals LLC  
Permit #: 1177-AOP-R23  
AFIN: 02-00028

[Rule 18.314(C), Rule 19.416(C), Rule 26.1013(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. [Rule 18.1001, Rule 19.701, 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**

40 C.F.R. § 60 Subpart Dc – *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*



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This content is from the eCFR and is authoritative but unofficial.

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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 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 (SO<sub>2</sub>).

**§ 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 (SO<sub>2</sub>) 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<sub>x</sub> standards under this subpart and the SO<sub>2</sub> 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 SO<sub>2</sub> 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 SO<sub>2</sub> 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 SO<sub>2</sub> 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 SO<sub>2</sub> 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 SO<sub>2</sub> 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 SO<sub>2</sub>.

**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 (SO<sub>2</sub>).

- (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 SO<sub>2</sub> in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 10 percent (0.10) of the potential SO<sub>2</sub> emission rate (90 percent reduction), nor cause to be discharged into the atmosphere from the affected facility any gases that contain SO<sub>2</sub> 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 SO<sub>2</sub> in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 10 percent (0.10) of the potential SO<sub>2</sub> emission rate (90 percent reduction), nor cause to be discharged into the atmosphere from the affected facility any gases that contain SO<sub>2</sub> 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 SO<sub>2</sub> in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 20 percent (0.20) of the potential SO<sub>2</sub> emission rate (80 percent reduction); nor

- (ii) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO<sub>2</sub> 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 SO<sub>2</sub> emissions limit or the 90 percent SO<sub>2</sub> 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 SO<sub>2</sub> emissions shall neither:
  - (i) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO<sub>2</sub> in excess of 50 percent (0.50) of the potential SO<sub>2</sub> emission rate (50 percent reduction); nor
  - (ii) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO<sub>2</sub> 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 SO<sub>2</sub> 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 SO<sub>2</sub> 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 SO<sub>2</sub> 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 SO<sub>2</sub> in excess of the following:

- (1) The percent of potential SO<sub>2</sub> emission rate or numerical SO<sub>2</sub> 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:

$E_s$  = SO<sub>2</sub> 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 SO<sub>2</sub> 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 SO<sub>2</sub> emission rate; and
  - (2) Emissions from the pretreated fuel (without either combustion or post-combustion SO<sub>2</sub> 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 SO<sub>2</sub> 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 SO<sub>2</sub> emissions is not subject to the PM limit in this section.

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### § 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 SO<sub>2</sub> 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 SO<sub>2</sub> emission limits under § 60.42c is based on the average percent reduction and the average SO<sub>2</sub> 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 SO<sub>2</sub> 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 SO<sub>2</sub> emission rate (E<sub>ho</sub>) and the 30-day average SO<sub>2</sub> emission rate (E<sub>ao</sub>). 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<sub>ao</sub> 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<sub>ho</sub> (E<sub>ho0</sub>) is used in Equation 19-19 of Method 19 of appendix A of this part to compute the adjusted E<sub>ao</sub> (E<sub>ao0</sub>). The E<sub>ho0</sub> is computed using the following formula:

$$E_{ho0} = \frac{E_{ho} - E_w(1 - X_k)}{X_k}$$

Where:

E<sub>ho0</sub> = Adjusted E<sub>ho</sub>, ng/J (lb/MMBtu);

E<sub>ho</sub> = Hourly SO<sub>2</sub> emission rate, ng/J (lb/MMBtu);

E<sub>w</sub> = SO<sub>2</sub> 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<sub>w</sub> 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<sub>w</sub> if the owner or operator elects to assume E<sub>w</sub> = 0.

X<sub>k</sub> = 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 SO<sub>2</sub> 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 SO<sub>2</sub> 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 SO<sub>2</sub> emission rate, in percent;

$\%R_g$  = SO<sub>2</sub> removal efficiency of the control device as determined by Method 19 of appendix A of this part, in percent; and

$\%R_f$  = SO<sub>2</sub> 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 SO<sub>2</sub> 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 SO<sub>2</sub> inlet rate, ng/J (lb/MMBtu).

- (ii) To compute  $E_{ai}$ , an adjusted hourly SO<sub>2</sub> 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 (O<sub>2</sub>) or carbon dioxide (CO<sub>2</sub>) 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 O<sub>2</sub> or CO<sub>2</sub> 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 O<sub>2</sub> (or CO<sub>2</sub>) 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 O<sub>2</sub> (or CO<sub>2</sub>), 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/](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 SO<sub>2</sub> emission limits under § 60.42c shall install, calibrate, maintain, and operate a CEMS for measuring SO<sub>2</sub> concentrations and either O<sub>2</sub> or CO<sub>2</sub> concentrations at the outlet of the SO<sub>2</sub> control device (or the outlet of the steam generating unit if no SO<sub>2</sub> 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 SO<sub>2</sub> concentrations and either O<sub>2</sub> or CO<sub>2</sub> concentrations at both the inlet and outlet of the SO<sub>2</sub> control device.
- (b) The 1-hour average SO<sub>2</sub> 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 SO<sub>2</sub> 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 SO<sub>2</sub> 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 SO<sub>2</sub> CEMS at the inlet to the SO<sub>2</sub> control device shall be 125 percent of the maximum estimated hourly potential SO<sub>2</sub> emission rate of the fuel combusted, and the span value of the SO<sub>2</sub> CEMS at the outlet from the SO<sub>2</sub> control device shall be 50 percent of the maximum estimated hourly potential SO<sub>2</sub> 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 SO<sub>2</sub> CEMS at the outlet from the SO<sub>2</sub> control device (or outlet of the steam generating unit if no SO<sub>2</sub> control device is used) shall be 125 percent of the maximum estimated hourly potential SO<sub>2</sub> emission rate of the fuel combusted.
- (d) As an alternative to operating a CEMS at the inlet to the SO<sub>2</sub> control device (or outlet of the steam generating unit if no SO<sub>2</sub> control device is used) as required under paragraph (a) of this section, an owner or operator may elect to determine the average SO<sub>2</sub> emission rate by sampling the fuel prior to combustion. As an alternative to operating a CEMS at the outlet from the SO<sub>2</sub> control device (or outlet of the steam generating unit if no SO<sub>2</sub> control device is used) as required under paragraph (a) of this section, an owner or operator may elect to determine the average SO<sub>2</sub> 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 SO<sub>2</sub> 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 SO<sub>2</sub> at the inlet or outlet of the SO<sub>2</sub> 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 SO<sub>2</sub> and CO<sub>2</sub> 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 SO<sub>2</sub> 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 SO<sub>2</sub> 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, SO<sub>2</sub>, 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 SO<sub>2</sub> 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 SO<sub>2</sub> 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 SO<sub>2</sub> 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 SO<sub>2</sub> 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 SO<sub>2</sub> 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 SO<sub>2</sub> 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 SO<sub>2</sub> or diluent (O<sub>2</sub> or CO<sub>2</sub>) 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 SO<sub>2</sub> 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 SO<sub>2</sub> 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]*

## **Appendix B**

40 C.F.R § 60 Subpart IIII - *New Source Performance Standards for Stationary Compression  
Ignition Internal Combustion Engines*





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This content is from the eCFR and is authoritative but unofficial.

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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

## What This Subpart Covers

**§ 60.4200** Am I subject to this subpart?

## 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?

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

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

## 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?

**§ 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?

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

## 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?

## Other Requirements for Owners and Operators

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

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

## Compliance Requirements

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

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

## 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?

**§ 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?

## 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?

## Special Requirements

- § 60.4215** What requirements must I meet for engines used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands?
- § 60.4216** What requirements must I meet for engines used in Alaska?
- § 60.4217** What emission standards must I meet if I am an owner or operator of a stationary internal combustion engine using special fuels?

## General Provisions

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

## Definitions

- § 60.4219** What definitions apply to this subpart?

### 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

### 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

### Table 3 to Subpart IIII of Part 60

Certification Requirements for Stationary Fire Pump Engines

### Table 4 to Subpart IIII of Part 60

Emission Standards for Stationary Fire Pump Engines

### Table 5 to Subpart IIII of Part 60

Labeling and Recordkeeping Requirements for New Stationary  
Emergency Engines

### Table 6 to Subpart IIII of Part 60

Optional 3-Mode Test Cycle for Stationary Fire Pump Engines

### Table 7 to Subpart IIII of Part 60

Requirements for Performance Tests for Stationary CI ICE With  
a Displacement of  $\geq 30$  Liters per Cylinder

### Table 8 to Subpart IIII of Part 60

Applicability of General Provisions to Subpart IIII

## 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<sub>x</sub> 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<sub>x</sub> 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<sub>x</sub> 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<sub>x</sub> 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<sub>x</sub> 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<sub>x</sub> 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<sub>x</sub> 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  $\text{NO}_x$  or PM at the control device inlet,

$C_o$  = concentration of  $\text{NO}_x$  or PM at the control device outlet, and

R = percent reduction of  $\text{NO}_x$  or PM emissions.

- (2) You must normalize the  $\text{NO}_x$  or PM concentrations at the inlet and outlet of the control device to a dry basis and to 15 percent oxygen ( $\text{O}_2$ ) using Equation 3 of this section, or an equivalent percent carbon dioxide ( $\text{CO}_2$ ) 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:

$C_{\text{adj}}$  = Calculated  $\text{NO}_x$  or PM concentration adjusted to 15 percent  $\text{O}_2$ .

$C_d$  = Measured concentration of  $\text{NO}_x$  or PM, uncorrected.

5.9 = 20.9 percent  $\text{O}_2$ –15 percent  $\text{O}_2$ , the defined  $\text{O}_2$  correction value, percent.

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

- (3) If pollutant concentrations are to be corrected to 15 percent  $\text{O}_2$  and  $\text{CO}_2$  concentration is measured in lieu of  $\text{O}_2$  concentration measurement, a  $\text{CO}_2$  correction factor is needed. Calculate the  $\text{CO}_2$  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,  $\text{dsm}^3/\text{J}$  ( $\text{dscf}/10^6 \text{ Btu}$ ).

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

- (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  $\text{NO}_x$  concentration in ppm.

$1.912 \times 10^{-3}$  = Conversion constant for ppm  $\text{NO}_x$  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](mailto: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](mailto: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<sub>x</sub> 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<sub>x</sub> 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 <sub>x</sub>                                                                                                                                                                                                                     | HC | NO <sub>x</sub> | 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 <sub>x</sub>                                                                                                                                                                                                                     | HC        | NO <sub>x</sub> | CO         | PM          |
| (HP<11)                    |                                                                                                                                                                                                                                            |           |                 |            |             |
| 8≤KW<19<br>(11≤HP<25)      | 9.5 (7.1)                                                                                                                                                                                                                                  |           |                 | 6.6 (4.9)  | 0.80 (0.60) |
| 19≤KW<37<br>(25≤HP<50)     | 9.5 (7.1)                                                                                                                                                                                                                                  |           |                 | 5.5 (4.1)  | 0.80 (0.60) |
| 37≤KW<56<br>(50≤HP<75)     |                                                                                                                                                                                                                                            |           | 9.2 (6.9)       |            |             |
| 56≤KW<75<br>(75≤HP<100)    |                                                                                                                                                                                                                                            |           | 9.2 (6.9)       |            |             |
| 75≤KW<130<br>(100≤HP<175)  |                                                                                                                                                                                                                                            |           | 9.2 (6.9)       |            |             |
| 130≤KW<225<br>(175≤HP<300) |                                                                                                                                                                                                                                            | 1.3 (1.0) | 9.2 (6.9)       | 11.4 (8.5) | 0.54 (0.40) |
| 225≤KW<450<br>(300≤HP<600) |                                                                                                                                                                                                                                            | 1.3 (1.0) | 9.2 (6.9)       | 11.4 (8.5) | 0.54 (0.40) |
| 450≤KW≤560<br>(600≤HP≤750) |                                                                                                                                                                                                                                            | 1.3 (1.0) | 9.2 (6.9)       | 11.4 (8.5) | 0.54 (0.40) |
| KW>560<br>(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 <sub>x</sub> + NMHC | CO        | PM          |
| KW<8<br>(HP<11)       | 2008 +                                                                                                                                                          | 7.5 (5.6)              | 8.0 (6.0) | 0.40 (0.30) |
| 8≤KW<19<br>(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 <sub>x</sub> + NMHC | CO        | PM          |
| 19≤KW<37<br>(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) <sup>1</sup> |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| KW<75<br>(HP<100)          | 2011                                                                                                                          |
| 75≤KW<130<br>(100≤HP<175)  | 2010                                                                                                                          |
| 130≤KW≤560<br>(175≤HP≤750) | 2009                                                                                                                          |
| KW>560<br>(HP>750)         | 2008                                                                                                                          |

<sup>1</sup> 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<br>g/KW-hr<br>(g/HP-hr) |           |             |
|-------------------------|---------------------|--------------------------------------------------------------------------------|-----------|-------------|
|                         |                     | NMHC + NO <sub>x</sub>                                                         | 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 + <sup>1</sup> | 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 + <sup>1</sup> | 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 + <sup>2</sup> | 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 + <sup>3</sup> | 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) |

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> 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<br>g/KW-hr<br>(g/HP-hr)      |                                                                                   |                                                                                             |
|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
|                                                                                                                                              |                                                                                                          | NMHC + NO <sub>x</sub>                                                              | CO                                                                                | PM                                                                                          |
| (300≤HP<600)<br>225≤KW<450<br>(300≤HP<600)<br>450≤KW≤560<br>(600≤HP≤750)<br>450≤KW≤560<br>(600≤HP≤750)<br>KW>560 (HP>750)<br>KW>560 (HP>750) | earlier<br>2009 + <sup>3</sup><br><br>2008 and<br>earlier<br>2009 +<br><br>2007 and<br>earlier<br>2008 + | <br>4.0 (3.0)<br><br>10.5 (7.8)<br><br>4.0 (3.0)<br><br>10.5 (7.8)<br><br>6.4 (4.8) | <br>3.5 (2.6)<br><br>3.5 (2.6)<br><br>3.5 (2.6)<br><br>3.5 (2.6)<br><br>3.5 (2.6) | <br>0.20 (0.15)<br><br>0.54 (0.40)<br><br>0.20 (0.15)<br><br>0.54 (0.40)<br><br>0.20 (0.15) |

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> 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 <sup>1</sup> | Torque (percent) <sup>2</sup> | Weighting factors |
|----------|---------------------------|-------------------------------|-------------------|
| 1        | Rated                     | 100                           | 0.30              |
| 2        | Rated                     | 75                            | 0.50              |
| 3        | Rated                     | 50                            | 0.20              |

<sup>1</sup> Engine speed:  $\pm 2$  percent of point.

<sup>2</sup> Torque: NFPA certified nameplate HP for 100 percent point. All points should be  $\pm 2$  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 $\geq 30$ 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  $\geq 30$  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 $\geq 30$ liters per cylinder | a. Reduce NO <sub>x</sub> 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 <sub>x</sub> , O <sub>2</sub> , and moisture measurement, ducts $\leq 6$ inches in diameter may be sampled at a single point located at the duct centroid and ducts $> 6$ and $\leq 12$ 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      |                                                                                        | <p>ii. Measure O<sub>2</sub> at the inlet and outlet of the control device;</p> <p>iii. If necessary, measure moisture content at the inlet and outlet of the control device; and</p> <p>iv. Measure NO<sub>x</sub> at the inlet and outlet of the control device.</p> | <p>(1) Method 3, 3A, or 3B of 40 CFR part 60, appendix A-2</p> <p>(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)</p> <p>(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)</p> | <p>testing and select sampling points according to Section 8.1.2 of Method 7E of 40 CFR part 60, appendix A-4.</p> <p>(b) Measurements to determine O<sub>2</sub> concentration must be made at the same time as the measurements for NO<sub>x</sub> concentration.</p> <p>(c) Measurements to determine moisture content must be made at the same time as the measurements for NO<sub>x</sub> concentration.</p> <p>(d) NO<sub>x</sub> concentration must be at 15 percent O<sub>2</sub>, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.</p> <p>(a) For NO<sub>x</sub>, O<sub>2</sub>, and moisture measurement, ducts ≤6 inches in diameter may be sampled at a single point located at the duct centroid and ducts &gt;6 and ≤12 inches in diameter may be sampled at 3</p> |
|      | b. Limit the concentration of NO <sub>x</sub> 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.                   | <p>points at the exhaust of the stationary internal combustion engine;</p> <p>ii. Determine the O<sub>2</sub> concentration of the stationary internal combustion engine exhaust at the sampling port location;</p> <p>iii. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and</p> <p>iv. Measure NO<sub>x</sub> at the exhaust of</p> | <p>(1) Method 3, 3A, or 3B of 40 CFR part 60, appendix A-2</p> <p>(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)</p> <p>(3) Method 7E of 40 CFR part 60,</p> | <p>traverse points located at 16.7, 50.0, and 83.3% of the measurement line ('3-point long line'). If the duct is &gt;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.</p> <p>(b) Measurements to determine O<sub>2</sub> concentration must be made at the same time as the measurement for NO<sub>x</sub> concentration.</p> <p>(c) Measurements to determine moisture content must be made at the same time as the measurement for NO<sub>x</sub> concentration.</p> <p>(d) NO<sub>x</sub> concentration must be at 15 percent O<sub>2</sub>, dry basis. Results of this test consist of the average of the</p> |



| 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;<br>ii. Measure O <sub>2</sub> at the inlet and outlet of the control device;<br>iii. If necessary, measure moisture content at the inlet and outlet of the control device; and<br>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<br><br>(2) Method 3, 3A, or 3B of 40 CFR part 60, appendix A-2<br><br>(3) Method 4 of 40 CFR part 60, appendix A-3<br><br>(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.<br><br>(b) Measurements to determine O <sub>2</sub> concentration must be made at the same time as the measurements for PM concentration.<br><br>(c) Measurements to determine and moisture content must be made at the same time as the measurements for PM concentration.<br><br>(d) PM concentration must be at 15 percent O <sub>2</sub> , 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 | <p>sampling port location and the number of traverse points;</p> <p>ii. Determine the O<sub>2</sub> concentration of the stationary internal combustion engine exhaust at the sampling port location;</p> <p>iii. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and</p> <p>iv. Measure PM at the exhaust of the stationary internal combustion engine.</p> | <p>or 1A of 40 CFR part 60, appendix A-1</p> <p>(2) Method 3, 3A, or 3B of 40 CFR part 60, appendix A-2</p> <p>(3) Method 4 of 40 CFR part 60, appendix A-3</p> <p>(4) Method 5 of 40 CFR part 60, appendix A-3</p> | <p>sampling site must be located at the outlet of the control device.</p> <p>(b) Measurements to determine O<sub>2</sub> concentration must be made at the same time as the measurements for PM concentration.</p> <p>(c) Measurements to determine moisture content must be made at the same time as the measurements for PM concentration.</p> <p>(d) PM concentration must be at 15 percent O<sub>2</sub>, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.</p> |

[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                |                                                                                                                                          |
| § 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        |                    |             |

## **Appendix C**

40 C.F.R. § 63 Subpart W – *National Emission Standards for Hazardous Air Pollutants for Epoxy Resins Production and Non - Nylon Polyamides Production*



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This content is from the eCFR and is authoritative but unofficial.

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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 W** National Emission Standards for Hazardous Air Pollutants for Epoxy Resins Production and Non-Nylon Polyamides Production

§ 63.520 Applicability and designation of sources.

§ 63.521 Compliance schedule.

§ 63.522 Definitions.

§ 63.523 Standards for basic liquid resins manufacturers.

§ 63.524 Standards for wet strength resins manufacturers.

§ 63.525 Compliance and performance testing.

§ 63.526 Monitoring requirements.

§ 63.527 Recordkeeping requirements.

§ 63.528 Reporting requirements.

§ 63.529 Implementation and enforcement.

#### **Table 1 to Subpart W of Part 63**

General Provisions Applicability to Subpart W

#### **Table 2 to Subpart W of Part 63**

Toxic Equivalency Factors

#### **Subpart W—National Emission Standards for Hazardous Air Pollutants for Epoxy Resins Production and Non-Nylon Polyamides Production**

**Source:** 60 FR 12676, Mar. 8, 1995, unless otherwise noted.

#### **§ 63.520 Applicability and designation of sources.**

The provisions of this subpart apply to all existing, new, and reconstructed manufacturers of basic liquid epoxy resins (BLR) and manufacturers of wet strength resins (WSR) that are located at a plant site that is a major source, as defined in section 112(a) of the Clean Air Act. Research and development facilities, as defined in § 63.522, are exempt from the provisions of this subpart. The affected source is also defined in § 63.522. If a change occurs to an existing source that does not constitute reconstruction then the additions have to meet the existing source

requirements of the MACT standards. Any reconstruction of an existing source, or construction of a new source, must meet the new source standard. Affected sources are also subject to certain requirements of subpart A of this part, as specified in Table 1 of this subpart.

### § 63.521 Compliance schedule.

- (a) Owners or operators of existing affected BLR and WSR sources shall comply with the applicable provisions of this subpart within 3 years of the promulgation date.
- (b) New and reconstructed sources subject to this subpart shall be in compliance with the applicable provisions of this subpart upon startup.
- (c) All affected sources that commenced construction or reconstruction on or before April 25, 2023, must be in compliance with the requirements in § 63.523(d), § 63.524(a)(3), (b)(3), and (c), § 63.525(a), (e), (j), (k), and (l), § 63.527(f) and (g), and § 63.528(a)(4) 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 in § 63.523(d), § 63.524(a)(3), (b)(3), and (c), § 63.525(a), (e), (j), (k), and (l), § 63.527(f) and (g), and § 63.528(a)(4) upon initial startup, or on July 15, 2024, whichever is later.

[60 FR 12676, Mar. 8, 1995, as amended at 89 FR 43268, May 16, 2024]

### § 63.522 Definitions.

Terms used in this subpart are defined in the Act, in subpart A of this part, or in this section as follows:

**Administrator** means the Administrator of the U.S. Environmental Protection Agency, or any official designee of the Administrator.

**Affected source** means all HAP emission points within a facility that are related to the production of BLR or WSR, including process vents, storage tanks, wastewater systems, equipment leaks, and heat exchange systems.

**Basic liquid epoxy resins (BLR)** means resins made by reacting epichlorohydrin and bisphenol A to form diglycidyl ether of bisphenol-A (DGEBA).

**Batch emission episode** means a discrete venting episode that may be associated with a single unit operation. For example, a displacement of vapor resulting from the charging of a vessel with HAP 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 vessel vapor space. Both emission episodes may occur in the same vessel or unit operation. There are possibly other emission episodes that may occur from the vessel or other process equipment, depending on process operations.

**Batch process** refers to a discontinuous process involving the bulk movement of material through sequential manufacturing steps. Mass, temperature, concentration, and other properties of a system vary with time. Addition of raw material and withdrawal of product do not typically occur simultaneously in a batch process.

**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 or back into the process.



**Continuous process** means a process where the inputs and outputs flow continuously throughout the duration of the process. Continuous processes are typically steady-state.

**Dioxins and furans** means total tetra- through octachlorinated dibenzo-p-dioxins and dibenzofurans.

**Drain system** means the system used to convey wastewater streams from a process unit, product storage tank, or feed storage tank to a waste management unit. The term includes all process drains and junction boxes, together with their associated sewer lines and other junction boxes, manholes, sumps, and lift stations, down to the receiving waste management unit. 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 drain systems, is excluded from this definition.

**Equipment leaks** means, before July 15, 2027, emissions of hazardous air pollutants from a connector, pump, compressor, agitator, pressure relief device, sampling connection system, open-ended valve or line, or instrumentation system in organic hazardous air pollutant service. On and after July 15, 2027, equipment leaks means emissions of hazardous air pollutants from a connector, pump, compressor, agitator, pressure relief device, sampling connection system, open-ended valve or line, valve, or instrumentation system in organic hazardous air pollutant service.

**Heat Exchange System** means any cooling tower system or once-through cooling water system (e.g., river or pond water). A heat exchange system can include more than one heat exchanger and can include an entire recirculating or once-through cooling system.

**In organic hazardous air pollutant or 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'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.

**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.

**Process vent** means a point of emission from a unit operation. Typical process vents include condenser vents, vacuum pumps, steam ejectors, and atmospheric vents from reactors and other process vessels.

**Production-based emission rate** means a ratio of the amount of HAP emitted to the amount of BLR or WSR produced.

**Research and development facility** means laboratory 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.

**Storage tank** means a tank or other vessel that is used to store liquids that contain one or more HAP compounds.

**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. There may be several emission episodes within a single unit operation.

**Waste management unit** means any component, piece of equipment, structure, or transport mechanism used in storing, treating, or disposing of wastewater streams, or conveying wastewater between storage, treatment, or disposal operations.

**Wastewater** means aqueous liquid waste streams exiting equipment at an affected source.

**Wastewater system** means a system made up of a drain system and one or more waste management units.

**Wet strength resins (WSR)** means polyamide/ epichlorohydrin condensates which are used to increase the tensile strength of paper products.

[60 FR 12676, Mar. 8, 1995, as amended at 65 FR 26497, May 8, 2000; 89 FR 43268, May 16, 2024]

## § 63.523 Standards for basic liquid resins manufacturers.

- (a) Owners or operators of existing affected BLR sources shall operate sources such that the rate of emissions of hazardous air pollutants from all process vents, storage tanks, and wastewater systems combined shall not exceed 130 pounds per 1 million pounds of BLR produced, and comply with the dioxin and furans emissions limit for process vents specified in paragraph (e) of this section.
- (b) Owners or operators of new or reconstructed affected BLR sources shall reduce uncontrolled emissions from the sum of uncontrolled process vents, storage tanks, and wastewater systems by 98 percent, or limit the total emissions from these emission points to 5,000 pounds per year.
  - (1) For process vents, uncontrolled emissions are defined as gaseous emission streams past the last recovery device.
  - (2) For storage tanks, uncontrolled emissions are defined as emissions calculated according to the methodology specified in § 63.150(g)(3).
  - (3) For wastewater systems, uncontrolled emissions are the total amount of HAP discharged to the drain system.
- (c) Owners or operators of existing, new, or reconstructed affected BLR sources shall comply with the requirements of subpart H of this part to control emissions from equipment leaks.
- (d) For each existing, new, or reconstructed affected BLR source, beginning no later than the compliance dates specified in § 63.521(c), the owner or operator must comply with the requirements of § 63.104 for heat exchange systems, with the exceptions noted in paragraphs (d)(1) through (8) of this section.
  - (1) When the term "chemical manufacturing process unit" is used in § 63.104, the term "existing, new, or reconstructed affected BLR source" shall apply for the purposes of this subpart.
  - (2) When the phrase "a chemical manufacturing process unit meeting the conditions of § 63.100(b)(1) through (b)(3), except for chemical manufacturing process units meeting the condition specified in § 63.100(c)" is used in the first sentence of § 63.104(a), the term "an existing, new, or reconstructed affected BLR source" shall apply for the purposes of this subpart. When the phrase "a chemical manufacturing process unit meeting the conditions of § 63.100(b)(1) through (b)(3)," is used in the last sentence of § 63.104(a), the term "an existing, new, or reconstructed affected BLR source" shall apply for purposes of this subpart.
  - (3) When § 63.104 refers to table 4 to subpart F of this part or table 9 of subpart G of this part, the owner or operator is required to consider all hazardous air pollutants.

- (4) When § 63.104(c)(3) specifies the monitoring plan retention requirements, and when § 63.104(f)(1) refers to the record retention requirements in § 63.103(c)(1) of subpart F of this part, the requirements in § 63.527(d) shall apply, for the purposes of this subpart.
- (5) When § 63.104(f)(2) requires information to be reported in the Periodic Reports required by § 63.152(c), the owner or operator shall instead report the information specified in § 63.104(f)(2) in the Periodic Reports required by § 63.528(a), for the purposes of this subpart.
- (6) The compliance date for heat exchange systems subject to the provisions of this section is specified in § 63.521(c).
- (7) Substitute "Beginning no later than the compliance dates specified in § 63.521(c)," for each occurrence of "Beginning no later than the compliance dates specified in § 63.100(k)(10),".
- (8) § 63.104(k) does not apply. Instead for each existing, new, or reconstructed affected BLR source, beginning no later than the compliance dates specified in § 63.521(c), owners and operators must not inject water into or dispose of water through any heat exchange system in an affected source if the water is considered wastewater as defined in § 63.522.
- (e) For each existing, new, or reconstructed affected BLR source, beginning no later than the compliance dates specified in § 63.521(c), the owner or operator of a process vent 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.

[60 FR 12676, Mar. 8, 1995, as amended at 89 FR 43269, May 16, 2024]

#### **§ 63.524 Standards for wet strength resins manufacturers.**

- (a) In addition to the requirements specified in paragraph (c) of this section, and except as specified in paragraph (a)(3) of this section, owners or operators of existing affected WSR sources shall either:
  - (1) Limit the total emissions of hazardous air pollutants from all process vents, storage tanks, and wastewater systems to 10 pounds per 1 million pounds of wet strength resins produced; or
  - (2) Comply with the requirements of subpart H of this part to control emissions from equipment leaks.
  - (3) For each existing affected WSR source, beginning no later than the compliance dates specified in § 63.521(c), the owner or operator shall comply with both paragraphs (a)(1) and (a)(2) of this section and must reduce emissions of dioxins and furans (toxic equivalency basis) from each process vent that contains chlorine, hydrogen chloride, or any other chlorinated compound to a concentration of 0.054 nanograms per standard cubic meter on a dry basis corrected to 3 percent oxygen.
- (b) In addition to the requirements specified in paragraph (c) of this section, and except as specified in paragraph (b)(3) of this section, owners or operators of new or reconstructed affected WSR sources shall either:
  - (1) Limit the total emissions of hazardous air pollutants from all process vents, storage tanks, and wastewater systems to 7 pounds per 1 million pounds of wet strength resins produced; or
  - (2) Comply with the requirements of subpart H of this part to control emissions from equipment leaks.

- (3) For each new or reconstructed affected WSR source, beginning no later than the compliance dates specified in § 63.521(c), the owner or operator shall comply with both paragraphs (b)(1) and (2) of this section and must reduce emissions of dioxins and furans (toxic equivalency basis) from each process vent that contains chlorine, hydrogen chloride, or any other chlorinated compound to a concentration of 0.054 nanograms per standard cubic meter on a dry basis corrected to 3 percent oxygen.
- (c) For each existing, new, or reconstructed affected WSR source, beginning no later than the compliance dates specified in § 63.521(c), the owner or operator shall comply with the requirements of § 63.104 for heat exchange systems, with the exceptions noted in paragraphs (d)(1) through (8) of this section.
  - (1) When the term “chemical manufacturing process unit” is used in § 63.104, the term “existing, new, or reconstructed affected WSR source” shall apply for the purposes of this subpart.
  - (2) When the phrase “a chemical manufacturing process unit meeting the conditions of § 63.100(b)(1) through (b)(3) of this subpart, except for chemical manufacturing process units meeting the condition specified in § 63.100(c) of this subpart” is used in the first sentence of § 63.104(a), the term “an existing, new, or reconstructed affected WSR source” shall apply for the purposes of this subpart. When the phrase “a chemical manufacturing process unit meeting the conditions of § 63.100(b)(1) through (b)(3),” is used in the last sentence of § 63.104(a), the term “an existing, new, or reconstructed affected WSR source” shall apply for purposes of this subpart.
  - (3) When § 63.104 refers to table 4 of subpart F of this part or Table 9 of subpart G of this part, the owner or operator is required to consider all hazardous air pollutants.
  - (4) When § 63.104(c)(3) specifies the monitoring plan retention requirements, and when § 63.104(f)(1) refers to the record retention requirements in § 63.103(c)(1), the requirements in § 63.527(d) shall apply, for the purposes of this subpart.
  - (5) When § 63.104(f)(2) requires information to be reported in the Periodic Reports required by § 63.152(c), the owner or operator shall instead report the information specified in § 63.104(f)(2) in the Periodic Reports required by § 63.528(a), for the purposes of this subpart.
  - (6) The compliance date for heat exchange systems subject to the provisions of this section is specified in § 63.521(c).
  - (7) Substitute “Beginning no later than the compliance dates specified in § 63.521(c),” for each occurrence of “Beginning no later than the compliance dates specified in § 63.100(k)(10),
  - (8) § 63.104(k) of subpart F of this part does not apply. Instead for each existing, new, or reconstructed affected WSR source, beginning no later than the compliance dates specified in § 63.521(c), owners and operators must not inject water into (or dispose of water through) any heat exchange system in an affected source if the water is considered wastewater as defined in § 63.522.

[60 FR 12676, Mar. 8, 1995, as amended at 89 FR 43269, May 16, 2024]

### § 63.525 Compliance and performance testing.

- (a) The owner or operator of any existing affected BLR source shall, in order to demonstrate compliance with the applicable emission limits, determine the emission rate from all process vent, storage tank, and wastewater system emission points using the methods described below. Except as specified in paragraph

(l) of this section, compliance tests shall be performed under normal operating conditions. Beginning no later than the compliance dates specified in § 63.521(c), conduct subsequent performance tests no later than 60 calendar months after the previous performance test.

(1) Except as specified in paragraph (m) of this section, the owner or operator shall use the EPA test methods from 40 CFR part 60, listed in paragraphs (a)(1) (i) through (iii) of this section, to determine emissions from process vents. Testing of process vents on equipment operating as part of a continuous process will consist of conducting three 1-hour runs. Gas stream volumetric flow rates shall be measured every 15 minutes during each 1-hour run. Organic HAP or TOC concentration shall be determined from samples collected in an integrated sample over the duration of each 1-hour test run, or from grab samples collected simultaneously with the flow rate measurements (every 15 minutes). If an integrated sample is collected for laboratory analysis, the sampling rate shall be adjusted proportionally to reflect variations in flow rate. If the flow of gaseous emissions is intermittent, determination of emissions from process vents shall be performed according to the methods specified in paragraph (e) of this section. For process vents with continuous gas streams, the emission rate used to determine compliance shall be the average emission rate of the 3 test runs. For process vents with intermittent emission streams, the calculated emission rate or the emission rate from a single test run may be used to determine compliance.

(i) Method 1 or 1A of appendix A-1 to 40 CFR part 60 as appropriate, shall be used for selection of the sampling sites if the flow measuring device is a pitot tube. A traverse shall be conducted before and after each 1-hour sampling period. No traverse is necessary when using Method 2A or 2D of appendix A-2 to 40 CFR part 60 to determine flow rate.

(ii) Method 2, 2A, 2C or 2D of appendix A-1 to part 60 of this chapter, as appropriate, shall be used for the determination of gas stream volumetric flow rate. If Method 2 or 2C is used, the velocity measurements shall be made at a single point, in conjunction with the traverse, to establish an average velocity across the stack.

(iii) Method 25A and/or Methods 18 and 25A of appendices A-6 and A-7 to 40 CFR part 60, as appropriate, must be used to determine the concentration of HAP in the streams. 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.

(iv) Initial determination of de minimis status for process vents may be made by engineering assessment, as specified in § 63.526(a)(1)(iv).

(2) Emissions from wastewater treatment systems shall be determined in accordance with the methods described in 40 CFR part 63, appendix C.

(3) Emissions from storage tanks shall be calculated in accordance with the methods specified in § 63.150(g)(3).

(b) The owner or operator of any existing affected BLR source shall determine a production-based emission rate for each emission point by dividing the emission rate of each emission point by the BLR production rate of the source. The production rate shall be based on normal operations.

(1) The production-based emission rate for process vents shall be calculated by dividing the average emission rate by the average production rate.

- (2) The production-based emission rate for storage tanks shall be calculated by dividing annual emissions for each storage tank emission point by the production rate for a one-year period. The production rate shall be calculated using the same data used to calculate the production-based emission rate in paragraph (b)(1) of this section, converted to an annual rate.
- (3) The production-based emission rate for wastewater systems shall be calculated by dividing annual emissions for each wastewater system emission point by the production rate for one-year period. The production rate shall be calculated using the same data used to calculate the production-based emission rate in paragraph (b)(1) of this section, converted to an annual rate.
- (c) The owner or operator of an existing affected BLR source shall calculate the total emissions per product produced by summing the production-based emissions for all process vent, storage tank, and wastewater system emission points according to the following equation:

$$E = \Sigma PV + \Sigma ST + \Sigma WW$$

where:

E = emissions, pounds (lb) HAP per million (MM) lb product;

PV = process vent emissions, lb HAP/MM lb product;

ST = storage tank emissions, lb HAP/MM lb product; and

WW = wastewater system emissions, lb HAP/MM lb product.

The source is in compliance with the standard for process vents, storage tanks, and wastewater systems if the sum of the equation is less than the applicable emission limit from § 63.523(a).

- (d) The owner or operator of any new or reconstructed affected BLR source shall demonstrate compliance using the methods described in this section.
  - (1) Any owner or operator who elects to comply with § 63.523(b) by achieving 98 percent control of emissions from process vents, storage tanks, and wastewater systems shall demonstrate compliance according to the requirements of paragraphs (d)(1) (i) through (iv) of this section.
    - (i) The owner or operator shall perform testing as specified in paragraph (a)(1) of this section to determine controlled and uncontrolled emissions from process vents. Sampling points for determining uncontrolled emissions shall be located based on the definition of uncontrolled process vents in § 63.523(b)(1).
    - (ii) The owner or operator shall calculate controlled and uncontrolled emissions from storage tanks in accordance with the methods specified in § 63.150(g)(3).
    - (iii) The owner or operator shall determine controlled and uncontrolled emissions from wastewater systems using the methodology of 40 CFR part 63, appendix C. Uncontrolled emission calculations shall be consistent with the definition of uncontrolled wastewater system emissions in § 63.523(b)(3).
    - (iv) The owner or operator shall calculate the percent reduction in emissions from process vents, storage tanks, and wastewater systems combined. The affected source is in compliance if the emission reduction is greater than or equal to 98 percent.

- (2) Any owner or operator who elects to comply with § 63.523(b) by limiting HAP emissions from process vents, storage tanks, and wastewater systems to 5,000 pounds per year or less shall demonstrate compliance according to the requirements of paragraphs (d)(2) (i) and (ii) of this section.
  - (i) Emissions from process vents, storage tanks, and wastewater systems shall be determined according to paragraphs (a) (1) through (3) of this section. Emissions shall be converted to annual emissions. Annual emission calculations shall reflect production levels representative of normal operating conditions.
  - (ii) The owner or operator shall calculate total emissions from all process vent, storage tank, and wastewater system emission points. The affected source is in compliance with the standard if total emissions are less than or equal to 5,000 lb/yr.
- (3) To demonstrate compliance with the process vent dioxins and furans emission limit, the owner or operator must use the procedures of paragraph (m) of this section.
- (e) The owner or operator of any existing, new, or reconstructed WSR source that is subject to the emission limit for process vents, storage tanks, and wastewater systems shall demonstrate compliance by determining emissions for all process vent, storage tank, and wastewater systems emission points using the methods described in this section. The owner or operator of any existing, new, or reconstructed WSR source that is subject to the process vent dioxins and furans emission limit must demonstrate compliance by following the procedures in paragraph (e)(3) of this section. Beginning no later than the compliance dates specified in § 63.521(c), conduct subsequent performance tests no later than 60 calendar months after the previous performance test.
  - (1) Emissions of HAP reactor process vents shall be calculated for each batch emission episode according to the methodologies described in paragraph (e)(1) of this section.
    - (i) Emissions from vapor displacement due to transfer of material into or out of the reactor shall be calculated according to the following equation:

$$E = \frac{(y_i)(V)(P_T)(MW)}{(R)(T)}$$

where:

E = mass emission rate;

$y_i$  = saturated mole fraction of HAP in the vapor phase;

V = volume of gas displaced from the vessel;

R = ideal gas law constant;

T = temperature of the vessel vapor space; absolute;

$P_T$  = pressure of the vessel vapor space; and

MW = molecular weight of the HAP.

- (ii) Emissions from reactor purging shall be calculated using the methodology described in paragraph (e)(1)(i) of this section, except that for purge flow rates greater than 100 standard cubic feet per minute (scfm), the mole fraction of HAP will be assumed to be 25 percent of the saturated value.
- (iii) Emissions caused by heating of the reactor vessel shall be calculated according to the following methodology:

$$E = \frac{\frac{\sum (P_i)_{T1}}{Pa_1} + \frac{\sum (P_i)_{T2}}{Pa_2}}{2} \times \Delta\eta \times MW_{HAP}$$

where:

E = mass of HAP vapor displaced from the vessel being heated up;

$(P_i)_{Tn}$  = partial pressure of each HAP in the vessel headspace at initial (n = 1) and final (n = 2) temperature;

$Pa_1$  = initial gas pressure in the vessel;

$Pa_2$  = final gas pressure; and

$MW_{HAP}$  = the average molecular weight of HAP present in the vessel.

The moles of gas displaced is represented by:

$$\Delta\eta = \frac{V}{R} \left[ \left( \frac{Pa_1}{T_1} \right) - \left( \frac{Pa_2}{T_2} \right) \right]$$

where:

$\Delta\eta$  = number of lb-moles of gas displaced;

V = volume of free space in the vessel;

R = ideal gas law constant;

$Pa_1$  = initial gas pressure in the vessel;

$Pa_2$  = final gas pressure;

$T_1$  = initial temperature of vessel; and

$T_2$  = final temperature of vessel.



The initial pressure of the noncondensable gas in the vessel shall be calculated according to the following equation:

$$P_{a_1} = P_{atm} - \sum (P_{ic})_{T_1}$$

where:

$P_{a_1}$  = initial partial pressure of gas in the vessel headspace;

$P_{atm}$  = atmospheric pressure; and

$(P_{ic})_{T_1}$  = initial partial pressure of each condensable volatile organic compound (including HAP) in the vessel headspace, at the initial temperature ( $T_1$ ).

The average molecular weight of HAP in the displaced gas shall be calculated as follows:

$$MW_{HAP} = \frac{\sum_{i=1}^n (\text{mass of HAP})_i}{\sum_{i=1}^n \frac{(\text{mass of HAP})_i}{(\text{HAP molecular weight})_i}}$$

where n is the number of different HAP compounds in the emission stream.

- (2) Emissions of HAP from process vents may be measured directly. The EPA Test Methods listed in paragraph (e)(2) (i) through (iii) of this section, from 40 CFR part 60, appendix A, shall be used to demonstrate compliance with the requirements of § 63.524 by direct measurement. Testing shall be performed for every batch emission episode of the unit operation. Gas stream volumetric flow rates shall be measured at 15-minute intervals, or at least once during each batch emission episode. Organic HAP or TOC concentration shall be determined from samples collected in an integrated sample over the duration of each episode, or from grab samples collected simultaneously with the flow rate measurements (every 15 minutes). If an integrated sample is collected for laboratory analysis, the sampling rate shall be adjusted proportionally to reflect variations in flow rate. Test conditions shall represent the normal operating conditions under which the data used to calculate the production rate are taken.
- (i) Method 1 or 1A of 40 CFR part 60, appendix A, as appropriate, shall be used for selection of the sampling sites if the flow measuring device is a pitot tube. A traverse shall be conducted before and after each sampling period. No traverse is necessary when using Method 2A or 2D.
  - (ii) Method 2,2A, 2C or 2D of 40 CFR part 60, appendix A, as appropriate, shall be used for the determination of gas stream volumetric flow rate. If Method 2 or 2C is used, the velocity measurements shall be made at a single point than can be used, in conjunction with the traverse, to establish an average velocity across the stack.
  - (iii) Method 25A and/or Methods 18 and 25A of appendices A-6 and A-7 to 40 CFR part 60, as appropriate, must be used to determine the concentration of HAP in the streams. 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.

- (iv) The owner or operator may choose to perform tests only during those periods of the episode in which the emission rate for the entire episode can be determined, or when the emissions are greater than the average emission rate of the episode. The owner or operator who chooses either of these options must develop an emission profile for the entire batch emission episode, based on either process knowledge or test data collected, to demonstrate that test periods are representative. Examples of information that could constitute process knowledge include calculations based on material balances, and process stoichiometry. Previous test results may be used provided the results are still relevant to the current process vent stream conditions.
- (v) For batch emission episodes of duration greater than 8 hours, the owner or operator is required to perform a maximum of 8 hours of testing. The test period must include the period of time in which the emission rate is predicted by the emission profile to be greater than average emission rate for the batch emission episode.
- (3) To demonstrate compliance with the process vent dioxins and furans emission limit, the owner or operator must use the procedures of paragraph (m) of this section. Testing shall be performed for each unit operation.
- (f) The owner or operator of any affected WSR source that is subject to the emissions limit for process vents, storage tanks, and wastewater systems shall calculate emissions from storage tanks in accordance with the methods specified in § 63.150(g)(3).
- (g) The owner or operator of any affected WSR source that is subject to the emission limit for process vents, storage tanks, and wastewater systems shall calculate emissions from wastewater treatment systems (if applicable) in accordance with the methods described in 40 CFR part 63, appendix C.
- (h) The owner or operator of any affected WSR source that is subject to the emission limit for process vents, storage tanks, and wastewater systems shall calculate the average amount of WSR product manufactured per batch, using data from performance tests or from emission calculations, as applicable, to determine the average WSR production per-batch production data for an annual period representing normal operating conditions.
  - (1) The owner or operator shall calculate an average emission rate per batch as the average of the results from the performance tests or calculations. The production-based emission rate shall be calculated by dividing the emissions per batch by the average production per batch.
  - (2) Compliance shall be determined according to the methodology described in paragraph (c) of this section. The source is in compliance with the standard for process vents, storage tanks, and wastewater systems if the sum of the equation in paragraph (c) of this section is less than the applicable emission limit from § 63.524.
- (i) The owner or operator of any affected BLR source or any affected WSR source that is subject to the requirements of subpart H of this part must demonstrate the ability of its specific program to meet the compliance requirements therein to achieve initial compliance.

- (j) For each existing, new, or reconstructed affected BLR and WSR source, beginning no later than the compliance dates specified in § 63.521(c), owners and operators of sources as defined in § 63.520 shall comply with the requirements of this subpart 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 applies.
- (k) For each existing, new, or reconstructed affected BLR and WSR source, beginning no later than the compliance dates specified in § 63.521(c), 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.
- (l) For each existing, new, or reconstructed affected BLR and WSR source, beginning no later than the compliance dates specified in § 63.521(c), 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.
- (m) Except as specified in paragraph (m)(7) of this section, to demonstrate compliance with the process vent dioxins and furans emission limit, the owner or operator must conduct a performance test using the procedures in paragraphs (m)(1) through (m)(6) of this section. Conduct subsequent performance tests no later than 60 calendar months after the previous performance test.
  - (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 40 CFR part 60, appendix A-1 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 40 CFR part 60, appendix A-2.
  - (4) Use Method 4 of 40 CFR part 60, appendix A-3 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 at 40 CFR part 60, appendix A-7.
    - (i) For each dioxin and furan congener, multiply the congener concentration by its corresponding toxic equivalency factor specified in table 2 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 (m)(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 to determine the oxygen concentration (%O<sub>2d</sub>). Method 3A of 40 CFR part 60, appendix A must be run concurrently with Method 23 of 40 CFR part 60, appendix A-7. The concentration corrected to 3 percent oxygen (C<sub>c</sub>) shall be computed using the following equation:

$$C_c = C_m \left( \frac{17.9}{20.9 - \%O_{2d}} \right)$$

Where:

C<sub>c</sub> = Concentration of dioxins and furans corrected to 3 percent oxygen, dry basis, nanograms per standard cubic meter.

C<sub>m</sub> = Concentration of dioxins and furans, dry basis, nanograms per standard cubic meter.

%O<sub>2d</sub> = Concentration of oxygen, dry basis, percent by volume.

- (7) An owner or operator is not required to conduct a performance test when either a boiler or process heater burning hazardous waste, or hazardous waste incinerator, is used 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 40 CFR part 266, subpart H;

(B) Has certified compliance with the interim status requirements of part 266, subpart H, of this chapter;

(C) Meets the requirement specified in paragraph (g)(7)(i)(E) 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

(D) Meets the requirement specified in paragraph (g)(7)(i)(E) 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.

(E) 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 § 63.523(e) and § 63.524(a)(3) and (b)(3), as applicable.

[60 FR 12676, Mar. 8, 1995, as amended at 89 FR 43270, May 16, 2024]

### § 63.526 Monitoring requirements.

- (a) The owner or operator of any existing, new, or reconstructed affected BLR source shall provide evidence of continued compliance with the standard. During each compliance demonstration, maximum or minimum operating parameters, as appropriate, shall be established for processes and control devices that will indicate the source is in compliance. If the operating parameter to be established is a maximum, the value of the parameter shall be the average of the maximum values from each of the three test runs. If the operating parameter to be established is a minimum, the value of the parameter shall be the average

of the minimum values from each of the three test runs. Parameter values for process vents with intermittent emission streams shall be determined as specified in paragraph (b)(1) of this section. The owner or operator shall operate processes and control devices within these parameters to ensure continued compliance with the standard. A de minimis level is specified in paragraph (a)(1) of this section. Monitoring parameters are specified for various process vent control scenarios in paragraphs (a)(2) through (7) of this section.

- (1) For affected BLR sources, uncontrolled emission points emitting less than one pound per year of HAP are not subject to the monitoring requirements of paragraphs (a)(2) through (6) of this section. The owner or operator shall use the methods specified in § 63.525(a), as applicable, or as specified in paragraph (a)(1)(i) of this section, to demonstrate which emission points satisfy the de minimis criteria, to the satisfaction of the Administrator.
  - (i) For the purpose of determining de minimis status for emission points, engineering assessment may be used to determine process vent stream flow rate and/or concentration for the representative operating conditions expected to yield the highest flow rate and concentration. 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, HAP emission rate, concentration, or other relevant parameter 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 HAP concentrations based on saturation conditions.
  - (ii) All data, assumptions, and procedures used in the engineering assessment shall be documented in accordance with § 63.527(c).
- (2) For affected sources using water scrubbers, the owner or operator shall establish a minimum scrubber water flow rate as a site-specific operating parameter which must be measured and recorded every 15 minutes. The affected source will be considered to be out of compliance if the scrubber water flow rate, averaged over any continuous 24-hour period, is below the minimum value established during the most recent compliance demonstration.
- (3) For affected sources using condensers, the owner or operator shall establish the maximum condenser outlet gas temperature as a site-specific operating parameter which must be measured and recorded every 15 minutes. The affected source will be considered to be out of compliance if the condenser outlet gas temperature, averaged over any continuous 24-hour period, is greater than the maximum value established during the most recent compliance demonstration.

- (4) For affected sources using carbon adsorbers or having uncontrolled process vents, the owner or operator shall establish a maximum outlet HAP concentration as the site-specific operating parameter which must be measured and recorded every 15 minutes. The affected source will be considered to be out of compliance if the outlet HAP concentration, averaged over any continuous 24-hour period, is greater than the maximum value established during the most recent compliance demonstration.
  - (5) For affected sources using flares, the presence of the pilot flame shall be monitored every 15 minutes. The affected source will be considered to be out of compliance upon loss of pilot flame.
  - (6) Wastewater system parameters to be monitored are the parameters specified under 40 CFR part 414, subpart E. The affected source will be considered to be out of compliance with this subpart W if it is found to be out of compliance with 40 CFR part 414, subpart E.
  - (7) For affected sources using sorbent injection, the owner or operator shall establish both a minimum sorbent injection rate and minimum carrier gas flow rate as site-specific operating parameters which must be measured and recorded every 15 minutes. The affected source will be considered to be out of compliance if the sorbent injection rate or the carrier gas flow rate, averaged over any continuous 24-hour period, is below the minimum values established during the most recent compliance demonstration.
- (b) The owner or operator of any existing, new, or reconstructed affected WSR source that is subject to the emission limit for process vents, storage tanks, and wastewater systems and/or is subject to the dioxins and furans emission limit for process vents shall provide evidence of continued compliance with the standard. As part of each compliance demonstration for batch process vents, test data or compliance calculations shall be used to establish a maximum or minimum level of a relevant operating parameter for each unit operation. The parameter value for each unit operation shall represent the worst case value of the operating parameter from all episodes in the unit operation. The owner or operator shall operate processes and control devices within these parameters to ensure continued compliance with the standard.
- (1) For batch process vents, the level shall be established in accordance with paragraphs (b)(1)(i) through (iv) of this section if compliance testing is performed.
    - (i) If testing is used to demonstrate compliance, the appropriate parameter shall be monitored during all batch emission episodes in the unit operation.
    - (ii) An average monitored parameter value shall be determined for each of the batch emission episodes in the unit operation.
    - (iii) If the level to be established for the unit operation is a maximum operating parameter, the level shall be defined as the minimum of the average parameter values determined in paragraph (b)(1)(ii) of this section.
    - (iv) If the level to be established for the unit operation is a minimum operating parameter, the level shall be defined as the maximum of the average parameter values determined in paragraph (b)(1)(ii) of this section.
  - (2) Affected sources with condensers on process vents shall establish the maximum condenser outlet gas temperature as a site-specific operating parameter, which must be measured every 15 minutes, or at least once for batch emission episodes less than 15 minutes in duration. The affected source

will be considered to be out of compliance if the maximum condenser outlet gas temperature, averaged over the duration of the batch emission episode or unit operation, is greater than the value established during the most recent compliance demonstration.

- (3) For affected sources using water scrubbers, the owner or operator shall establish a minimum scrubber water flow rate as a site-specific operating parameter which must be measured and recorded every 15 minutes, or at least once for batch emission episodes less than 15 minutes in duration. The affected source will be considered to be out of compliance if the scrubber water flow rate, averaged over the duration of the batch emission episode or unit operation, is below the minimum flow rate established during the most recent compliance demonstration.
- (4) For affected sources using carbon adsorbers or having uncontrolled process vents, the owner or operator shall establish a maximum outlet HAP concentration as the site-specific operating parameter which must be measured and recorded every 15 minutes, or at least once for batch emission episodes of duration shorter than 15 minutes. The affected source will be considered to be out of compliance if the outlet HAP concentration, averaged over the duration of the batch emission episode or unit operation, is greater than the value established during the most recent compliance demonstration.
- (5) For affected sources using flares, the presence of the pilot flame shall be monitored every 15 minutes, or at least once for batch emission episodes less than 15 minutes in duration. The affected source will be considered to be out of compliance upon loss of pilot flame.
- (6) Wastewater system parameters to be monitored are the parameters specified by 40 CFR part 414, subpart E. The affected source will be considered to be out of compliance with this subpart W if it is found to be out of compliance with 40 CFR part 414, subpart E.
- (7) For affected sources using sorbent injection, the owner or operator shall establish both a minimum sorbent injection rate and minimum carrier gas flow rate flow rate as site-specific operating parameters which must be measured and recorded every 15 minutes. The affected source will be considered to be out of compliance if the sorbent injection rate or the carrier gas flow rate flow rate, averaged over any continuous 24-hour period, is below the minimum values established during the most recent compliance demonstration.
- (c) Periods of time when monitoring measurements exceed the parameter values do not constitute a violation if they occur during a startup, shutdown, or malfunction, and the facility is operated in accordance with § 63.6(e)(1). For each existing, new, or reconstructed affected BLR and WSR source, on and after July 15, 2027, this paragraph no longer applies.
- (d) The owner or operator of any affected WSR source that is subject to the requirements of subpart H of this part shall meet the monitoring requirements of subpart H of this part.

[60 FR 12676, Mar. 8, 1995, as amended at 71 FR 20457, Apr. 20, 2006; 89 FR 43272, May 16, 2024]

### § 63.527 Recordkeeping requirements.

- (a) The owner or operator of any affected BLR source shall keep records of daily average values of equipment operating parameters specified to be monitored under § 63.526(a) or specified by the Administrator. Records shall be kept in accordance with the requirements of applicable paragraphs of § 63.10 of subpart A of this part, as specified in the General Provisions applicability table of this subpart. The owner or operator shall keep records up-to-date and readily accessible.

- (1) A daily (24-hour) 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.
  - (2) The operating day shall be the period defined in the operating permit or the Notification of Compliance Status in § 63.9(h) of subpart A of this part. It may be from midnight to midnight or another continuous 24-hour period.
  - (3) In the event of an excursion, the owner or operator must keep records of each 15-minute reading during the period in which the excursion occurred.
- (b) The owner or operator of any affected WSR source subject to the emission limit for process vents, storage tanks, and wastewater systems and/or subject to the dioxins and furans emission limit for process vents shall keep records of values of equipment operating parameters specified to be monitored under § 63.526(b) or specified by the Administrator. The records that shall be kept are the average values of operating parameters, determined for the duration of each unit operation. Records shall be kept in accordance with the requirements of applicable paragraphs of § 63.10, as specified in the General Provisions applicability table in this subpart. The owner or operator shall keep records up-to-date and readily accessible. In the event of an excursion, the owner or operator must keep records of each 15-minute reading for the entire unit operation in which the excursion occurred.
- (c) The owner or operator of any affected BLR source, as well the owner or operator of any affected WSR source that is subject to the emission limit for process vents, storage tanks, and wastewater systems, who demonstrates that certain process vents are below the de minimis cutoff for continuous monitoring specified in § 63.526(a)(1)(i), shall maintain up-to-date, readily accessible records of the following information to document that a HAP emission rate of less than one pound per year is maintained:
- (1) The information used to determine de minimis status for each de minimis process vent, as specified in § 63.526(a)(1)(i);
  - (2) Any process changes as defined in § 63.115(e) of subpart G of this part that increase the HAP emission rate;
  - (3) Any recalculation or measurement of the HAP emission rate pursuant to § 63.115(e) of subpart G of this part; and
  - (4) Whether or not the HAP emission rate increases to one pound per year or greater as a result of the process change.
- (d) The owner or operator of any affected BLR source, as well as the owner or operator of any affected WSR source subject to the leak detection and repair program specified in subpart H of this part, shall implement the recordkeeping requirements outlined therein. All records shall be retained for a period of 5 years, in accordance with the requirements of 40 CFR 63.10(b)(1).
- (e) Any excursion from the required monitoring parameter, unless otherwise excused, shall be considered a violation of the emission standard.
- (f) For each existing, new, or reconstructed affected BLR and WSR source, beginning no later than the compliance dates specified in § 63.521(c), the owner or operator of any affected BLR source, as well the owner or operator of any affected WSR source subject to the emission limit for process vents, storage tanks, and wastewater systems, must keep the records specified in paragraphs (f)(1) through (3) of this section each pressure relief device, as defined in § 63.522.



- (1) The start and end time and date of each pressure release to the atmosphere.
  - (2) An estimate of the mass quantity in pounds of each organic HAP released.
  - (3) Records of any data, assumptions, and calculations used to estimate of the mass quantity of each organic HAP released during the event.
- (g) For each existing, new, or reconstructed affected BLR and WSR source, beginning no later than the compliance dates specified in § 63.521(c), the owner or operator of any affected BLR source, as well the owner or operator of any affected WSR source subject to the emission limit for process vents, storage tanks, and wastewater systems, must keep the records specified in paragraphs (g)(1) through (3) of this section for each maintenance vent release. A process vent is considered a maintenance vent if the process 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.
- (1) Identification of the maintenance vent and the equipment served by the maintenance vent.
  - (2) The date and time the maintenance vent was opened to the atmosphere.
  - (3) An estimate of the mass in pounds of organic HAP released during the entire atmospheric venting event.

[60 FR 12676, Mar. 8, 1995, as amended at 89 FR 43273, May 16, 2024]

### § 63.528 Reporting requirements.

- (a) The owner or operator of any affected BLR source, as well as the owner or operator of any affected WSR source that is subject to the emission limit for process vents, storage tanks, and wastewater systems and/or is subject to the dioxins and furans emission limit for process vents, shall comply with the reporting requirements of applicable paragraphs of § 63.10, as specified in the General Provisions applicability table in this subpart. The owner or operator shall also submit to the Administrator, as part of the quarterly excess emissions and continuous monitoring system performance report and summary report required by § 63.10(e)(3), the following recorded information. 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 Polymers and Resins 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. If a report is submitted via CEDRI, the certifier's electronic signature during the submission process replaces the requirements in § 63.10(e)(3)(v), § 63.10(e)(3)(vi)(L), and § 63.10(e)(3)(vi)(M) to submit the date of the report and the name, title, and signature of the responsible official who is certifying the accuracy of the report.
- (1) Reports of monitoring data, including 15-minute monitoring values as well as daily average values or per-unit operation average values, as applicable, of monitored parameters for all operating days or unit operations when the average values were outside the ranges established in the Notification of Compliance Status or operating permit, including reports specified in paragraph (a)(4) of this section.

- (2) Reports of the duration of periods when monitoring data is not collected for each excursion caused by insufficient monitoring data, including reports specified in paragraph (a)(4) of this section. An excursion means any of the three cases listed in paragraph (a)(2)(i) or (a)(2)(ii) of this section. For a control device where multiple parameters are monitored, if one or more of the parameters meets the excursion criteria in paragraph (a)(2)(i) or (a)(2)(ii) of this section, this is considered a single excursion for the control device. In the report, include the identification of the source, start date, start time, duration in hours, and monitored parameter(s) meeting the excursion criteria.
    - (i) When the period of control device operation is 4 hours or greater in an operating day and monitoring data are insufficient to constitute a valid hour of data, as defined in paragraph (a)(2)(iii) of this section, for at least 75 percent of the operating hours.
    - (ii) When the period of control 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.
    - (iii) Monitoring data are insufficient to constitute a valid hour of data, as used in paragraphs (a)(2)(i) and (ii) of this section, if measured values are unavailable for any of the 15-minute periods within the hour.
  - (3) Whenever a process change, as defined in § 63.115(e), is made that causes the emission rate from a de minimis emission point to become a process vent with an emission rate of one pound per year or greater, 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 summary report required under § 63.10(e)(3). The report shall include:
    - (i) A description of the process change; and
    - (ii) The results of the recalculation of the emission rate.
  - (4) For each existing, new, or reconstructed affected BLR and WSR source, beginning no later than the compliance dates specified in § 63.521(c), for each excursion that is not an excused excursion, the report must include a list of the affected sources or equipment, the monitored parameter, 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. Include the start date, start time, and duration in hours of each excursion.
  - (5) For pressure relief device subject to § 63.527(f), 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 each organic HAP released.
  - (6) For heat exchangers subject to § 63.104 of subpart F of this part, the information specified in § 63.104(f)(2) of subpart F of this part.
- (b) The owner or operator of any affected BLR source, as well as the owner or operator of any affected WSR source who is subject to the leak detection and repair program specified in subpart H of this part, shall implement the reporting requirements outlined therein. Copies of all reports shall be retained as records for a period of 5 years, in accordance with the requirements of 40 CFR 63.10(b)(1).

- (c) The owner or operator of any affected BLR source, as well as the owner or operator of any affected WSR source that is subject to the emission limit for process vents, storage tanks, and wastewater systems shall include records of all monitoring parameters in the Notification of Compliance Status and summary reports required by subpart A of this part.
- (d) 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 using 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.

[89 FR 43273, May 16, 2024]

### § 63.529 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 §§ 63.520, 63.521, 63.523, and 63.524. Where these standards reference another rule, the cited provisions in that rule will be delegated according to the delegation provisions of that rule.
  - (2) Approval of major alternatives to test methods for 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 37350, June 23, 2003, as amended at 89 FR 43274, May 16, 2024]

**Table 1 to Subpart W of Part 63—General Provisions Applicability to Subpart W**

| Reference          | Applies to subpart W |     |                                                                                          | Comment                                                                                                                                                |
|--------------------|----------------------|-----|------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    | BLR                  | WSR | WSR equipment leak standard, and BLR equipment leak standard (40 CFR part 63, subpart H) |                                                                                                                                                        |
| § 63.1(a)(1)       | Yes                  | Yes | Yes                                                                                      | Additional terms defined in § 63.522.                                                                                                                  |
| § 63.1(a)(2)       | Yes                  | Yes | Yes                                                                                      |                                                                                                                                                        |
| § 63.1(a)(3)       | Yes                  | Yes | Yes                                                                                      |                                                                                                                                                        |
| § 63.1(a)(4)       | Yes                  | Yes | Yes                                                                                      |                                                                                                                                                        |
| § 63.1(a)(5)       | N/A                  | N/A | N/A                                                                                      | Subpart W specifies applicability of each paragraph in subpart A to subpart W. Reserved.                                                               |
| § 63.1(a)(6)       | Yes                  | Yes | Yes                                                                                      |                                                                                                                                                        |
| § 63.1(a)(7)       | Yes                  | Yes | Yes                                                                                      |                                                                                                                                                        |
| § 63.1(a)(8)       | No                   | No  | No                                                                                       |                                                                                                                                                        |
| § 63.1(a)(9)       | N/A                  | N/A | N/A                                                                                      | Discusses State programs. Reserved.                                                                                                                    |
| § 63.1(a)(10)      | Yes                  | Yes | Yes                                                                                      |                                                                                                                                                        |
| § 63.1(a)(11)      | Yes                  | Yes | Yes                                                                                      |                                                                                                                                                        |
| § 63.1(a)(12)-(14) | Yes                  | Yes | Yes                                                                                      |                                                                                                                                                        |
| § 63.1(b)(1)       | No                   | No  | No                                                                                       | § 63.521 of subpart W specifies applicability.                                                                                                         |
| § 63.1(b)(2)       | Yes                  | Yes | Yes                                                                                      |                                                                                                                                                        |
| § 63.1(b)(3)       | Yes                  | Yes | Yes                                                                                      |                                                                                                                                                        |
| § 63.1(c)(1)       | Yes                  | Yes | Yes                                                                                      |                                                                                                                                                        |
| § 63.1(c)(2)       | No                   | No  | No                                                                                       | Subpart W specifies applicability of each paragraph in subpart A to sources subject to subpart W. Area sources are not subject to subpart W. Reserved. |
| § 63.1(c)(3)       | N/A                  | N/A | N/A                                                                                      |                                                                                                                                                        |
| § 63.1(c)(4)       | Yes                  | Yes | Yes                                                                                      |                                                                                                                                                        |
| § 63.1(c)(5)       | Yes                  | Yes | No                                                                                       |                                                                                                                                                        |
| § 63.1(c)(6)       | Yes                  | Yes | Yes                                                                                      | Subpart H specifies applicable notification requirements. Reserved.                                                                                    |
| § 63.1(d)          | N/A                  | N/A | N/A                                                                                      |                                                                                                                                                        |
| § 63.1(e)          | Yes                  | Yes | Yes                                                                                      |                                                                                                                                                        |
| § 63.2             | Yes                  | Yes | Yes                                                                                      |                                                                                                                                                        |

| Reference         | Applies to subpart W |     |                                                                                          | Comment                                                                                                        |
|-------------------|----------------------|-----|------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
|                   | BLR                  | WSR | WSR equipment leak standard, and BLR equipment leak standard (40 CFR part 63, subpart H) |                                                                                                                |
| § 63.3            | Yes                  | Yes | No                                                                                       | Other units used in subpart W are defined in that subpart; units of measure are spelled out for subpart H.     |
| § 63.4(a)(1)-(3)  | Yes                  | Yes | Yes                                                                                      | Reserved.                                                                                                      |
| § 63.4(a)(4)      | N/A                  | N/A | N/A                                                                                      |                                                                                                                |
| § 63.4(a)(5)      | Yes                  | Yes | Yes                                                                                      |                                                                                                                |
| § 63.4(b)         | Yes                  | Yes | Yes                                                                                      |                                                                                                                |
| § 63.4(c)         | Yes                  | Yes | Yes                                                                                      | Except replace the terms “source” and “stationary source” in § 63.5(a)(1) of subpart A with “affected source”. |
| § 63.5(a)         | Yes                  | Yes | Yes                                                                                      |                                                                                                                |
| § 63.5(b)(1)      | Yes                  | Yes | Yes                                                                                      |                                                                                                                |
| § 63.5(b)(2)      | N/A                  | N/A | N/A                                                                                      |                                                                                                                |
| § 63.5(b)(3)      | Yes                  | Yes | Yes                                                                                      | Reserved.                                                                                                      |
| § 63.5(b)(4)      | Yes                  | Yes | Yes                                                                                      |                                                                                                                |
| § 63.5(b)(5)      | Yes                  | Yes | Yes                                                                                      |                                                                                                                |
| § 63.5(b)(6)      | Yes                  | Yes | Yes                                                                                      |                                                                                                                |
| § 63.5(c)         | N/A                  | N/A | N/A                                                                                      | Reserved.                                                                                                      |
| § 63.5(d)(1)(i)   | Yes                  | Yes | Yes                                                                                      |                                                                                                                |
| § 63.5(d)(1)(ii)  | Yes                  | Yes | Yes                                                                                      |                                                                                                                |
| § 63.5(d)(1)(iii) | Yes                  | Yes | Yes                                                                                      |                                                                                                                |
| § 63.5(d)(2)      | Yes                  | Yes | Yes                                                                                      | Except replace “source” in § 63.5(f)(1) of subpart A with “affected source”.                                   |
| § 63.5(d)(3)-(4)  | Yes                  | Yes | Yes                                                                                      |                                                                                                                |
| § 63.5(e)         | Yes                  | Yes | Yes                                                                                      |                                                                                                                |
| § 63.5(f)(1)      | Yes                  | Yes | Yes                                                                                      |                                                                                                                |
| § 63.5(f)(2)      | Yes                  | Yes | Yes                                                                                      | Subpart W specifies compliance dates.                                                                          |
| § 63.6(a)         | Yes                  | Yes | Yes                                                                                      |                                                                                                                |
| § 63.6(b)(1)-     | No                   | No  | No                                                                                       |                                                                                                                |

| Reference            | Applies to subpart W |             |                                                                                          | Comment                                                                                                                           |
|----------------------|----------------------|-------------|------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
|                      | BLR                  | WSR         | WSR equipment leak standard, and BLR equipment leak standard (40 CFR part 63, subpart H) |                                                                                                                                   |
| (2)                  |                      |             |                                                                                          |                                                                                                                                   |
| § 63.6(b)(3)-(4)     | Yes                  | Yes         | Yes                                                                                      |                                                                                                                                   |
| § 63.6(b)(5)         |                      | Yes         | No                                                                                       | Subpart H includes notification requirements.                                                                                     |
| § 63.6(b)(6)         | N/A                  | N/A         | N/A                                                                                      | Reserved.                                                                                                                         |
| § 63.6(b)(7)         | No                   | Yes         | No                                                                                       | Sources subject to subpart H must comply according to the schedule in § 63.520 of subpart W for new sources subject to subpart H. |
| § 63.6(c)(1)-(2)     | Yes                  | Yes         | Yes                                                                                      | Except replace "source" in § 63.6(c)(1)-(2) of subpart A with "affected source".                                                  |
| § 63.6(c)(3)-(4)     | N/A                  | N/A         | N/A                                                                                      | Reserved.                                                                                                                         |
| § 63.6(c)(5)         | Yes                  | Yes         | Yes                                                                                      |                                                                                                                                   |
| § 63.6(d)            | N/A                  | N/A         | N/A                                                                                      | Reserved.                                                                                                                         |
| § 63.6(e)            | Yes                  | Yes         | Yes                                                                                      |                                                                                                                                   |
| § 63.6(e)(1)(i)      | Reserved.            |             |                                                                                          |                                                                                                                                   |
| § 63.6(e)(1)(ii)     |                      | See Comment |                                                                                          | Yes, before July 15, 2027. No, beginning on and after July 15, 2027.                                                              |
| § 63.6(e)(1)(iii)    | Yes                  | Yes         | Yes                                                                                      |                                                                                                                                   |
| 63.6(e)(2)           | N/A                  | N/A         | N/A                                                                                      | Reserved.                                                                                                                         |
| 63.6(e)(3)           |                      | See Comment |                                                                                          | Yes, before July 15, 2027. No, beginning on and after July 15, 2027.                                                              |
| § 63.6(f)(1)         | Yes                  | Yes         | Yes                                                                                      |                                                                                                                                   |
| § 63.6(f)(2)(i)-(ii) | Yes                  | Yes         | Yes                                                                                      |                                                                                                                                   |
| § 63.6(f)(2)(iii)    | Yes                  | Yes         | Yes                                                                                      |                                                                                                                                   |
| § 63.6(f)(2)(iv)     | Yes                  | Yes         | Yes                                                                                      |                                                                                                                                   |
| § 63.6(f)(3)         | Yes                  | Yes         | Yes                                                                                      |                                                                                                                                   |
| § 63.6(g)            | Yes                  | Yes         | Yes                                                                                      | Affected sources have the opportunity to demonstrate other alternatives to the                                                    |

| Reference                | Applies to subpart W                                           |     |                                                                                          | Comment                                                                                                                                  |
|--------------------------|----------------------------------------------------------------|-----|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
|                          | BLR                                                            | WSR | WSR equipment leak standard, and BLR equipment leak standard (40 CFR part 63, subpart H) |                                                                                                                                          |
| § 63.6(h)                | No                                                             | No  | No                                                                                       | Administrator.<br>Subpart W does not contain any opacity or visible emissions standards.                                                 |
| § 63.6(i)(1)             | Yes                                                            | Yes | Yes                                                                                      | Except replace “source” in § 63.6(2) (i) and (ii) of subpart A with “affected source”.                                                   |
| § 63.6(i)(2)             | Yes                                                            | Yes | Yes                                                                                      |                                                                                                                                          |
| § 63.6(i)(3)             | Yes                                                            | Yes | Yes                                                                                      |                                                                                                                                          |
| § 63.6(i)(4)(i)          | Yes                                                            | Yes | Yes                                                                                      |                                                                                                                                          |
| § 63.6(i)(4)(ii)         | Yes                                                            | Yes | Yes                                                                                      |                                                                                                                                          |
| § 63.6(i)(5)-(14)        | Yes                                                            | Yes | Yes                                                                                      |                                                                                                                                          |
| § 63.6(i)(15)            | N/A                                                            | N/A | N/A                                                                                      | Reserved.                                                                                                                                |
| § 63.6(i)(16)            | Yes                                                            | Yes | Yes                                                                                      |                                                                                                                                          |
| § 63.6(j)                | Yes                                                            | Yes | Yes                                                                                      |                                                                                                                                          |
| § 63.7(a)(1)             | Yes                                                            | Yes | No                                                                                       | Subpart H specifies required testing and compliance procedures.                                                                          |
| § 63.7(a)(2)(i)-(vi)     | Yes                                                            | Yes | No                                                                                       | Subpart H specifies that test results must be submitted in the Notification of Compliance Status due 150 days after the compliance date. |
| § 63.7(a)(2)(vii)-(viii) | N/A                                                            | N/A | N/A                                                                                      | Reserved.                                                                                                                                |
| § 63.7(a)(2)(ix)         | Yes                                                            | Yes | Yes                                                                                      | Except replace “source” in § 63.7(d) of subpart A with “affected source”.                                                                |
| § 63.7(a)(3)             | Yes                                                            | Yes | Yes                                                                                      |                                                                                                                                          |
| § 63.7(a)(4)             | Yes                                                            | Yes | Yes                                                                                      |                                                                                                                                          |
| § 63.7(b)(1)             | Yes                                                            | Yes | Yes                                                                                      |                                                                                                                                          |
| § 63.7(b)(2)             | Yes                                                            | Yes | Yes                                                                                      |                                                                                                                                          |
| § 63.7(c)                | No                                                             | No  | No                                                                                       |                                                                                                                                          |
| § 63.7(d)                | Yes                                                            | Yes | Yes                                                                                      |                                                                                                                                          |
| § 63.7(e)(1)             | Yes, before July 15, 2027. No, beginning on and after July 15, |     |                                                                                          | See § 63.525(l). Subpart W also contains test methods specific to BLR and WSR sources.                                                   |

| Reference              | Applies to subpart W                                                 |     |                                                                                          | Comment                                                                                                                                                      |
|------------------------|----------------------------------------------------------------------|-----|------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        | BLR                                                                  | WSR | WSR equipment leak standard, and BLR equipment leak standard (40 CFR part 63, subpart H) |                                                                                                                                                              |
|                        |                                                                      |     | 2027.                                                                                    |                                                                                                                                                              |
| § 63.7(e)(2)           | Yes                                                                  | Yes | Yes                                                                                      |                                                                                                                                                              |
| § 63.7(e)(3)           | Yes                                                                  | Yes | No                                                                                       | Subpart H specifies test methods and procedures.                                                                                                             |
| § 63.7(f)              | Yes                                                                  | Yes | No                                                                                       | Subpart H specifies applicable methods and provides alternatives.                                                                                            |
| § 63.7(g)(1)           | Yes                                                                  | Yes | No                                                                                       | Subpart H specifies performance test reporting. Additionally, this subpart specifies how and when the performance test results are reported for BLR and WSR. |
| § 63.7(g)(2)           | N/A                                                                  | N/A | N/A                                                                                      | Reserved.                                                                                                                                                    |
| § 63.7(g)(3)           | Yes                                                                  | Yes | Yes                                                                                      |                                                                                                                                                              |
| § 63.7(h)(1)-(2)       | Yes                                                                  | Yes | Yes                                                                                      |                                                                                                                                                              |
| § 63.7(h)(3)(i)        | Yes                                                                  | Yes | Yes                                                                                      |                                                                                                                                                              |
| § 63.7(h)(3)(ii)-(iii) | Yes                                                                  | Yes | Yes                                                                                      |                                                                                                                                                              |
| § 63.7(h)(4)-(5)       | Yes                                                                  | Yes | Yes                                                                                      |                                                                                                                                                              |
| § 63.8(a)(1)           | Yes                                                                  | Yes | Yes                                                                                      |                                                                                                                                                              |
| § 63.8(a)(2)           | Yes                                                                  | Yes | Yes                                                                                      |                                                                                                                                                              |
| § 63.8(a)(3)           | N/A                                                                  | N/A | N/A                                                                                      | Reserved.                                                                                                                                                    |
| § 63.8(a)(4)           | Yes                                                                  | Yes | Yes                                                                                      |                                                                                                                                                              |
| § 63.8(b)(1)           | Yes                                                                  | Yes | Yes                                                                                      |                                                                                                                                                              |
| § 63.8(b)(2)           | Yes                                                                  | Yes | No                                                                                       | Subpart H specifies locations to conduct monitoring.                                                                                                         |
| § 63.8(b)(3)           | Yes                                                                  | Yes | Yes                                                                                      |                                                                                                                                                              |
| § 63.8(c)(1)(i)        | Yes, before July 15, 2027. No, beginning on and after July 15, 2027. |     |                                                                                          |                                                                                                                                                              |
| § 63.8(c)(1)(ii)       | Yes                                                                  | Yes | Yes                                                                                      |                                                                                                                                                              |
| §                      | Yes, before July 15, 2027. No,                                       |     |                                                                                          |                                                                                                                                                              |



| Reference            | Applies to subpart W                  |     |                                                                                          | Comment                                                                                        |
|----------------------|---------------------------------------|-----|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
|                      | BLR                                   | WSR | WSR equipment leak standard, and BLR equipment leak standard (40 CFR part 63, subpart H) |                                                                                                |
| 63.8(c)(1)(iii)      | beginning on and after July 15, 2027. |     |                                                                                          | Subpart W specifies monitoring frequencies.                                                    |
| § 63.8(c)(2)-(3)     | Yes                                   | Yes | Yes                                                                                      |                                                                                                |
| § 63.8(c)(4)-(8)     | No                                    | No  | No                                                                                       |                                                                                                |
| § 63.8(d)            | No                                    | No  | No                                                                                       |                                                                                                |
| § 63.8(e)            | No                                    | No  | No                                                                                       |                                                                                                |
| § 63.8(f)(1)         | Yes                                   | Yes | Yes                                                                                      |                                                                                                |
| § 63.8(f)(2)         | Yes                                   | Yes | Yes                                                                                      |                                                                                                |
| § 63.8(f)(3)         | Yes                                   | Yes | Yes                                                                                      |                                                                                                |
| § 63.8(f)(4)         | Yes                                   | Yes | Yes                                                                                      |                                                                                                |
| § 63.8(f)(5)         | Yes                                   | Yes | Yes                                                                                      |                                                                                                |
| § 63.8(f)(6)         | Yes                                   | Yes | No                                                                                       |                                                                                                |
| § 63.8(g)            | Yes                                   | Yes | Yes                                                                                      |                                                                                                |
| § 63.9(a)            | Yes                                   | Yes | Yes                                                                                      |                                                                                                |
| § 63.9(b)(1)(i)-(ii) | Yes                                   | Yes | Yes                                                                                      |                                                                                                |
| § 63.9(b)(1)(iii)    | Yes                                   | Yes | Yes                                                                                      |                                                                                                |
| § 63.9(b)(2)         | Yes                                   | Yes | Yes                                                                                      |                                                                                                |
| § 63.9(b)(3)         | Yes                                   | Yes | Yes                                                                                      |                                                                                                |
| § 63.9(b)(4)         | Yes                                   | Yes | Yes                                                                                      |                                                                                                |
| § 63.9(b)(5)         | Yes                                   | Yes | Yes                                                                                      |                                                                                                |
| § 63.9(c)            | Yes                                   | Yes | Yes                                                                                      |                                                                                                |
| § 63.9(d)            | Yes                                   | Yes | Yes                                                                                      |                                                                                                |
| § 63.9(e)            | No                                    | No  | No                                                                                       | Separate Notification of Compliance Status requirements are specified for subpart H. Reserved. |
| § 63.9(f)            | No                                    | No  | No                                                                                       |                                                                                                |
| § 63.9(g)            | No                                    | No  | No                                                                                       |                                                                                                |
| § 63.9(h)(1)-(3)     | Yes                                   | Yes | No                                                                                       |                                                                                                |
| § 63.9(h)(4)         | N/A                                   | N/A | N/A                                                                                      |                                                                                                |

| Reference          | Applies to subpart W                                                 |     |                                                                                          | Comment                                                                                                                                         |                                                                                                                                |
|--------------------|----------------------------------------------------------------------|-----|------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
|                    | BLR                                                                  | WSR | WSR equipment leak standard, and BLR equipment leak standard (40 CFR part 63, subpart H) |                                                                                                                                                 |                                                                                                                                |
| § 63.9(h)(5)-(6)   | Yes                                                                  | Yes | No                                                                                       | Subpart H specifies Notification of Compliance Status requirements.                                                                             |                                                                                                                                |
| § 63.9(i)          | Yes                                                                  | Yes | Yes                                                                                      |                                                                                                                                                 |                                                                                                                                |
| § 63.9(j)          | Yes                                                                  | Yes | Yes                                                                                      |                                                                                                                                                 |                                                                                                                                |
| § 63.9(k)          | Yes                                                                  | Yes | Yes                                                                                      |                                                                                                                                                 |                                                                                                                                |
| § 63.10(a)         | Yes                                                                  | Yes | Yes                                                                                      |                                                                                                                                                 |                                                                                                                                |
| § 63.10(b)(1)      | Yes                                                                  | Yes | Yes                                                                                      |                                                                                                                                                 |                                                                                                                                |
| § 63.10(b)(2)      | No                                                                   | No  | No                                                                                       |                                                                                                                                                 | Subparts H and W specify recordkeeping requirements.                                                                           |
| § 63.10(b)(3)      | Yes                                                                  | Yes | Yes                                                                                      |                                                                                                                                                 |                                                                                                                                |
| § 63.10(c)(1)-(6)  | No                                                                   | No  | No                                                                                       |                                                                                                                                                 |                                                                                                                                |
| § 63.10(c)(7)-(8)  | Yes                                                                  | Yes | Yes                                                                                      |                                                                                                                                                 |                                                                                                                                |
| § 63.10(c)(9)-(15) | No                                                                   | No  | No                                                                                       | Subpart H specifies performance test reporting requirements.<br><br>This subpart and Subpart H specify performance test reporting requirements. |                                                                                                                                |
| § 63.10(d)(1)      | Yes                                                                  | Yes | No                                                                                       |                                                                                                                                                 |                                                                                                                                |
| § 63.10(d)(2)      | No                                                                   | No  | No                                                                                       |                                                                                                                                                 |                                                                                                                                |
| § 63.10(d)(3)      | No                                                                   | No  | No                                                                                       |                                                                                                                                                 |                                                                                                                                |
| § 63.10(d)(4)      | Yes                                                                  | Yes | Yes                                                                                      |                                                                                                                                                 |                                                                                                                                |
| § 63.10(d)(5)      | Yes, before July 15, 2027. No, beginning on and after July 15, 2027. |     |                                                                                          |                                                                                                                                                 |                                                                                                                                |
| § 63.10(e)(1)-(2)  | No                                                                   | No  | No                                                                                       |                                                                                                                                                 | Except that on and after July 15, 2027, the reports shall be submitted according to and in the format required by § 63.528(a). |
| § 63.10(e)(3)      | Yes                                                                  | Yes | No                                                                                       |                                                                                                                                                 |                                                                                                                                |
| § 63.10(e)(4)      | No                                                                   | No  | No                                                                                       |                                                                                                                                                 |                                                                                                                                |
| § 63.10(f)         | Yes                                                                  | Yes | Yes                                                                                      |                                                                                                                                                 |                                                                                                                                |

| Reference     | Applies to subpart W |     |                                                                                          | Comment |
|---------------|----------------------|-----|------------------------------------------------------------------------------------------|---------|
|               | BLR                  | WSR | WSR equipment leak standard, and BLR equipment leak standard (40 CFR part 63, subpart H) |         |
| § 63.11-63.15 | Yes                  | Yes | Yes                                                                                      |         |

[60 FR 12676, Mar. 8, 1995, as amended at 85 FR 73891, Nov. 19, 2020; 89 FR 43274, May 16, 2024]

**Editorial Note:** At 89 FR 43274, May 16, 2024, table 1 to subpart W was amended in part by revising entry “§ 63.6(e)(1)(i)”. However, the amendment could not be incorporated an inaccurate amendatory instruction.

[60 FR 12676, Mar. 8, 1995, as amended at 89 FR 43274, May 16, 2024]

## Table 2 to Subpart W 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                     |

| Dioxin and Furan Congener | Toxic<br>equivalency factor |
|---------------------------|-----------------------------|
| Octachlorodibenzofuran    | 0.0003                      |

[89 FR 43275, May 16, 2024]

## **Appendix D**

40 C.F.R. § 63 Subpart SS – *National Emission Standard for Closed Vent Systems, Control Devices, Recovery Devices and Routing to a Fuel Gas System or a Process*



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This content is from the eCFR and is authoritative but unofficial.

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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 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  $\pm 0.02$  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  $\pm 1$  percent of the temperature being monitored expressed in degrees Celsius or  $\pm 1.2$  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)<sup>-1</sup> (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  $\pm 10$  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  $\pm 10$  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 ( $C_{\text{TOC}}$ ) 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:

$C_{\text{TOC}}$  = 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 ( $C_{\text{REG}}$ ) 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) ( $E_{\text{TOC}}$ ) or emission rate of total organic regulated material ( $E_{\text{RM}}$ ) in the sample at the inlet and outlet of the control device, respectively, dry basis, kilogram per hour.

$K_2$  = Constant,  $2.494 \times 10^{-6}$  (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.

[64 FR 34866, June 29, 1999, as amended at 67 FR 46277, July 12, 2002; 85 FR 40418, July 6, 2020]

## § 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]*

## **Appendix E**

40 C.F.R. § 63 Subpart UU – *National Emission Standards for Equipment Leaks - Control Level  
2 Standards*



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This content is from the eCFR and is authoritative but unofficial.

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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 UU National Emission Standards for Equipment Leaks—Control Level 2 Standards

- § 63.1019 Applicability.
- § 63.1020 Definitions.
- § 63.1021 Alternative means of emission limitation.
- § 63.1022 Equipment identification.
- § 63.1023 Instrument and sensory monitoring for leaks.
- § 63.1024 Leak repair.
- § 63.1025 Valves in gas and vapor service and in light liquid service standards.
- § 63.1026 Pumps in light liquid service standards.
- § 63.1027 Connectors in gas and vapor service and in light liquid service standards.
- § 63.1028 Agitators in gas and vapor service and in light liquid service standards.
- § 63.1029 Pumps, valves, connectors, and agitators in heavy liquid service; pressure relief devices in liquid service; and instrumentation systems standards.
- § 63.1030 Pressure relief devices in gas and vapor service standards.
- § 63.1031 Compressors standards.
- § 63.1032 Sampling connection systems standards.
- § 63.1033 Open-ended valves or lines standards.
- § 63.1034 Closed vent systems and control devices; or emissions routed to a fuel gas system or process standards.
- § 63.1035 Quality improvement program for pumps.
- § 63.1036 Alternative means of emission limitation: Batch processes.
- § 63.1037 Alternative means of emission limitation: Enclosed-vented process units or affected facilities.
- § 63.1038 Recordkeeping requirements.
- § 63.1039 Reporting requirements.

#### Table 1 to Subpart UU of Part 63

Batch Processes Monitoring Frequency For Equipment Other Than Connectors

## Subpart UU—National Emission Standards for Equipment Leaks—Control Level 2 Standards

**Source:** 64 FR 34899, June 29, 1999, unless otherwise noted.

### § 63.1019 Applicability.

- (a) The provisions of this subpart apply to the control of air emissions from equipment leaks for which another subpart references the use of this subpart for such air emission control. These air emission standards for equipment leaks 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 noted in the referencing subpart.
- (b) **Equipment subject to this subpart.** The provisions of this subpart and the referencing subpart apply to equipment that contains or contacts regulated material. This subpart applies to pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, instrumentation systems, and closed vent systems and control devices used to meet the requirements of this subpart.
- (c) **Equipment in vacuum service.** Equipment in vacuum service is excluded from the requirements of this subpart.
- (d) **Equipment in service less than 300 hours per calendar year.** Equipment intended to be in regulated material service less than 300 hours per calendar year is excluded from the requirements of §§ 63.1025 through 63.1034 and § 63.1036 if it is identified as required in § 63.1022(b)(5).
- (e) **Lines and equipment not containing process fluids.** 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 that do not combine their materials with those in the processes they serve, are not considered to be part of a process unit or affected facility.
- (f) **Implementation and enforcement.** 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.
  - (1) 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 (f)(i) through (v) of this section are retained by the EPA Administrator and are not transferred to the State, local, or tribal agency.
    - (i) Approval of alternatives to the nonopacity emissions standards in §§ 63.1022 through 62.1034, under § 63.6(g), and the standards for quality improvement programs in § 63.1035. Where these standards reference another subpart, the cited provisions will be delegated according to the delegation provisions of the referenced subpart.
    - (ii) [Reserved]
    - (iii) Approval of major changes to test methods under § 63.7(e)(2)(ii) and (f) and as defined in § 63.90.
    - (iv) Approval of major changes to monitoring under § 63.8(f) and as defined in § 63.90.

- (v) Approval of major changes to recordkeeping and reporting under § 63.10(f) and as defined in § 63.90.

[64 FR 34899, June 29, 1999, as amended at 67 FR 46279, July 12, 2002]

## § 63.1020 Definitions.

All terms used in this part shall have the meaning given them in the Act and in this section.

**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 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.

**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.

**Closed-loop system** means an enclosed system that returns process fluid to the process and is not vented directly to the atmosphere.

**Closed-purge system** means a system or combination of systems 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 emissions.

**Connector** means flanged, screwed, or other joined fittings used to connect two pipelines or a pipeline 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, ceramic, or ceramic-lined (e.g., porcelain, glass, or glass-lined) as described in § 63.1027(e)(2).

**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.

**Control device** means any combustion device, recovery device, recapture device, or any combination of these devices used to comply with this part. Such equipment or devices include, but are not limited to, absorbers, carbon adsorbers, condensers, incinerators, flares, boilers, and process heaters. Primary condensers on steam strippers or fuel gas systems are not considered control devices.

**Distance piece** means an open or enclosed casing through which the piston rod travels, separating the compressor cylinder from the crankcase.

**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.

**Equipment** means each pump, compressor, agitator, pressure relief device, sampling connection system, open-ended valve or line, valve, connector, and instrumentation system in regulated material service; and any control devices or systems used to comply with this subpart.

**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 §§ 63.1023(b) and (c) of this subpart in to verify whether the leak is repaired, unless the owner or operator determines by other means that the leak is not repaired.

**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 a fuel gas in combustion equipment, such as furnaces and gas turbines, either singly or in combination.

**In food and medical service** means that a piece of equipment in regulated material 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:

- (1) A dilution of product quality so that the product would not meet written specifications,
- (2) An exothermic reaction which is a safety hazard,
- (3) The intended reaction to be slowed down or stopped, or
- (4) An undesired side reaction to occur.

**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 organic compounds is greater than 0.3 kilopascals at 20 °C,
- (2) 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
- (3) The fluid is a liquid at operating conditions.

(Note to definition of “in light liquid service”: Vapor pressures may be determined by standard reference texts or ASTM D-2879.)

**In liquid service** means that a piece of equipment in regulated material service is not in gas and vapor service.

*In organic hazardous air pollutant or in organic HAP service* means that piece of equipment either contains or contracts 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) of subpart H. The provisions of § 63.180(d) of subpart H also specify how to determine that a piece of equipment is not in organic HAP service.

*In regulated material service* means, for the purposes of this subpart, equipment which meets the definition of “in VOC service,” “in VHAP service,” “in organic hazardous air pollutant service,” or “in” other chemicals or groups of chemicals “service” as defined in the referencing subpart.

*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 below ambient pressure.

*Initial startup* means for new sources, the first time the source begins production. For additions or changes not defined as a new source by this subpart, initial startup means the first time additional or changed equipment is put into operation. Initial startup does not include operation solely for testing of equipment. Initial startup does not include subsequent startup of process units following malfunction or process unit shutdowns. Except for equipment leaks, initial startup also does not include subsequent startups (of process units following changes in product for flexible operation units or following recharging of equipment in batch unit operations).

*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 1.27 centimeters (0.5 inches) and smaller, and connectors nominally 1.91 centimeters (0.75 inches) and smaller in diameter are considered instrumentation systems for the purposes of this subpart. Valves greater than nominally 1.27 centimeters (0.5 inches) and connectors greater than nominally 1.91 centimeters (0.75 inches) associated with instrumentation systems are not considered part of instrumentation systems and must be monitored individually.

*Liquids dripping* means any visible leakage from the seal including dripping, spraying, misting, clouding, and ice formation. Indications of liquids dripping include puddling or new stains that are indicative of an existing evaporated drip.

*Nonrepairable* means that it is technically infeasible to repair a piece of equipment from which a leak has been detected without a process unit or affected facility shutdown.

*Open-ended valve or line* means any valve, except 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.

*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, photoionization, or thermal conductivity.

*Polymerizing monomer* means a compound which may form polymer buildup in pump mechanical seals resulting in rapid mechanical seal failure.

*Pressure release* means the emission of materials resulting from the system pressure being greater than the set pressure of the relief device. This release can be one release or a series of releases over a short time period due to a malfunction in the process.



**Pressure relief device or valve** means a safety device used to prevent operating pressures from exceeding the maximum allowable working pressure of the process equipment. A common pressure relief device is a spring-loaded pressure relief valve. 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.

**Process unit** means the equipment specified in the definitions of process unit in the applicable referencing subpart. If the referencing subpart does not define process unit, then for the purposes of this part, process unit means the equipment assembled and connected by pipes or ducts to process raw materials and to manufacture an intended product.

**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 affected. The following are not considered process unit shutdowns:

- (1) An unscheduled work practice or operations procedure that stops production from a process unit, or part of a process unit, for less than 24 hours.
- (2) An unscheduled work practice or operations 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.
- (3) The use of spare equipment and technically feasible bypassing of equipment without stopping production.

**Referencing subpart** means the subpart that refers an owner or operator to this subpart.

**Regulated material**, for purposes of this part, refers to gas from volatile organic liquids (VOL), volatile organic compounds (VOC), hazardous air pollutants (HAP), or other chemicals or groups of chemicals that are regulated by the referencing subpart.

**Regulated source** for the purposes of this part, means the stationary source, the group of stationary sources, or the portion of a stationary source that is regulated by a referencing subpart.

**Relief device or valve** means a valve used only to release an unplanned, nonroutine discharge. A relief valve discharge can result from an operator error, a malfunction such as a power failure or equipment failure, or other unexpected cause that requires immediate venting of gas from process equipment in order to avoid safety hazards or equipment damage.

**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 monitored as specified in §§ 63.1023(b) and (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 emissions are conveyed to any enclosed portion of a process unit where the emissions are predominantly 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.

**Sampling connection system** means an assembly of equipment within a process unit or affected facility used during periods of representative operation to take samples of the process fluid. Equipment used to take nonroutine grab samples is not considered a sampling connection system.

**Screwed (threaded) 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).

**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 for the purposes of this subpart, the pressure at which a properly operating pressure relief device begins to open to relieve atypical process system operating pressure.

**Start-up** means the setting into operation of a piece of equipment or a control device that is subject to this subpart.

### § 63.1021 Alternative means of emission limitation.

- (a) **Performance standard exemption.** The provisions of paragraph (b) of this section do not apply to the performance standards of § 63.1030(b) for pressure relief devices or § 63.1031(f) for compressors operating under the alternative compressor standard.
- (b) **Requests by owners or operators.** An owner or operator may request a determination of alternative means of emission limitation to the requirements of §§ 63.1025 through 63.1034 as provided in paragraph (d) of this section. If the Administrator makes a determination that a means of emission limitation is a permissible alternative, the owner or operator shall either comply with the alternative or comply with the requirements of §§ 63.1025 through 63.1034.
- (c) **Requests by manufacturers of equipment.**
  - (1) Manufacturers of equipment used to control equipment leaks of the regulated material may apply to the Administrator for permission for an alternative means of emission limitation that achieves a reduction in emissions of the regulated material achieved by the equipment, design, and operational requirements of this subpart.
  - (2) The Administrator will grant permission according to the provisions of paragraph (d) of this section.
- (d) **Permission to use an alternative means of emission limitation.** Permission to use an alternative means of emission limitation shall be governed by the procedures in paragraphs (d)(1) through (d)(4) of this section.
  - (1) Where the standard is an equipment, design, or operational requirement, the requirements of paragraphs (d)(1)(i) through (d)(1)(iii) of this section apply.
    - (i) Each owner or operator applying for permission to use an alternative means of emission limitation shall be responsible for collecting and verifying emission performance test data for an alternative means of emission limitation.
    - (ii) The Administrator will compare test data for the means of emission limitation to test data for the equipment, design, and operational requirements.
    - (iii) The Administrator may condition the permission on requirements that may be necessary to ensure operation and maintenance to achieve at least the same emission reduction as the equipment, design, and operational requirements of this subpart.

- (2) Where the standard is a work practice, the requirements of paragraphs (d)(2)(i) through (d)(2)(vi) of this section apply.
  - (i) Each owner or operator applying for permission to use an alternative means of emission limitation shall be responsible for collecting and verifying test data for the alternative.
  - (ii) 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.
  - (iii) For each kind of equipment for which permission is requested, the emission reduction achieved by the alternative means of emission limitation shall be demonstrated.
  - (iv) Each owner or operator applying for such 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.
  - (v) 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 (d)(2)(iv) of this section.
  - (vi) 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.
- (3) An owner or operator may offer a unique approach to demonstrate the alternative means of emission limitation.
- (4) If, in the judgement of the Administrator, an alternative means of emission limitation will be approved, the Administrator will publish a notice of the determination in the FEDERAL REGISTER using the procedures specified in the referencing subpart.

## § 63.1022 Equipment identification.

- (a) **General equipment identification.** Equipment subject to this subpart shall be identified. 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, by designation of process unit or affected facility boundaries by some form of weatherproof identification, or by other appropriate methods.
- (b) **Additional equipment identification.** In addition to the general identification required by paragraph (a) of this section, equipment subject to any of the provisions in §§ 63.1023 through 63.1034 shall be specifically identified as required in paragraphs (b)(1) through (b)(5) of this section, as applicable. This paragraph does not apply to an owner or operator of a batch product process who elects to pressure test the batch product process equipment train pursuant to § 63.1036.
  - (1) **Connectors.** Except for inaccessible, ceramic, or ceramic-lined connectors meeting the provision of § 63.1027(e)(2) and instrumentation systems identified pursuant to paragraph (b)(4) of this section, identify the connectors 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 identification shall be complete no later than the completion of the initial survey required by paragraph (a) of this section.

- (2) ***Routed to a process or fuel gas system or equipped with a closed vent system and control device.*** Identify the equipment that the owner or operator elects to route to a process or fuel gas system or equip with a closed vent system and control device, under the provisions of § 63.1026(e)(3) (pumps in light liquid service), § 63.1028(e)(3) (agitators), § 63.1030(d) (pressure relief devices in gas and vapor service), § 63.1031(e) (compressors), or § 63.1037(a) (alternative means of emission limitation for enclosed-vented process units).
- (3) ***Pressure relief devices.*** Identify the pressure relief devices equipped with rupture disks, under the provisions of § 63.1030(e).
- (4) ***Instrumentation systems.*** Identify instrumentation systems subject to the provisions of § 63.1029 of this subpart. Individual components in an instrumentation system need not be identified.
- (5) ***Equipment in service less than 300 hours per calendar year.*** The identity, either by list, location (area or group), or other method, of equipment in regulated material service less than 300 hours per calendar year within a process unit or affected facilities subject to the provisions of this subpart shall be recorded.

(c) ***Special equipment designations: Equipment that is unsafe or difficult-to-monitor —***

- (1) ***Designation and criteria for unsafe-to-monitor.*** Valves meeting the provisions of § 63.1025(e)(1), pumps meeting the provisions of § 63.1026(e)(6), connectors meeting the provisions of § 63.1027(e)(1), and agitators meeting the provisions of § 63.1028(e)(7) may be designated unsafe-to-monitor if the owner or operator determines that monitoring personnel would be exposed to an immediate danger as a consequence of complying with the monitoring requirements of this subpart. Examples of unsafe-to-monitor equipment include, but is not limited to, equipment under extreme pressure or heat.
- (2) ***Designation and criteria for difficult-to-monitor.*** Valves meeting the provisions of § 63.1025(e)(2) may be designated difficult-to-monitor if the provisions of paragraph (c)(2)(i) apply. Agitators meeting the provisions of § 63.1028(e)(5) may be designated difficult-to-monitor if the provisions of paragraph (c)(2)(ii) apply.
  - (i) ***Valves.***
    - (A) The owner or operator of the valve determines that the valve cannot 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 regulated material service; and
    - (B) The process unit or affected facility 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.
  - (ii) ***Agitators.*** The owner or operator determines that the agitator cannot 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 regulated material service.
- (3) ***Identification of unsafe or difficult-to-monitor equipment.*** The owner or operator shall record the identity of equipment designated as unsafe-to-monitor according to the provisions of paragraph (c)(1) of this section and the planned schedule for monitoring this equipment. The owner or operator shall record the identity of equipment designated as difficult-to-monitor according to the provisions

of paragraph (c)(2) of this section, the planned schedule for monitoring this equipment, and an explanation why the equipment is unsafe or difficult-to-monitor. This record must be kept at the plant and be available for review by an inspector.

(4) **Written plan requirements.**

- (i) The owner or operator of equipment designated as unsafe-to-monitor according to the provisions of paragraph (c)(1) of this section shall have a written plan that requires monitoring of the equipment as frequently as practical 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 § 63.1024 if a leak is detected.
- (ii) The owner or operator of equipment designated as difficult-to-monitor according to the provisions of paragraph (c)(2) of this section shall have a written plan that requires monitoring of the equipment at least once per calendar year and repair of the equipment according to the procedures in § 63.1024 if a leak is detected.

(d) **Special equipment designations: Equipment that is unsafe-to-repair —**

- (1) **Designation and criteria.** Connectors subject to the provisions of § 63.1024(e) may be designated unsafe-to-repair if the owner or operator determines that repair personnel would be exposed to an immediate danger as a consequence of complying with the repair requirements of this subpart, and if the connector will be repaired before the end of the next process unit or affected facility shutdown as specified in § 63.1024(e)(2).
- (2) **Identification of equipment.** The identity of connectors designated as unsafe-to-repair and an explanation why the connector is unsafe-to-repair shall be recorded.

(e) **Special equipment designations: Compressors operating with an instrument reading of less than 500 parts per million above background.** Identify the 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 § 63.1031(f).

(f) **Special equipment designations: Equipment in heavy liquid service.** The owner or operator of equipment in heavy liquid service shall comply with the requirements of either paragraph (f)(1) or (f)(2) of this section, as provided in paragraph (f)(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.

**§ 63.1023 Instrument and sensory monitoring for leaks.**

- (a) **Monitoring for leaks.** The owner or operator of a regulated source subject to this subpart shall monitor regulated equipment as specified in paragraph (a)(1) of this section for instrument monitoring and paragraph (a)(2) of this section for sensory monitoring.

(1) **Instrument monitoring for leaks.**

- (i) Valves in gas and vapor service and in light liquid service shall be monitored pursuant to § 63.1025(b).
- (ii) Pumps in light liquid service shall be monitored pursuant to § 63.1026(b).
- (iii) Connectors in gas and vapor service and in light liquid service shall be monitored pursuant to § 63.1027(b).
- (iv) Agitators in gas and vapor service and in light liquid service shall be monitored pursuant to § 63.1028(c).
- (v) Pressure relief devices in gas and vapor service shall be monitored pursuant to § 63.1030(c).
- (vi) Compressors designated to operate with an instrument reading less than 500 parts per million above background, as described in § 63.1022(e), shall be monitored pursuant to § 63.1031(f).

(2) **Sensory monitoring for leaks.**

- (i) Pumps in light liquid service shall be observed pursuant to §§ 63.1026(b)(4) and (e)(1)(v).
- (ii) [Reserved]
- (iii) Agitators in gas and vapor service and in light liquid service shall be observed pursuant to § 63.1028(c)(3) or (e)(1)(iv).
- (iv) [Reserved]

(b) **Instrument monitoring methods.** Instrument monitoring, as required under this subpart, shall comply with the requirements specified in paragraphs (b)(1) through (b)(6) of this section.

- (1) **Monitoring method.** Monitoring shall comply with Method 21 of 40 CFR part 60, appendix A, except as otherwise provided in this section.

(2) **Detection instrument performance criteria.**

- (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, paragraph (a) of Method 21 shall be for the representative composition of the process fluid not each individual VOC in the stream. For process streams that contain nitrogen, air, water or other inerts that are not HAP or VOC, the representative stream response factor shall be determined on an inert-free basis. The response factor may be determined at any concentration for which monitoring for leaks will be conducted.
- (ii) If there is no instrument commercially available 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 representative response factor of the process fluid, calculated on an inert-free basis as described in paragraph (b)(2)(i) of this section.

- (3) **Detection instrument calibration procedure.** 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) **Detection instrument calibration gas.** Calibration gases shall be zero air (less than 10 parts per million of hydrocarbon in air); and the gases specified in paragraph (b)(4)(i) of this section except as provided in paragraph (b)(4)(ii) of this section.
- (i) Mixtures of methane in air at a concentration no more than 2,000 parts per million greater than the leak definition concentration of the equipment monitored. 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.
- (ii) 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.
- (5) **Monitoring performance.** Monitoring shall be performed when the equipment is in regulated material service or is in use with any other detectable material.
- (6) **Monitoring data.** Monitoring data obtained prior to the regulated source becoming subject to the referencing subpart that do not meet the criteria specified in paragraphs (b)(1) through (b)(5) of this section may still be used to qualify initially for less frequent monitoring under the provisions in § 63.1025(a)(2), (b)(3) or (b)(4) for valves or § 63.1027(b)(3) for connectors provided the departures from the criteria or from the specified monitoring frequency of § 63.1025(b)(3) or (b)(4) or § 63.1027(b)(3) 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 6 weeks instead of monthly or quarterly), following the performance criteria of section 3.1.2, paragraph (a) of Method 21 of appendix A of 40 CFR part 60 instead of paragraph (b)(2) of this section, or monitoring using 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) **Instrument monitoring using background adjustments.** The owner or operator may elect to adjust or not to adjust the instrument readings for background. If an owner or operator elects not to adjust instrument readings for background, the owner or operator shall monitor the equipment according to the procedures specified in paragraphs (b)(1) through (b)(5) of this section. In such cases, all instrument readings shall be compared directly to the applicable leak definition for the monitored equipment to determine whether there is a leak or to determine compliance with § 63.1030(b) (pressure relief devices) or § 63.1031(f) (alternative compressor standard). 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 (b)(5) of this section shall apply.
- (2) The background level shall be determined, using the procedures in Method 21 of 40 CFR part 60, appendix A.
- (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 shall be compared to the applicable leak definition for the monitored equipment to determine whether there is a leak or to determine compliance with § 63.1030(b) (pressure relief devices) or § 63.1031(f) (alternative compressor standard).
- (d) **Sensory monitoring methods.** Sensory monitoring consists of visual, audible, olfactory, or any other detection method used to determine a potential leak to the atmosphere.
- (e) **Leaking equipment identification and records.**
  - (1) When each leak is detected pursuant to the monitoring specified in paragraph (a) of this section, a weatherproof and readily visible identification, shall be attached to the leaking equipment.
  - (2) When each leak is detected, the information specified in § 63.1024(f) shall be recorded and kept pursuant to the referencing subpart, except for the information for connectors complying with the 8 year monitoring period allowed under § 63.1027(b)(3)(iii) shall be kept 5 years beyond the date of its last use.

### § 63.1024 Leak repair.

- (a) **Leak repair schedule.** The owner or operator shall repair each leak detected as soon as practical, but not later than 15 calendar days after it is detected, except as provided in paragraphs (d) and (e) of this section. A first attempt at repair as defined in this subpart shall be made no later than 5 calendar days after the leak is detected. First attempt at repair for pumps includes, but is not limited to, tightening the packing gland nuts and/or ensuring that the seal flush is operating at design pressure and temperature. First attempt at repair for valves includes, but is not limited to, tightening the bonnet bolts, and/or replacing the bonnet bolts, and/or tightening the packing gland nuts, and/or injecting lubricant into the lubricated packing.
- (b) [Reserved]
- (c) **Leak identification removal —**
  - (1) **Valves and connectors in gas/vapor and light liquid service.** The leak identification on a valve in gas/vapor or light liquid service may be removed after it has been monitored as specified in § 63.1025(d)(2), and no leak has been detected during that monitoring. The leak identification on a connector in gas/vapor or light liquid service may be removed after it has been monitored as specified in § 63.1027(b)(3)(iv) and no leak has been detected during that monitoring.
  - (2) **Other equipment.** The identification that has been placed, pursuant to § 63.1023(e)(1), on equipment determined to have a leak, except for a valve or for a connector in gas/vapor or light liquid service that is subject to the provisions of § 63.1027(b)(3)(iv), may be removed after it is repaired.
- (d) **Delay of repair.** Delay of repair is allowed for any of the conditions specified in paragraphs (d)(1) through (d)(5) of this section. The owner or operator shall maintain a record of the facts that explain any delay of repairs and, where appropriate, why the repair was technically infeasible without a process unit shutdown.
  - (1) Delay of repair of equipment for which leaks have been detected is allowed if repair within 15 days after a leak is detected is technically infeasible without a process unit or affected facility shutdown. Repair of this equipment shall occur as soon as practical, but no later than the end of the next process unit or affected facility shutdown, except as provided in paragraph (d)(5) of this section.
  - (2) 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 regulated material service.



- (3) Delay of repair for valves, connectors, and agitators is also allowed if the provisions of paragraphs (d)(3)(i) and (d)(3)(ii) of this section are met.
  - (i) 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
  - (ii) When repair procedures are effected, the purged material is collected and destroyed, collected and routed to a fuel gas system or process, or recovered in a control device complying with either § 63.1034 or § 63.1021(b) of this part.
- (4) Delay of repair for pumps is also allowed if the provisions of paragraphs (d)(4)(i) and (d)(4)(ii) of this section are met.
  - (i) Repair requires replacing the existing seal design with a new system that the owner or operator has determined under the provisions of § 63.1035(d) will provide better performance or one of the specifications of paragraphs (d)(4)(i)(A) through (d)(4)(i)(C) of this section are met.
    - (A) A dual mechanical seal system that meets the requirements of § 63.1026(e)(1) will be installed;
    - (B) A pump that meets the requirements of § 63.1026(e)(2) will be installed; or
    - (C) A system that routes emissions to a process or a fuel gas system or a closed vent system and control device that meets the requirements of § 63.1026(e)(3) will be installed; and
  - (ii) Repair is completed as soon as practical, but not later than 6 months after the leak was detected.
- (5) Delay of repair beyond a process unit or affected facility shutdown will be allowed for a valve if valve assembly replacement is necessary during the process unit or affected facility shutdown, and 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 or affected facility shutdown will not be allowed unless the third process unit or affected facility shutdown occurs sooner than 6 months after the first process unit or affected facility shutdown.
- (e) **Unsafe-to-repair—connectors.** Any connector that is designated, as described in § 63.1022(d), as an unsafe-to-repair connector is exempt from the requirements of § 63.1027(d), and paragraph (a) of this section.
- (f) **Leak repair records.** For each leak detected, the information specified in paragraphs (f)(1) through (f)(5) of this section shall be recorded and maintained pursuant to the referencing subpart.
  - (1) The date of first attempt to repair the leak.
  - (2) The date of successful repair of the leak.
  - (3) Maximum instrument reading measured by Method 21 of 40 CFR part 60, appendix A at the time the leak is successfully repaired or determined to be nonreparable.
  - (4) “Repair delayed” and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak as specified in paragraphs (f)(4)(i) and (f)(4)(ii) of this section.

- (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, and malfunction plan, as required by the referencing subpart 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.
  - (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.
- (5) Dates of process unit or affected facility shutdowns that occur while the equipment is unrepaired.

### § 63.1025 Valves in gas and vapor service and in light liquid service standards.

(a) *Compliance schedule.*

- (1) The owner or operator shall comply with this section no later than the compliance dates specified in the referencing subpart.
- (2) The use of monitoring data generated before the regulated source became subject to the referencing subpart to qualify initially for less frequent monitoring is governed by the provisions of § 63.1023(b)(6).

(b) *Leak detection.* Unless otherwise specified in § 63.1021(b) or paragraph (e) of this section, or the referencing subpart, the owner or operator shall monitor all valves at the intervals specified in paragraphs (b)(3) and/or (b)(4) of this section and shall comply with all other provisions of this section.

- (1) *Monitoring method.* The valves shall be monitored to detect leaks by the method specified in § 63.1023(b) and, as applicable, § 63.1023(c).
- (2) *Instrument reading that defines a leak.* The instrument reading that defines a leak is 500 parts per million or greater.
- (3) *Monitoring frequency.* The owner or operator shall monitor valves for leaks at the intervals specified in paragraphs (b)(3)(i) through (b)(3)(v) of this section and shall keep the record specified in paragraph (b)(3)(vi) of this section.
  - (i) If at least the greater of 2 valves or 2 percent of the valves in a process unit leak, as calculated according to paragraph (c) of this section, the owner or operator shall monitor each valve once per month.
  - (ii) At process units with less than the greater of 2 leaking valves or 2 percent leaking valves, the owner or operator shall monitor each valve once each quarter, except as provided in paragraphs (b)(3)(iii) through (b)(3)(v) of this section. Monitoring data generated before the regulated source became subject to the referencing subpart and meeting the criteria of either § 63.1023(b)(1) through (b)(5), or § 63.1023(b)(6), may be used to qualify initially for less frequent monitoring under paragraphs (b)(3)(iii) through (b)(3)(v) of this section.
  - (iii) At process units with less than 1 percent leaking valves, the owner or operator may elect to monitor each valve once every two quarters
  - (iv) At process units with less than 0.5 percent leaking valves, the owner or operator may elect to monitor each valve once every four quarters.
  - (v) At process units with less than 0.25 percent leaking valves, the owner or operator may elect to monitor each valve once every 2 years.

(vi) The owner or operator shall keep a record of the monitoring schedule for each process unit.

(4) **Valve subgrouping.** For a process unit or a group of process units to which this subpart applies, an owner or operator may choose to subdivide the valves in the applicable process unit or group of process units and apply the provisions of paragraph (b)(3) of this section to each subgroup. If the owner or operator elects to subdivide the valves in the applicable process unit or group of process units, then the provisions of paragraphs (b)(4)(i) through (b)(4)(viii) of this section apply.

(i) The overall performance of total valves in the applicable process unit or group of process units to be subdivided shall be less than 2 percent leaking valves, as detected according to paragraphs (b)(1) and (b)(2) of this section and as calculated according to paragraphs (c)(1)(ii) and (c)(2) of this section.

(ii) The initial assignment or subsequent reassignment of valves to subgroups shall be governed by the provisions of paragraphs (b)(4)(ii)(A) through (b)(4)(ii)(C) of this section.

(A) The owner or operator shall determine which valves are assigned to each subgroup. Valves with less than one year of monitoring data or valves not monitored within the last twelve months must be placed initially into the most frequently monitored subgroup until at least one year of monitoring data have been obtained.

(B) Any valve or group of valves can be reassigned from a less frequently monitored subgroup to a more frequently monitored subgroup provided that the valves to be reassigned were monitored during the most recent monitoring period for the less frequently monitored subgroup. The monitoring results must be included with that less frequently monitored subgroup's associated percent leaking valves calculation for that monitoring event.

(C) Any valve or group of valves can be reassigned from a more frequently monitored subgroup to a less frequently monitored subgroup provided that the valves to be reassigned have not leaked for the period of the less frequently monitored subgroup (e.g., for the last 12 months, if the valve or group of valves is to be reassigned to a subgroup being monitored annually). Nonrepairable valves may not be reassigned to a less frequently monitored subgroup.

(iii) The owner or operator shall determine every 6 months if the overall performance of total valves in the applicable process unit or group of process units is less than 2 percent leaking valves and so indicate the performance in the next Periodic Report. If the overall performance of total valves in the applicable process unit or group of process units is 2 percent leaking valves or greater, the owner or operator shall no longer subgroup and shall revert to the program required in paragraphs (b)(1) through (b)(3) of this section for that applicable process unit or group of process units. An owner or operator can again elect to comply with the valve subgrouping procedures of paragraph (b)(4) of this section if future overall performance of total valves in the process unit or group of process units is again less than 2 percent. The overall performance of total valves in the applicable process unit or group of process units shall be calculated as a weighted average of the percent leaking valves of each subgroup according to Equation number 1:

$$\%V_{LO} = \frac{\sum_{i=1}^n (\%V_{Li} \times V_i)}{\sum_{i=1}^n V_i} \quad [\text{Eq. 1}]$$

where:

$\%V_{LO}$  = Overall performance of total valves in the applicable process unit or group of process units

$\%V_{Li}$  = Percent leaking valves in subgroup i, most recent value calculated according to the procedures in paragraphs (c)(1)(ii) and (c)(2) of this section.

$V_i$  = Number of valves in subgroup i.

n = Number of subgroups.

- (iv) The owner or operator shall maintain records specified in paragraphs (b)(4)(iv)(A) through (b)(4)(iv)(D) of this section.
  - (A) Which valves are assigned to each subgroup,
  - (B) Monitoring results and calculations made for each subgroup for each monitoring period,
  - (C) Which valves are reassigned, the last monitoring result prior to reassignment, and when they were reassigned, and
  - (D) The results of the semiannual overall performance calculation required in paragraph (b)(4)(iii) of this section.
- (v) The owner or operator shall notify the Administrator no later than 30 days prior to the beginning of the next monitoring period of the decision to subgroup valves. The notification shall identify the participating process units and the number of valves assigned to each subgroup, if applicable, and may be included in the next Periodic Report.
- (vi) The owner or operator shall submit in the periodic reports the information specified in paragraphs (b)(4)(vi)(A) and (b)(4)(vi)(B).
  - (A) Total number of valves in each subgroup, and
  - (B) Results of the semiannual overall performance calculation required by paragraph (b)(4)(iii) of this section.
- (vii) To determine the monitoring frequency for each subgroup, the calculation procedures of paragraph (c)(2) of this section shall be used.
- (viii) Except for the overall performance calculations required by paragraphs (b)(4)(i) and (iii) of this section, each subgroup shall be treated as if it were a process unit for the purposes of applying the provisions of this section.

(c) *Percent leaking valves calculation* —

(1) **Calculation basis and procedures.**

- (i) The owner or operator shall decide no later than the compliance date of this part or upon revision of an operating permit whether to calculate percent leaking valves on a process unit or group of process units basis. Once the owner or operator has decided, all subsequent percentage calculations shall be made on the same basis and this shall be the basis used for comparison with the subgrouping criteria specified in paragraph (b)(4)(i) of this section.
- (ii) The percent leaking valves for each monitoring period for each process unit or valve subgroup, as provided in paragraph (b)(4) of this section, shall be calculated using the following equation:

$$\%V_L = (V_L / V_T) \times 100 \quad [\text{Eq. 2}]$$

where:

$\%V_L$  = Percent leaking valves.

$V_L$  = Number of valves found leaking, excluding nonrepairable valves, as provided in paragraph (c)(3) of this section, and including those valves found leaking pursuant to paragraphs (d)(2)(iii)(A) and (d)(2)(iii)(B) of this section.

$V_T$  = The sum of the total number of valves monitored.

- (2) **Calculation for monitoring frequency.** When determining monitoring frequency for each process unit or valve subgroup subject to monthly, quarterly, or semiannual monitoring frequencies, the percent leaking valves shall be the arithmetic average of the percent leaking valves from the last two monitoring periods. When determining monitoring frequency for each process unit or valve subgroup subject to annual or biennial (once every 2 years) monitoring frequencies, the percent leaking valves shall be the arithmetic average of the percent leaking valves from the last three monitoring periods.

(3) **Nonrepairable valves.**

- (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 (c)(3)(ii) of this section. Otherwise, a number of nonrepairable valves (identified and included in the percent leaking valves calculation in a previous period) up to a maximum of 1 percent of the total number of valves in regulated material service at a process unit or affected facility 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 regulated material service at a process unit or affected facility, the number of nonrepairable valves exceeding 1 percent of the total number of valves in regulated material service shall be included in the calculation of percent leaking valves.

(d) **Leak repair.**

- (1) If a leak is determined pursuant to paragraph (b), (e)(1), or (e)(2) of this section, then the leak shall be repaired using the procedures in § 63.1024, as applicable.
- (2) After a leak has been repaired, the valve shall be monitored at least once within the first 3 months after its repair. The monitoring required by this paragraph is in addition to the monitoring required to satisfy the definition of repaired and first attempt at repair.

- (i) The monitoring shall be conducted as specified in § 63.1023(b) and (c) of this section, as appropriate, to determine whether the valve has resumed leaking.
- (ii) Periodic monitoring required by paragraph (b) of this section may be used to satisfy the requirements of this paragraph, if the timing of the monitoring period coincides with the time specified in this paragraph. Alternatively, other monitoring may be performed to satisfy the requirements of this paragraph, regardless of whether the timing of the monitoring period for periodic monitoring coincides with the time specified in this paragraph.
- (iii) If a leak is detected by monitoring that is conducted pursuant to paragraph (d)(2) of this section, the owner or operator shall follow the provisions of paragraphs (d)(2)(iii)(A) and (d)(2)(iii)(B) of this section, to determine whether that valve must be counted as a leaking valve for purposes of paragraph (c)(1)(ii) of this section.
  - (A) If the owner or operator elected to use periodic monitoring required by paragraph (b) of this section to satisfy the requirements of paragraph (d)(2) 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 paragraph (b) of this section, to satisfy the requirements of paragraph (d)(2) 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.

(e) **Special provisions for valves —**

- (1) **Unsafe-to-monitor valves.** Any valve that is designated, as described in § 63.1022(c)(1), as an unsafe-to-monitor valve is exempt from the requirements of paragraphs (b) and (d)(2) of this section and the owner or operator shall monitor the valve according to the written plan specified in § 63.1022(c)(4).
- (2) **Difficult-to-monitor valves.** Any valve that is designated, as described in § 63.1022(c)(2), as a difficult-to-monitor valve is exempt from the requirements of paragraph (b) of this section and the owner or operator shall monitor the valve according to the written plan specified in § 63.1022(c)(4).
- (3) **Fewer than 250 valves.** Any equipment located at a plant site with fewer than 250 valves in regulated material service is exempt from the requirements for monthly monitoring specified in paragraph (b)(3)(i) of this section. Instead, the owner or operator shall monitor each valve in regulated material service for leaks once each quarter, as provided in paragraphs (e)(1) and (e)(2) of this section.

**§ 63.1026 Pumps in light liquid service standards.**

- (a) **Compliance schedule.** The owner or operator shall comply with this section no later than the compliance dates specified in the referencing subpart.
- (b) **Leak detection.** Unless otherwise specified in § 63.1021(b), § 63.1036, § 63.1037, or paragraph (e) of this section, the owner or operator shall monitor each pump to detect leaks and shall comply with all other provisions of this section.
  - (1) **Monitoring method and frequency.** The pumps shall be monitored monthly to detect leaks by the method specified in § 63.1023(b) and, as applicable, § 63.1023(c).
  - (2) **Instrument reading that defines a leak.** The instrument reading that defines a leak is specified in paragraphs (b)(2)(i) through (b)(2)(iii) of this section.

- (i) 5,000 parts per million or greater for pumps handling polymerizing monomers;
  - (ii) 2,000 parts per million or greater for pumps in food/medical service; and
  - (iii) 1,000 parts per million or greater for all other pumps.
- (3) **Leak repair exception.** For pumps 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) **Visual inspection.** Each pump shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal. The owner or operator shall document that the inspection was conducted and the date of the inspection. If there are indications of liquids dripping from the pump seal at the time of the weekly inspection, the owner or operator shall follow the procedure specified in either paragraph (b)(4)(i) or (b)(4)(ii) of this section.
- (i) The owner or operator shall monitor the pump as specified in § 63.1023(b) and, as applicable, § 63.1023(c). If the instrument reading indicates a leak as specified in paragraph (b)(2) of this section, a leak is detected and it shall be repaired using the procedures in § 63.1024, except as specified in paragraph (b)(3) of this section; or
  - (ii) The owner or operator shall eliminate the visual indications of liquids dripping.

(c) **Percent leaking pumps calculation.**

- (1) The owner or operator shall decide no later than the compliance date of this part or upon revision of an operating permit whether to calculate percent leaking pumps on a process unit basis or group of process units basis. Once the owner or operator has decided, all subsequent percentage calculations shall be made on the same basis.
- (2) If, when calculated on a 6-month rolling average, at least 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 § 63.1035.
- (3) The number of pumps at a process unit or affected facility shall be the sum of all the pumps in regulated material service, except that pumps found leaking in a continuous process unit or affected facility 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:

$$\%P_L = ((P_L - P_S)/(P_T - P_S)) \times 100 \quad [\text{Eq. 3}]$$

Where:

$\%P_L$  = Percent leaking pumps

$P_L$  = Number of pumps found leaking as determined through monthly monitoring as required in paragraph (b)(1) of this section. Do not include results from inspection of unsafe-to-monitor pumps pursuant to paragraph (e)(6) of this section.

$P_S$  = Number of pumps leaking within 1 month of start-up during the current monitoring period.

$P_T$  = Total pumps in regulated material service, including those meeting the criteria in paragraphs (e)(1), (e)(2), (e)(3), and (e)(6) of this section.

(d) **Leak repair.** If a leak is detected pursuant to paragraph (b) of this section, then the leak shall be repaired using the procedures in § 63.1024, as applicable, unless otherwise specified in paragraph (b)(5) of this section for leaks identified by visual indications of liquids dripping.

(e) **Special provisions for pumps —**

(1) **Dual mechanical seal pumps.** Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of paragraph (b) of this section, provided the requirements specified in paragraphs (e)(1)(i) through (e)(1)(viii) of this section are met.

(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. The owner or operator shall keep records at the plant of the design criteria and an explanation of the design criteria; and any changes to these criteria and the reasons for the changes. This record must be available for review by an inspector.

(ii) Each dual mechanical seal system shall meet the requirements specified in paragraph (e)(1)(ii)(A), (e)(1)(ii)(B), or (e)(1)(ii)(C) of this section.

(A) 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 stuffing box pressure; or

(B) 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 either § 63.1034 or § 63.1021(b) of this part; or

(C) Equipped with a closed-loop system that purges the barrier fluid into a process stream.

(iii) The barrier fluid is not in light liquid service.

(iv) Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.

(v) Each pump is checked by visual inspection each calendar week for indications of liquids dripping from the pump seal. The owner or operator shall document that the inspection was conducted and the date of the inspection. If there are indications of liquids dripping from the pump seal at the time of the weekly inspection, the owner or operator shall follow the procedure specified in paragraphs (e)(1)(v)(A) or (e)(1)(v)(B) of this section prior to the next required inspection.

(A) The owner or operator shall monitor the pump as specified in § 63.1023(b) and, as applicable, § 63.1023 (c), to determine if there is a leak of regulated material in the barrier fluid. If an instrument reading of 1,000 parts per million or greater is measured, a leak is detected and it shall be repaired using the procedures in § 63.1024; or

(B) The owner or operator shall eliminate the visual indications of liquids dripping.



- (vi) If indications of liquids dripping from the pump seal exceed the criteria established in paragraph (e)(1)(i) of this section, or if based on the criteria established in paragraph (e)(1)(i) of this section the sensor indicates failure of the seal system, the barrier fluid system, or both, a leak is detected.
- (vii) Each sensor as described in paragraph (e)(1)(iv) 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.
- (viii) When a leak is detected pursuant to paragraph (e)(1)(vi) of this section, it shall be repaired as specified in § 63.1024.
- (2) **No external shaft.** Any pump that is designed with no externally actuated shaft penetrating the pump housing is exempt from the requirements of paragraph (b) of this section.
- (3) **Routed to a process or fuel gas system or equipped with a closed vent system.** 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 § 63.1034 of this part or § 63.1021(b) is exempt from the requirements of paragraph (b) of this section.
- (4) **Unmanned plant site.** Any pump that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement of paragraphs (b)(4) and (e)(1)(v) of this section, and the daily requirements of paragraph (e)(1)(vii) of this section, provided that each pump is visually inspected as often as practical and at least monthly.
- (5) **90 percent exemption.** If more than 90 percent of the pumps at a process unit or affected facility meet the criteria in either paragraph (e)(1) or (e)(2) of this section, the process unit or affected facility is exempt from the percent leaking calculation in paragraph (c) of this section.
- (6) **Unsafe-to-monitor pumps.** Any pump that is designated, as described in § 63.1022(c)(1), as an unsafe-to-monitor pump is exempt from the requirements of paragraph (b) of this section, the monitoring and inspection requirements of paragraphs (e)(1)(v) through (viii) of this section, and the owner or operator shall monitor and inspect the pump according to the written plan specified in § 63.1022(c)(4).

[64 FR 34899, June 29, 1999, as amended at 64 FR 63706, Nov. 22, 1999]

## § 63.1027 Connectors in gas and vapor service and in light liquid service standards.

- (a) **Compliance schedule.** The owner or operator shall monitor all connectors in each process unit initially for leaks by the later of either 12 months after the compliance date as specified in a referencing subpart or 12 months after initial startup. If all connectors in each process unit have been monitored for leaks prior to the compliance date specified in the referencing subpart, no initial monitoring is required provided either no process changes have been made since the monitoring or the owner or operator can determine that the results of the monitoring, with or without adjustments, reliably demonstrate compliance despite process changes. If required to monitor because of a process change, the owner or operator is required to monitor only those connectors involved in the process change.
- (b) **Leak detection.** Except as allowed in § 63.1021(b), § 63.1036, § 63.1037, or as specified in paragraph (e) of this section, the owner or operator shall monitor all connectors in gas and vapor and light liquid service as specified in paragraphs (a) and (b)(3) of this section.

- (1) **Monitoring method.** The connectors shall be monitored to detect leaks by the method specified in § 63.1023(b) and, as applicable, § 63.1023(c).
- (2) **Instrument reading that defines a leak.** If an instrument reading greater than or equal to 500 parts per million is measured, a leak is detected.
- (3) **Monitoring periods.** The owner or operator shall perform monitoring, subsequent to the initial monitoring required in paragraph (a) of this section, as specified in paragraphs (b)(3)(i) through (b)(3)(iii) of this section, and shall comply with the requirements of paragraphs (b)(3)(iv) and (b)(3)(v) of this section. The required period in which monitoring must be conducted shall be determined from paragraphs (b)(3)(i) through (b)(3)(iii) of this section using the monitoring results from the preceding monitoring period. The percent leaking connectors shall be calculated as specified in paragraph (c) of this section.
  - (i) If the percent leaking connectors in the process unit was greater than or equal to 0.5 percent, then monitor within 12 months (1 year).
  - (ii) If the percent leaking connectors in the process unit was greater than or equal to 0.25 percent but less than 0.5 percent, then monitor within 4 years. An owner or operator may comply with the requirements of this paragraph by monitoring at least 40 percent of the connectors within 2 years of the start of the monitoring period, provided all connectors have been monitored by the end of the 4 year monitoring period.
  - (iii) If the percent leaking connectors in the process unit was less than 0.25 percent, then monitor as provided in paragraph (b)(3)(iii)(A) of this section and either paragraph (b)(3)(iii)(B) or (b)(3)(iii)(C) of this section, as appropriate.
    - (A) An owner or operator shall monitor at least 50 percent of the connectors within 4 years of the start of the monitoring period.
    - (B) If the percent leaking connectors calculated from the monitoring results in paragraph (b)(3)(iii)(A) of this section is greater than or equal to 0.35 percent of the monitored connectors, the owner or operator shall monitor as soon as practical, but within the next 6 months, all connectors that have not yet been monitored during the monitoring period. At the conclusion of monitoring, a new monitoring period shall be started pursuant to paragraph (b)(3) of this section, based on the percent leaking connectors of the total monitored connectors.
    - (C) If the percent leaking connectors calculated from the monitoring results in paragraph (b)(3)(iii)(A) of this section is less than 0.35 percent of the monitored connectors, the owner or operator shall monitor all connectors that have not yet been monitored within 8 years of the start of the monitoring period.
  - (iv) If, during the monitoring conducted pursuant to paragraph (b)(3)(i) through (b)(3)(iii) of this section, a connector is found to be leaking, it shall be re-monitored once within 90 days after repair to confirm that it is not leaking.
  - (v) The owner or operator shall keep a record of the start date and end date of each monitoring period under this section for each process unit.
- (c) **Percent leaking connectors calculation.** For use in determining the monitoring frequency, as specified in paragraphs (a) and (b)(3) of this section, the percent leaking connectors as used in paragraphs (a) and (b)(3) of this section shall be calculated by using equation number 4.

$$\%C_L = C_L / C_t \times 100 \quad [\text{Eq. 4}]$$

Where:

$\%C_L$  = Percent leaking connectors as determined through periodic monitoring required in paragraphs (a) and (b)(3)(i) through (b)(3)(iii) of this section.

$C_L$  = Number of connectors measured at 500 parts per million or greater, by the method specified in § 63.1023(b).

$C_t$  = Total number of monitored connectors in the process unit or affected facility.

- (d) **Leak repair.** If a leak is detected pursuant to paragraphs (a) and (b) of this section, then the leak shall be repaired using the procedures in § 63.1024, as applicable.
- (e) **Special provisions for connectors —**
  - (1) **Unsafe-to-monitor connectors.** Any connector that is designated, as described in § 63.1022(c)(1), as an unsafe-to-monitor connector is exempt from the requirements of paragraphs (a) and (b) of this section and the owner or operator shall monitor according to the written plan specified in § 63.1022(c)(4).
  - (2) **Inaccessible, ceramic, or ceramic-lined connectors.**
    - (i) Any connector that is inaccessible or that is ceramic or ceramic-lined (e.g., porcelain, glass, or glass-lined), is exempt from the monitoring requirements of paragraphs (a) and (b) of this section, from the leak repair requirements of paragraph (d) of this section, and from the recordkeeping and reporting requirements of §§ 63.1038 and 63.1039. An inaccessible connector is one that meets any of the provisions specified in paragraphs (e)(2)(i)(A) through (e)(2)(i)(F) of this section, as applicable.
      - (A) Buried;
      - (B) Insulated in a manner that prevents access to the connector by a monitor probe;
      - (C) Obstructed by equipment or piping that prevents access to the connector by a monitor probe;
      - (D) Unable to be reached from a wheeled scissor-lift or hydraulic-type scaffold that would allow access to connectors up to 7.6 meters (25 feet) above the ground.
      - (E) Inaccessible because it would require elevating the monitoring personnel more than 2 meters (7 feet) above a permanent support surface or would require the erection of scaffold;
      - (F) 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.

- (ii) If any inaccessible, ceramic or ceramic-lined connector is observed by visual, audible, olfactory, or other means to be leaking, the visual, audible, olfactory, or other indications of a leak to the atmosphere shall be eliminated as soon as practical.

### § 63.1028 Agitators in gas and vapor service and in light liquid service standards.

- (a) **Compliance schedule.** The owner or operator shall comply with this section no later than the compliance dates specified in the referencing subpart.
- (b) [Reserved]
- (c) **Leak detection —**
  - (1) **Monitoring method.** Each agitator seal shall be monitored monthly to detect leaks by the methods specified in § 63.1023(b) and, as applicable, § 63.1023(c), except as provided in § 63.1021(b), § 63.1036, § 63.1037, or paragraph (e) of this section.
  - (2) **Instrument reading that defines a leak.** If an instrument reading equivalent of 10,000 parts per million or greater is measured, a leak is detected.
  - (3) **Visual inspection.**
    - (i) Each agitator seal shall be checked by visual inspection each calendar week for indications of liquids dripping from the agitator seal. The owner or operator shall document that the inspection was conducted and the date of the inspection.
    - (ii) If there are indications of liquids dripping from the agitator seal, the owner or operator shall follow the procedures specified in paragraphs (c)(3)(ii)(A) or (c)(3)(ii)(B) of this section prior to the next required inspection.
      - (A) The owner or operator shall monitor the agitator seal as specified in § 63.1023(b) and, as applicable, § 63.1023(c), to determine if there is a leak of regulated material. If an instrument reading of 10,000 parts per million or greater is measured, a leak is detected, and it shall be repaired according to paragraph (d) of this section; or
      - (B) The owner or operator shall eliminate the indications of liquids dripping from the agitator seal.
- (d) **Leak repair.** If a leak is detected, then the leak shall be repaired using the procedures in § 63.1024.
- (e) **Special provisions for agitators —**
  - (1) **Dual mechanical seal.** Each agitator equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of paragraph (c) of this section, provided the requirements specified in paragraphs (e)(1)(i) through (e)(1)(vi) of this section are met.
    - (i) Each dual mechanical seal system shall meet the applicable requirements specified in paragraphs (e)(1)(i)(A), (e)(1)(i)(B), or (e)(1)(i)(C) of this section.
      - (A) Operated with the barrier fluid at a pressure that is at all times (except during periods of startup, shutdown, or malfunction) greater than the agitator stuffing box pressure; or
      - (B) 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 meets the requirements of either § 63.1034 or § 63.1021(b); or

- (C) Equipped with a closed-loop system that purges the barrier fluid into a process stream.
- (ii) The barrier fluid is not in light liquid service.
- (iii) Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.
- (iv) Each agitator seal is checked by visual inspection each calendar week for indications of liquids dripping from the agitator seal. If there are indications of liquids dripping from the agitator seal at the time of the weekly inspection, the owner or operator shall follow the procedure specified in paragraphs (e)(1)(iv)(A) or (e)(1)(iv)(B) of this section prior to the next required inspection.
  - (A) The owner or operator shall monitor the agitator seal as specified in § 63.1023(b) and, as applicable, § 63.1023(c), to determine the presence of regulated material in the barrier fluid. If an instrument reading equivalent to or greater than 10,000 ppm is measured, a leak is detected and it shall be repaired using the procedures in § 63.1024, or
  - (B) The owner or operator shall eliminate the visual indications of liquids dripping.
- (v) Each sensor as described in paragraph (e)(1)(iii) of this section is observed daily or is equipped with an alarm unless the agitator seal is located within the boundary of an unmanned plant site.
- (vi) The owner or operator of each dual mechanical seal system shall meet the requirements specified in paragraphs (e)(1)(vi)(A) and (e)(1)(vi)(B).
  - (A) The owner or operator shall determine, based on design considerations and operating experience, criteria that indicates failure of the seal system, the barrier fluid system, or both and applicable to the presence and frequency of drips. If indications of liquids dripping from the agitator seal exceed the criteria, or if, based on the criteria the sensor indicates failure of the seal system, the barrier fluid system, or both, a leak is detected and shall be repaired pursuant to § 63.1024, as applicable.
  - (B) The owner or operator shall keep records of the design criteria and an explanation of the design criteria; and any changes to these criteria and the reasons for the changes.
- (2) **No external shaft.** Any agitator that is designed with no externally actuated shaft penetrating the agitator housing is exempt from paragraph (c) of this section.
- (3) **Routed to a process or fuel gas system or equipped with a closed vent system.** Any agitator that is routed to a process or fuel gas system that captures and transports leakage from the agitator to a control device meeting the requirements of either § 63.1034 or § 63.1021(b) is exempt from the requirements of paragraph (c) of this section.
- (4) **Unmanned plant site.** Any agitator that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement of paragraphs (c)(3) and (e)(1)(iv) of this section, and the daily requirements of paragraph (e)(1)(v) of this section, provided that each agitator is visually inspected as often as practical and at least monthly.
- (5) **Difficult-to-monitor agitator seals.** Any agitator seal that is designated, as described in § 63.1022(c)(2), as a difficult-to-monitor agitator seal is exempt from the requirements of paragraph (c) of this section and the owner or operator shall monitor the agitator seal according to the written plan specified in § 63.1022(c)(4).

- (6) **Equipment obstructions.** Any agitator seal that is obstructed by equipment or piping that prevents access to the agitator by a monitor probe is exempt from the monitoring requirements of paragraph (c) of this section.
- (7) **Unsafe-to-monitor agitator seals.** Any agitator seal that is designated, as described in § 63.1022(c)(1), as an unsafe-to-monitor agitator seal is exempt from the requirements of paragraph (c) of this section and the owner or operator of the agitator seal monitors the agitator seal according to the written plan specified in § 63.1022(c)(4).

### **§ 63.1029 Pumps, valves, connectors, and agitators in heavy liquid service; pressure relief devices in liquid service; and instrumentation systems standards.**

- (a) **Compliance schedule.** The owner or operator shall comply with this section no later than the compliance dates specified in the referencing subpart.
- (b) **Leak detection —**
  - (1) **Monitoring method.** Unless otherwise specified in § 63.1021(b), § 63.1036, or § 63.1037, the owner or operator shall comply with paragraphs (b)(1) and (b)(2) of this section. 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 § 63.1023(b) and, as applicable, § 63.1023(c), if evidence of a potential leak to the atmosphere is found by visual, audible, olfactory, or any other detection method, unless the potential leak is repaired as required in paragraph (c) of this section.
  - (2) **Instrument reading that defines a leak.** 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 pumps in food and medical service, or 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 pursuant to paragraph (b)(1) of this section, a leak is detected and shall be repaired pursuant to § 63.1024, as applicable.
- (c) **Leak repair.** For equipment identified in paragraph (b) of this section that is not monitored by the method specified in § 63.1023(b) and, as applicable, § 63.1023(c), 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.

[64 FR 34899, June 29, 1999, as amended at 64 FR 63706, Nov. 22, 1999]

### **§ 63.1030 Pressure relief devices in gas and vapor service standards.**

- (a) **Compliance schedule.** The owner or operator shall comply with this section no later than the compliance dates specified in the referencing subpart.
- (b) **Compliance standard.** Except during pressure releases as provided for in paragraph (c) of this section, or as otherwise specified in §§ 63.1036, 63.1037, or paragraphs (d) and (e) of this section, each pressure relief device in gas and vapor service shall be operated with an instrument reading of less than 500 parts per million as measured by the method specified in § 63.1023(b) and, as applicable, § 63.1023(c).
- (c) **Pressure relief requirements.**

- (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, as soon as practical, but no later than 5 calendar days after each pressure release, except as provided in § 63.1024(d).
  - (2) The pressure relief device shall be monitored no later than five calendar days after the pressure 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 § 63.1023(b) and, as applicable, § 63.1023(c).
  - (3) The owner or operator shall record the dates and results of the monitoring required by paragraph (c)(2) of this section following a pressure release including the background level measured and the maximum instrument reading measured during the monitoring.
- (d) **Pressure relief devices routed to a process or fuel gas system or equipped with a closed vent system and control device.** 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 meeting the requirements of § 63.1034 is exempt from the requirements of paragraphs (b) and (c) of this section.
- (e) **Rupture disk exemption.** Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the requirements of paragraphs (b) and (c) of this section provided the owner or operator installs a replacement rupture disk upstream of the pressure relief device as soon as practical after each pressure release but no later than 5 calendar days after each pressure release, except as provided in § 63.1024(d).

### § 63.1031 Compressors standards.

- (a) **Compliance schedule.** The owner or operator shall comply with this section no later than the compliance dates specified in the referencing subpart.
- (b) **Seal system standard.** 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 §§ 63.1021(b), 63.1036, 63.1037, and paragraphs (e) and (f) of this section. Each compressor seal system shall meet the applicable requirements specified in paragraph (b)(1), (b)(2), or (b)(3) of this section.
- (1) Operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure at all times (except during periods of startup, shutdown, or malfunction); 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 meets the requirements of either § 63.1034 or § 63.1021(b); or
  - (3) Equipped with a closed-loop system that purges the barrier fluid directly into a process stream.
- (c) **Barrier fluid system.** The barrier fluid shall not be in light liquid service. Each barrier fluid system shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both. Each sensor shall be observed daily or shall be equipped with an alarm unless the compressor is located within the boundary of an unmanned plant site.
- (d) **Failure criterion and leak detection.**
- (1) 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. If the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion, a leak is detected and shall be repaired pursuant to § 63.1024, as applicable.

- (2) The owner or operator shall keep records of the design criteria and an explanation of the design criteria; and any changes to these criteria and the reasons for the changes.
- (e) ***Routed to a process or fuel gas system or equipped with a closed vent system.*** A compressor is exempt from the requirements of paragraphs (b) through (d) 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 either § 63.1034 or § 63.1021(b).
- (f) ***Alternative compressor standard.***
  - (1) Any compressor that is designated, as described in § 63.1022(e), as operating with an instrument reading of less than 500 parts per million above background shall operate at all times with an instrument reading of less than 500 parts per million. A compressor so designated is exempt from the requirements of paragraphs (b) through (d) of this section if the compressor is demonstrated, initially upon designation, annually, and at other times requested by the Administrator to be operating with an instrument reading of less than 500 parts per million above background, as measured by the method specified in § 63.1023(b) and, as applicable, § 63.1023(c).
  - (2) The owner or operator shall record the dates and results of each compliance test including the background level measured and the maximum instrument reading measured during each compliance test.

#### § 63.1032 Sampling connection systems standards.

- (a) ***Compliance schedule.*** The owner or operator shall comply with this section no later than the compliance dates specified in the referencing subpart.
- (b) ***Equipment requirement.*** Each sampling connection system shall be equipped with a closed-purge, closed-loop, or closed vent system, except as provided in §§ 63.1021(b), 63.1036, 63.1037, or paragraph (d) of this section. Gases displaced during filling of the sample container are not required to be collected or captured.
- (c) ***Equipment design and operation.*** Each closed-purge, closed-loop, or closed vent system as required in paragraph (b) of this section shall meet the applicable requirements specified in paragraphs (c)(1) through (c)(5) of this section.
  - (1) The system shall return the purged process fluid directly to a process line or to a fuel gas system that meets the requirements of either § 63.1034 or § 63.1021(b); or
  - (2) [Reserved]
  - (3) Be designed and operated to capture and transport all the purged process fluid to a control device that meets the requirements of either § 63.1034 or § 63.1021(b); or
  - (4) Collect, store, and transport the purged process fluid to a system or facility identified in paragraph (c)(4)(i), (c)(4)(ii), or (c)(4)(iii) of this section.
    - (i) A waste management unit as defined in 40 CFR 63.111 or subpart G, if the waste management unit is subject to and operating in compliance with the provisions of 40 CFR part 63, subpart G, applicable to group 1 wastewater streams. If the purged process fluid does not contain any regulated material listed in Table 9 of 40 CFR part 63, subpart G, 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 a National Pollution Discharge Elimination System (NPDES) permit or sends the wastewater to an NPDES-permitted facility.

(ii) A treatment, storage, or disposal facility subject to regulation under 40 CFR parts 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.

(5) Containers that are part of a closed purge system must be covered or closed when not being filled or emptied.

(d) ***In-situ sampling systems.*** In-situ sampling systems and sampling systems without purges are exempt from the requirements of paragraphs (b) and (c) of this section.

### § 63.1033 Open-ended valves or lines standards.

(a) ***Compliance schedule.*** The owner or operator shall comply with this section no later than the compliance date specified in the referencing subpart.

(b) ***Equipment and operational requirements.***

(1) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in §§ 63.1021(b), 63.1036, 63.1037, and paragraphs (c) and (d) of this section. 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. The operational provisions of paragraphs (b)(2) and (b)(3) of this section also apply.

(2) 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.

(3) 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 (b)(1) of this section at all other times.

(c) ***Emergency shutdown exemption.*** Open-ended valves or lines in an emergency shutdown system that are designed to open automatically in the event of a process upset are exempt from the requirements of paragraph (b) of this section.

(d) ***Polymerizing materials exemption.*** Open-ended valves or lines containing materials that 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 paragraph (b) of this section are exempt from the requirements of paragraph (b) of this section.

### § 63.1034 Closed vent systems and control devices; or emissions routed to a fuel gas system or process standards.

(a) ***Compliance schedule.*** The owner or operator shall comply with this section no later than the compliance date specified in the referencing subpart.

(b) ***Compliance standard.***

(1) Owners or operators routing emissions from equipment leaks to a fuel gas system or process shall comply with the provisions of subpart SS of this part, except as provided in § 63.1002(b).

- (2) Owners or operators of closed vent systems and control devices used to comply with the provisions of this subpart shall comply with the provisions of subpart SS of this part and (b)(2)(i) through (b)(2)(iii) of this section, except as provided in § 63.1002(b).
  - (i) Nonflare control devices shall be designed and operated to reduce emissions of regulated material 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 standard is not applicable to the provisions of § 63.1016.
  - (ii) Enclosed combustion devices shall be designed and operated to reduce emissions of regulated material 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 (1400 °F).
  - (iii) Flares used to comply with the provisions of this subpart shall comply with the requirements of subpart SS of this part.

### § 63.1035 Quality improvement program for pumps.

- (a) **Criteria.** If, on a 6-month rolling average, at least the greater of either 10 percent of the pumps in a process unit or affected facility (or plant site) or three pumps in a process unit or affected facility (or plant site) leak, the owner or operator shall comply with the requirements specified in paragraphs (a)(1) and (a)(2) of this section.
  - (1) Pumps that are in food and 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 and medical or polymerizing monomer service shall comply with all of the requirements of this section.
- (b) **Exiting the QIP.** 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 affected facility (or plant site). Once the performance level is achieved, the owner or operator shall comply with the requirements in § 63.1026.
- (c) **Resumption of QIP.** If, in a subsequent monitoring period, the process unit or affected facility (or plant site) has greater than either 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) **QIP requirements.** The quality improvement program shall meet the requirements specified in paragraphs (d)(1) through (d)(8) of this section.
  - (1) The owner or operator shall comply with the requirements in § 63.1026.
  - (2) **Data collection.** The owner or operator shall collect the data specified in paragraphs (d)(2)(i) through (d)(2)(v) of this section and maintain records for each pump in each process unit or affected facility (or plant site) subject to the quality improvement program. The data may be collected and the records may be maintained on a process unit, affected facility, 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 or affected facilities, a description of any maintenance or quality assurance programs used in the process unit or affected facility 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 affected facility (or plant site) remains in the quality improvement program.
- (4) ***Pump or pump seal inspection.*** The owner or operator shall inspect all pumps or pump seals that exhibited frequent seal failures and were removed from the process unit or affected facility 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) ***Data analysis.*** 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, affected facility, 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 affected facility (or plant site).
  - (iii) The analysis shall include consideration of the information specified in paragraphs (d)(5)(iii)(A) through (d)(5)(iii)(C) of this section.
    - (A) The data obtained from the inspections of pumps and pump seals removed from the process unit or affected facility 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 data collected for a minimum of 6 months. An analysis of the data shall be done each year the process unit or affected facility is in the quality improvement program.
- (6) ***Trial evaluation program.*** 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 affected facility (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 evaluation 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 paragraph (e)(3)(ii) of this section.
  - (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 or affected facilities and the lesser of 1 percent or five pumps for programs involving a plant site or groups of process units or affected facilities. 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 the information specified in paragraphs (d)(6)(iii)(A) through (d)(6)(iii)(D) of this section.
    - (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 or affected facility. 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 are 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 or affected facility 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) **Quality assurance program.** 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 or affected facility. 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; and, if applicable, the findings of the trial evaluation required in paragraph (d)(6) of this section; and the operating conditions in the process unit or affected facility. The quality assurance program shall be updated each year as long as the process unit or affected facility has the greater of either 10 percent or more leaking pumps or has three leaking pumps.

- (i) The quality assurance program shall meet the requirements specified in paragraphs (d)(7)(i)(A) through (d)(7)(i)(D) of this section.
  - (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 affected facility, 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 so 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) **Pump or pump seal replacement.** Three years after the start 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 that 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, affected facility, 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 § 63.1026 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 or affected facility 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.
- (e) **QIP recordkeeping.** In addition to the records required by paragraph (d)(2) of this section, the owner or operator shall maintain records for the period of the quality improvement program for the process unit or affected facility as specified in paragraphs (e)(1) through (e)(6) of this section.
  - (1) When using a pump quality improvement program as specified in this section, record the information specified in paragraphs (e)(1)(i) through (e)(1)(iii) of this section.
    - (i) The rolling average percent leaking pumps.
    - (ii) Documentation of all inspections conducted under the requirements of paragraph (d)(4) of this section, and any recommendations for design or specification changes to reduce leak frequency.
    - (iii) The beginning and ending dates while meeting the requirements of paragraph (d) of this section.

- (2) 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.
- (3) Records of all analyses required in paragraph (d) of this section. The records will include the information specified in paragraphs (e)(3)(i) through (e)(3)(iv) of this section.
  - (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 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 paragraph (d)(6)(iii) of this section.
  - (iv) The beginning date and duration of performance trials of each candidate superior emission performing technology.
- (4) All records documenting the quality assurance program for pumps as specified in paragraph (d)(7) of this section, including records indicating that all pumps replaced or modified during the period of the quality improvement program are in compliance with the quality assurance.
- (5) Records documenting compliance with the 20 percent or greater annual replacement rate for pumps as specified in paragraph (d)(8) of this section.
- (6) Information and data to show the corporation has fewer than 100 employees, including employees providing professional and technical contracted services.

### § 63.1036 Alternative means of emission limitation: Batch processes.

- (a) **General requirement.** As an alternative to complying with the requirements of §§ 63.1025 through 63.1033 and § 63.1035, an owner or operator of a batch process that operates in regulated material 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 § 63.1021(b). 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 paragraph (b)(7) of this section.
- (b) **Pressure testing of the batch equipment.** 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.
  - (1) **Reconfiguration.** 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 regulated material is first fed to the equipment and the equipment is placed in regulated material service.
    - (i) When the batch product-process equipment 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 regulated material 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, that are not part of the reconfiguration to produce a different product or intermediate.
- (2) **Testing procedures.** The batch product process equipment shall be tested either using the procedures specified in paragraph (b)(5) of this section for pressure vacuum loss or with a liquid using the procedures specified in paragraph (b)(6) of this section.
- (3) **Leak detection.**
  - (i) For pressure or vacuum tests using a gas, a leak is detected if the rate of change in pressure is greater than 6.9 kilopascals (1 pound per square inch gauge) 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) **Leak repair.**
  - (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 (the second of two consecutive pressure tests), it shall be repaired as soon as practical, but not later than 30 calendar days after the second pressure test except as specified in paragraph (e) of this section.
- (5) **Gas pressure test procedure for pressure or vacuum loss.** The procedures specified in paragraphs (b)(5)(i) through (b)(5)(v) of this section shall be used to pressure test batch product-process equipment for pressure or vacuum loss to demonstrate compliance with the requirements of paragraph (b)(3)(i) of this section.
  - (i) 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.
  - (ii) Once the test pressure is obtained, the gas source or vacuum source shall be shut off.
  - (iii) 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:

$$\Delta(P/t) = (|P_f - P_i|)/(t_f - t_i) \quad [\text{Eq. 5}]$$

Where:

$\Delta(P/t)$  = Change in pressure, pounds per square inch gauge per hour.

$P_f$  = Final pressure, pounds per square inch gauge.

$P_i$  = Initial pressure, pounds per square inch gauge.



$t_f - t_i$  = Elapsed time, hours.

- (iv) The pressure shall be measured using a pressure measurement device (gauge, manometer, or equivalent) that has a precision of  $\pm 2.5$  millimeter mercury (0.10 inch of 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  $\pm 10$  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 1 pound per square inch gauge per hour (7 kilopascals per hour).
- (v) 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.
- (6) **Pressure test procedure using test liquid.** The procedures specified in paragraphs (b)(6)(i) through (b)(6)(iv) of this section shall be used to pressure-test batch product-process equipment using a liquid to demonstrate compliance with the requirements of paragraph (b)(3)(ii) of this section.
  - (i) The batch product-process equipment train, or section of the equipment 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.
  - (ii) 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.
  - (iii) 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.
  - (iv) 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.
- (7) **Pressure testing recordkeeping.** 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 shall maintain records of the information specified in paragraphs (b)(7)(i) through (b)(7)(v) of this section.
  - (i) 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.
  - (ii) Physical tagging of the equipment to identify that it is in regulated material 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.
  - (iii) The dates of each pressure test required in paragraph (b) of this section, the test pressure, and the pressure drop observed during the test.
  - (iv) Records of any visible, audible, or olfactory evidence of fluid loss.
  - (v) When a batch product process equipment train does not pass two consecutive pressure tests, the information specified in paragraphs (b)(7)(v)(A) through (b)(7)(v)(E) of this section shall be recorded in a log and kept for 2 years:

- (A) The date of each pressure test and the date of each leak repair attempt.
  - (B) Repair methods applied in each attempt to repair the leak.
  - (C) The reason for the delay of repair.
  - (D) The expected date for delivery of the replacement equipment and the actual date of delivery of the replacement equipment; and
  - (E) The date of successful repair.
- (c) **Equipment monitoring.** The following requirements shall be met if an owner or operator elects to monitor the equipment in a batch process to detect leaks by the method specified in § 63.1023(b) and, as applicable, § 63.1023(c), to demonstrate compliance with this subpart.
- (1) The owner or operator shall comply with the requirements of §§ 63.1025 through 63.1035 as modified by paragraphs (c)(2) through (c)(4) of this section.
  - (2) The equipment shall be monitored for leaks by the method specified in § 63.1023(b) and, as applicable, § 63.1023(c), when the equipment is in regulated material service or is in use with any other detectable material.
  - (3) The equipment shall be monitored for leaks as specified in paragraphs (c)(3)(i) through (c)(3)(iv) of this section.
    - (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 or affected facility.
    - (ii) Connectors shall be monitored in accordance with the requirements in § 63.1027.
    - (iii) Equipment other than connectors shall be monitored at the frequencies specified in table 1 to 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 paragraph (c)(3)(iii) of this section 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 practical but not later than 15 calendar days after it is detected, except as provided in paragraph (e) of this section.
- (d) **Added equipment recordkeeping.**
- (1) For batch product-process units or affected facilities that the owner or operator elects to monitor as provided under paragraph (c) of this section, the owner or operator shall prepare a list of equipment added to batch product process units or affected facilities since the last monitoring period required in paragraphs (c)(3)(ii) and (c)(3)(iii) of this section.

- (2) Maintain 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 or affected facility. These records are not required if the owner or operator does not adjust monitoring frequency by the time in use, as provided in paragraph (c)(3)(iii) of this section.
  - (3) Record and keep pursuant to the referencing subpart and this subpart, the date and results of the monitoring required in paragraph (c)(3)(i) of this section for equipment added to a batch product-process unit or affected facility since the last monitoring period required in paragraphs (c)(3)(ii) and (c)(3)(iii) of this section. If no leaking equipment is found during this monitoring, the owner or operator shall record that the inspection was performed. Records of the actual monitoring results are not required.
- (e) **Delay of repair.** Delay of repair of equipment for which leaks have been detected is allowed if the replacement equipment is not available providing the conditions specified in paragraphs (e)(1) and (e)(2) of this section 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.
- (f) **Periodic report contents.** For owners or operators electing to meet the requirements of paragraph (b) of this section, the Periodic Report to be filed pursuant to § 63.1039(b) shall include the information listed in paragraphs (f)(1) through (f)(4) of this section for each process unit.
- (1) Batch product process equipment train identification;
  - (2) The number of pressure tests conducted;
  - (3) The number of pressure tests where the equipment train failed the pressure test; and
  - (4) The facts that explain any delay of repairs.

**§ 63.1037 Alternative means of emission limitation: Enclosed-vented process units or affected facilities.**

- (a) **Use of closed vent system and control device.** Process units or affected facilities or portions of process units at affected facilities enclosed in such a manner that all emissions from equipment leaks are vented through a closed vent system to a control device or routed to a fuel gas system or process meeting the requirements of § 63.1034 are exempt from the requirements of §§ 63.1025 through 63.1033 and 63.1035. The enclosure shall be maintained under a negative pressure at all times while the process unit or affected facility is in operation to ensure that all emissions are routed to a control device.
- (b) **Recordkeeping.** Owners and operators choosing to comply with the requirements of this section shall maintain the records specified in paragraphs (b)(1) through (b)(3) of this section.
  - (1) Identification of the process unit(s) or affected facilities and the regulated materials they handle.
  - (2) A schematic of the process unit or affected facility, 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.

## § 63.1038 Recordkeeping requirements.

- (a) **Recordkeeping system.** An owner or operator of more than one regulated source subject to the provisions of this subpart may comply with the recordkeeping requirements for these regulated sources in one recordkeeping system. The recordkeeping system shall identify each record by regulated source and the type of program being implemented (e.g., quarterly monitoring, quality improvement) for each type of equipment. The records required by this subpart are summarized in paragraphs (b) and (c) of this section.
- (b) **General equipment leak records.**
  - (1) As specified in § 63.1022(a) and (b), the owner or operator shall keep general and specific equipment identification if the equipment is not physically tagged and the owner or operator is electing to identify the equipment subject to this subpart through written documentation such as a log or other designation.
  - (2) The owner or operator shall keep a written plan as specified in § 63.1022(c)(4) for any equipment that is designated as unsafe- or difficult-to-monitor.
  - (3) The owner or operator shall maintain a record of the identity and an explanation as specified in § 63.1022(d)(2) for any equipment that is designated as unsafe-to-repair.
  - (4) As specified in § 63.1022(e), the owner or operator shall maintain the identity of compressors operating with an instrument reading of less than 500 parts per million.
  - (5) The owner or operator shall keep records associated with the determination that equipment is in heavy liquid service as specified in § 63.1022(f).
  - (6) The owner or operator shall keep records for leaking equipment as specified in § 63.1023(e)(2).
  - (7) The owner or operator shall keep records for leak repair as specified in § 63.1024(f) and records for delay of repair as specified in § 63.1024(d).
- (c) **Specific equipment leak records.**
  - (1) For valves, the owner or operator shall maintain the records specified in paragraphs (c)(1)(i) and (c)(1)(ii) of this section.
    - (i) The monitoring schedule for each process unit as specified in § 63.1025(b)(3)(vi).
    - (ii) The valve subgrouping records specified in § 63.1025(b)(4)(iv), if applicable.
  - (2) For pumps, the owner or operator shall maintain the records specified in paragraphs (c)(2)(i) through (c)(2)(iii) of this section.
    - (i) Documentation of pump visual inspections as specified in § 63.1026(b)(4).
    - (ii) Documentation of dual mechanical seal pump visual inspections as specified in § 63.1026(e)(1)(v).
    - (iii) For the criteria as to the presence and frequency of drips for dual mechanical seal pumps, records of the design criteria and explanations and any changes and the reason for the changes, as specified in § 63.1026(e)(1)(i).
  - (3) For connectors, the owner or operator shall maintain the monitoring schedule for each process unit as specified in § 63.1027(b)(3)(v).
  - (4) For agitators, the owner or operator shall maintain the following records:

- (i) Documentation of agitator seal visual inspections as specified in § 63.1028; and
  - (ii) For the criteria as to the presence and frequency of drips for agitators, the owner or operator shall keep records of the design criteria and explanations and any changes and the reason for the changes, as specified in § 63.1028(e)(1)(vi).
- (5) For pressure relief devices in gas and vapor or light liquid service, the owner or operator shall keep records of the dates and results of monitoring following a pressure release, as specified in § 63.1030(c)(3).
- (6) For compressors, the owner or operator shall maintain the records specified in paragraphs (c)(6)(i) and (c)(6)(ii) of this section.
  - (i) For criteria as to failure of the seal system and/or the barrier fluid system, record the design criteria and explanations and any changes and the reason for the changes, as specified in § 63.1031(d)(2).
  - (ii) For compressors operating under the alternative compressor standard, record the dates and results of each compliance test as specified in § 63.1031(f)(2).
- (7) For a pump QIP program, the owner or operator shall maintain the records specified in paragraphs (c)(7)(i) through (c)(7)(v) of this section.
  - (i) Individual pump records as specified in § 63.1035(d)(2).
  - (ii) Trial evaluation program documentation as specified in § 63.1035(d)(6)(iii).
  - (iii) Engineering evaluation documenting the basis for judgement that superior emission performance technology is not applicable as specified in § 63.1035(d)(6)(vi).
  - (iv) Quality assurance program documentation as specified in § 63.1035(d)(7).
  - (v) QIP records as specified in § 63.1035(e).
- (8) For process units complying with the batch process unit alternative, the owner or operator shall maintain the records specified in paragraphs (c)(8)(i) and (c)(8)(ii) of this section.
  - (i) Pressure test records as specified in § 63.1036(b)(7).
  - (ii) Records for equipment added to the process unit as specified in § 63.1036(d).
- (9) For process units complying with the enclosed-vented process unit alternative, the owner or operator shall maintain the records for enclosed-vented process units as specified in § 63.1037(b).

### § 63.1039 Reporting requirements.

- (a) **Initial Compliance Status Report.** Each owner or operator shall submit an Initial Compliance Status Report according to the procedures in the referencing subpart. The notification shall include the information listed in paragraphs (a)(1) through (a)(3) of this section, as applicable.
  - (1) The notification shall provide the information listed in paragraphs (a)(1)(i) through (a)(1)(iv) of this section for each process unit or affected facility subject to the requirements of this subpart.
    - (i) Process unit or affected facility identification.
    - (ii) Number of each equipment type (e.g., valves, pumps) excluding equipment in vacuum service.

- (iii) Method of compliance with the standard (e.g., “monthly leak detection and repair” or “equipped with dual mechanical seals”).
  - (iv) Planned schedule for requirements in §§ 63.1025 and 63.1026.
- (2) The notification shall provide the information listed in paragraphs (a)(2)(i) and (a)(2)(ii) of this section for each process unit or affected facility subject to the requirements of § 63.1036(b).
  - (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 (a)(3)(i) and (a)(3)(ii) of this section for each process unit or affected facility subject to the requirements in § 63.1037.
  - (i) Process unit or affected facility 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 § 63.1034 of this part.
- (b) **Periodic Reports.** The owner or operator shall report the information specified in paragraphs (b)(1) through (b)(8) of this section, as applicable, in the Periodic Report specified in the referencing subpart.
  - (1) For the equipment specified in paragraphs (b)(1)(i) through (b)(1)(v) of this section, report in a summary format by equipment type, the number of components for which leaks were detected and for valves, pumps and connectors show the percent leakers, and the total number of components monitored. Also include the number of leaking components that were not repaired as required by § 63.1024, and for valves and connectors, identify the number of components that are determined by § 63.1025(c)(3) to be nonrepairable.
    - (i) Valves in gas and vapor service and in light liquid service pursuant to § 63.1025(b) and (c).
    - (ii) Pumps in light liquid service pursuant to § 63.1026(b) and (c).
    - (iii) Connectors in gas and vapor service and in light liquid service pursuant to § 63.1027(b) and (c).
    - (iv) Agitators in gas and vapor service and in light liquid service pursuant to § 63.1028(c).
    - (v) Compressors pursuant to § 63.1031(d).
  - (2) Where any delay of repair is utilized pursuant to § 63.1024(d), report that delay of repair has occurred and report the number of instances of delay of repair.
  - (3) If applicable, report the valve subgrouping information specified in § 63.1025(b)(4)(iv).
  - (4) For pressure relief devices in gas and vapor service pursuant to § 63.1030(b) and for compressors pursuant to § 63.1031(f) that are to be operated at a leak detection instrument reading of less than 500 parts per million, report the results of all monitoring to show compliance conducted within the semiannual reporting period.
  - (5) Report, if applicable, the initiation of a monthly monitoring program for valves pursuant to § 63.1025(b)(3)(i).
  - (6) Report, if applicable, the initiation of a quality improvement program for pumps pursuant to § 63.1035.

- (7) Where the alternative means of emissions limitation for batch processes is utilized, report the information listed in § 63.1036(f).
- (8) Report the information listed in paragraph (a) of this section for the Initial Compliance Status Report for process units or affected facilities with later compliance dates. Report any revisions to items reported in an earlier Initial Compliance Status Report if the method of compliance has changed since the last report.

**Table 1 to Subpart UU of Part 63—Batch Processes Monitoring Frequency For Equipment Other Than Connectors**

| Operating time<br>(% 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. |

## **Appendix F**

40 C.F.R. § 63 Subpart WW – *National Emission Standards for Storage Vessels (Tanks)- Control Level 2*





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This content is from the eCFR and is authoritative but unofficial.

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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 WW National Emission Standards for Storage Vessels (Tanks)—Control Level 2

- § 63.1060 Applicability.
- § 63.1061 Definitions.
- § 63.1062 Storage vessel control requirements.
- § 63.1063 Floating roof requirements.
- § 63.1064 Alternative means of emission limitation.
- § 63.1065 Recordkeeping requirements.
- § 63.1066 Reporting requirements.
- § 63.1067 Implementation and enforcement.

#### Subpart WW—National Emission Standards for Storage Vessels (Tanks)—Control Level 2

Source: 64 FR 34918, June 29, 1999, unless otherwise noted.

##### § 63.1060 Applicability.

The provisions of this subpart apply to the control of air emissions from storage vessels for which another subpart references the use of this subpart for such air emission control. These air emission standards for storage vessels are placed here for administrative convenience and only apply to those owners and operators of facilities subject to a referencing subpart. The provisions of subpart A (General Provisions) of this part do not apply to this subpart except as noted in the referencing subpart.

##### § 63.1061 Definitions.

All terms used in this subpart shall have the meaning given them in the Act and in this section.

**Capacity** means the volume of liquid that is capable of being stored in a vessel, determined by multiplying the vessel's internal cross-sectional area by the internal height of the shell.

**Deck cover** means a device which covers an opening in a floating roof deck. Some deck covers move horizontally relative to the deck (i.e., a sliding cover).

**Empty or emptying** means the partial or complete removal of stored liquid from a storage vessel. Storage vessels that contain liquid only as wall or bottom clingage, or in pools due to bottom irregularities, are considered completely empty.

**External floating roof or EFR** means a floating roof located in a storage vessel without a fixed roof.

**Fill or filling** means the introduction of liquid into a storage vessel, but not necessarily to capacity.

**Fixed roof** means a roof that is mounted (i.e., permanently affixed) on a storage vessel and that does not move with fluctuations in stored liquid level.

**Flexible fabric sleeve seal** means a seal made of an elastomeric fabric (or other material) which covers an opening in a floating roof deck, and which allows the penetration of a fixed roof support column. The seal is attached to the rim of the deck opening and extends to the outer surface of the column. The seal is draped (but does not contact the stored liquid) to allow the horizontal movement of the deck relative to the column.

**Floating roof** means a roof that floats on the surface of the liquid in a storage vessel. A floating roof substantially covers the stored liquid surface (but is not necessarily in contact with the entire surface), and is comprised of a deck, a rim seal, and miscellaneous deck fittings.

**Initial fill or initial filling means** the first introduction of liquid into a storage vessel that is either newly constructed or has not been in liquid service for a year or longer.

**Internal floating roof or IFR** 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 seal** means a resilient or liquid-filled rim seal designed to contact the stored liquid.

**Mechanical shoe seal or metallic shoe seal** means a rim seal consisting of a band of metal (or other suitable material) as the sliding contact with the wall of the storage vessel, and a fabric seal to close the annular space between the band and the rim of the floating roof deck. The band is typically formed as a series of sheets (shoes) that are overlapped or joined together to form a ring. The lower end of the band extends into the stored liquid.

**Pole float** means a float located inside a guidepole that floats on the surface of the stored liquid. The rim of the float has a wiper or seal that extends to the inner surface of the pole.

**Pole sleeve** means a device which extends from either the cover or the rim of an opening in a floating roof deck to the outer surface of a pole that passes through the opening. The sleeve extends into the stored liquid.

**Pole wiper** means a seal that extends from either the cover or the rim of an opening in a floating roof deck to the outer surface of a pole that passes through the opening.

**Referencing subpart** means the subpart that refers an owner or operator to this subpart.

**Rim seal** means a device attached to the rim of a floating roof deck that spans the annular space between the deck and the wall of the storage vessel. When a floating roof has only one such device, it is a primary seal; when there are two seals (one mounted above the other), the lower seal is the primary seal and the upper seal is the secondary seal.

**Slotted guidepole** means a guidepole or gaugepole that has slots or holes through the wall of the pole. The slots or holes allow the stored liquid to flow into the pole at liquid levels above the lowest operating level.

*Storage vessel or Tank* means a stationary unit that is constructed primarily of nonearthen materials (such as wood, concrete, steel, fiberglass, or plastic) which provide structural support and is designed to hold an accumulation of liquids or other materials.

*Vapor-mounted seal* means a rim seal designed not to be in contact with the stored liquid. Vapor-mounted seals may include, but are not limited to, resilient seals and flexible wiper seals.

### § 63.1062 Storage vessel control requirements.

- (a) For each storage vessel to which this subpart applies, the owner or operator shall comply with one of the requirements listed in paragraphs (a)(1) through (a)(3) of this section.
  - (1) Operate and maintain an IFR.
  - (2) Operate and maintain an EFR.
  - (3) **Equivalent requirements.** Comply with an equivalent to the requirements in paragraph (a)(1) or (a)(2) of this section, as provided in § 63.1064.
- (b) [Reserved]

### § 63.1063 Floating roof requirements.

The owner or operator who elects to use a floating roof to comply with the requirements of § 63.1062 shall comply with the requirements in paragraphs (a) through (e) of this section.

#### (a) **Design requirements —**

##### (1) **Rim seals.**

- (i) **Internal floating roof.** An IFR shall be equipped with one of the seal configurations listed in paragraphs (a)(1)(i)(A) through (a)(1)(i)(C) of this section.
  - (A) A liquid-mounted seal.
  - (B) A mechanical shoe seal.
  - (C) Two seals mounted one above the other. The lower seal may be vapor-mounted.
  - (D) If the IFR is equipped with a vapor-mounted seal as of the proposal date for a referencing subpart, paragraphs (a)(1)(i)(A) through (a)(1)(i)(C) of this section do not apply until the next time the storage vessel is completely emptied and degassed, or 10 years after promulgation of the referencing subpart, whichever occurs first.
- (ii) **External floating roof.** An EFR shall be equipped with one of the seal configurations listed in paragraphs (a)(1)(ii)(A) and (a)(1)(ii)(B) of this section.
  - (A) A liquid-mounted seal and a secondary seal.
  - (B) A mechanical shoe seal and a secondary seal. The upper end of the shoe(s) shall extend a minimum of 61 centimeters (24 inches) above the stored liquid surface.

- (C) If the EFR is equipped with a liquid-mounted seal or mechanical shoe seal, or a vapor-mounted seal and secondary seal, as of the proposal date for a referencing subpart, the seal options specified in paragraphs (a)(1)(ii)(A) and (a)(1)(ii)(B) of this section do not apply until the next time the storage vessel is completely emptied and degassed, or 10 years after the promulgation date of the referencing subpart, whichever occurs first.
- (2) **Deck fittings.** Openings through the deck of the floating roof shall be equipped as described in paragraphs (a)(2)(i) through (a)(2)(viii) of this section.
  - (i) Each opening except those for automatic bleeder vents (vacuum breaker vents) and rim space vents shall have its lower edge below the surface of the stored liquid.
  - (ii) Each opening 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.
  - (iii) Each automatic bleeder vent (vacuum breaker vent) and rim space vent shall be equipped with a gasketed lid, pallet, flapper, or other closure device.
  - (iv) Each opening for a fixed roof support column may be equipped with a flexible fabric sleeve seal instead of a deck cover.
  - (v) Each opening for a sample well or deck drain (that empties into the stored liquid) may be equipped with a slit fabric seal or similar device that covers at least 90 percent of the opening, instead of a deck cover.
  - (vi) Each cover on access hatches and gauge float wells shall be designed to be bolted or fastened when closed.
  - (vii) 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.
  - (viii) Each opening for a slotted guidepole shall be equipped with one of the control device configurations specified in paragraphs (a)(2)(viii)(A) and (a)(2)(viii)(B) of this section.
    - (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.
  - (ix) If the floating roof does not meet the requirements listed in paragraphs (a)(2)(i) through (a)(2)(viii) of this section as of the proposal date of the referencing subpart, these requirements do not apply until the next time the vessel is completely emptied and degassed, or 10 years after the promulgation date of the referencing subpart, whichever occurs first.
- (b) **Operational requirements.**
  - (1) The floating roof shall float on the stored liquid surface at all times, except when the floating roof is supported by its leg supports or other support devices (e.g., hangers from the fixed roof).
  - (2) When the storage vessel is storing liquid, but the liquid depth is insufficient to float the floating roof, the process of filling to the point of refloating the floating roof shall be continuous and shall be performed as soon as practical.

- (3) Each cover over an opening in the floating roof, except for automatic bleeder vents (vacuum breaker vents) and rim space vents, shall be closed at all times, except when the cover must be open for access.
- (4) Each automatic bleeder vent (vacuum breaker vent) and rim space vent shall be closed at all times, except when required to be open to relieve excess pressure or vacuum, in accordance with the manufacturer's design.
- (5) Each unslotted guidepole cap shall be closed at all times except when gauging the liquid level or taking liquid samples.

(c) *Inspection frequency requirements* —

- (1) **Internal floating roofs.** Internal floating roofs shall be inspected as specified in paragraph (d)(1) of this section before the initial filling of the storage vessel. Subsequent inspections shall be performed as specified in paragraph (c)(1)(i) or (c)(1)(ii) of this section.
  - (i) Internal floating roofs shall be inspected as specified in paragraphs (c)(1)(i)(A) and (c)(1)(i)(B) of this section.
    - (A) At least once per year the IFR shall be inspected as specified in paragraph (d)(2) of this section.
    - (B) Each time the storage vessel is completely emptied and degassed, or every 10 years, whichever occurs first, the IFR shall be inspected as specified in paragraph (d)(1) of this section.
  - (ii) Instead of the inspection frequency specified in paragraph (c)(1)(i) of this section, internal floating roofs with two rim seals may be inspected as specified in paragraph (d)(1) of this section each time the storage vessel is completely emptied and degassed, or every 5 years, whichever occurs first.
- (2) **External floating roofs.** External floating roofs shall be inspected as specified in paragraphs (c)(2)(i) through (c)(2)(iv) of this section.
  - (i) Within 90 days after the initial filling of the storage vessel, the primary and secondary rim seals shall be inspected as specified in paragraph (d)(3) of this section.
  - (ii) The secondary seal shall be inspected at least once every year, and the primary seal shall be inspected at least every 5 years, as specified in paragraph (d)(3) of this section.
  - (iii) Each time the storage vessel is completely emptied and degassed, or every 10 years, whichever occurs first, the EFR shall be inspected as specified in paragraph (d)(1) of this section.
  - (iv) If the owner or operator determines that it is unsafe to perform the floating roof inspections specified in paragraphs (c)(2)(i) and (c)(2)(ii) of this section, the owner or operator shall comply with the requirements of paragraph (c)(2)(iv)(A) or (c)(2)(iv)(B) of this section.
    - (A) The inspections shall be performed no later than 30 days after the determination that the floating roof is unsafe.
    - (B) The storage vessel shall be removed from liquid service no later than 45 days after determining the floating roof is unsafe. If the vessel cannot be emptied within 45 days, the owner or operator may utilize up to two extensions of up to 30 additional days each. If the vessel cannot be emptied within 45 days, the owner or operator may utilize up to two

extensions of up to 30 additional days each. Documentation of a decision to use an extension shall include an explanation of why it was unsafe to perform the inspection, documentation that alternative storage capacity is unavailable, and a schedule of actions that will ensure that the vessel will be emptied as soon as practical.

- (d) **Inspection procedure requirements.** Floating roof inspections shall be conducted as specified in paragraphs (d)(1) through (d)(3) of this section, as applicable. If a floating roof fails an inspection, the owner or operator shall comply with the repair requirements of paragraph (e) of this section.
- (1) Floating roof (IFR and EFR) inspections shall be conducted by visually inspecting the floating roof deck, deck fittings, and rim seals from within the storage vessel. The inspection may be performed entirely from the top side of the floating roof, as long as there is visual access to all deck components specified in paragraph (a) of this section. Any of the conditions described in paragraphs (d)(1)(i) through (d)(1)(v) of this section constitutes inspection failure.
    - (i) Stored liquid on the floating roof.
    - (ii) Holes or tears in the primary or secondary seal (if one is present).
    - (iii) Floating roof deck, deck fittings, or rim seals that are not functioning as designed (as specified in paragraph (a) of this section).
    - (iv) Failure to comply with the operational requirements of paragraph (b) of this section.
    - (v) Gaps of more than 0.32 centimeters ( $\frac{1}{8}$  inch) between any deck fitting gasket, seal, or wiper (required by paragraph (a) of this section) and any surface that it is intended to seal.
  - (2) Tank-top inspections of IFR's shall be conducted by visually inspecting the floating roof deck, deck fittings, and rim seal through openings in the fixed roof. Any of the conditions described in paragraphs (d)(1)(i) through (d)(1)(iv) 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.
  - (3) Seal gap inspections for EFR's shall determine the presence and size of gaps between the rim seals and the wall of the storage vessel by the procedures specified in paragraph (d)(3)(i) of this section. Any exceedance of the gap requirements specified in paragraphs (d)(3)(ii) and (d)(3)(iii) of this section constitutes inspection failure.
    - (i) Rim seals shall be measured for gaps at one or more levels while the EFR is floating, as specified in paragraphs (d)(3)(i)(A) through (d)(3)(i)(F) of this section.
      - (A) The inspector shall hold a 0.32 centimeter ( $\frac{1}{8}$  inch) diameter probe vertically against the inside of the storage vessel wall, just above the rim seal, and attempt to slide the probe down between the seal and the vessel wall. Each location where the probe passes freely (without forcing or binding against the seal) between the seal and the vessel wall constitutes a gap.
      - (B) The length of each gap shall be determined by inserting the probe into the gap (vertically) and sliding the probe along the vessel wall in each direction as far as it will travel freely without binding between the seal and the vessel wall. The circumferential length along which the probe can move freely is the gap length.

- (C) The maximum width of each gap shall be determined by inserting probes of various diameters between the seal and the vessel wall. The smallest probe diameter should be 0.32 centimeter, and larger probes should have diameters in increments of 0.32 centimeter. The diameter of the largest probe that can be inserted freely anywhere along the length of the gap is the maximum gap width.
  - (D) The average width of each gap shall be determined by averaging the minimum gap width (0.32 centimeter) and the maximum gap width.
  - (E) The area of a gap is the product of the gap length and average gap width.
  - (F) The ratio of accumulated area of rim seal gaps to storage vessel diameter shall be determined by adding the area of each gap, and dividing the sum by the nominal diameter of the storage vessel. This ratio shall be determined separately for primary and secondary rim seals.
- (ii) The ratio of seal gap area to vessel diameter for the primary seal shall not exceed 212 square centimeters per meter of vessel diameter (10 square inches per foot of vessel diameter), and the maximum gap width shall not exceed 3.81 centimeters (1.5 inches).
  - (iii) The ratio of seal gap area to vessel diameter for the secondary seal shall not exceed 21.2 square centimeters per meter (1 square inch per foot), and the maximum gap width shall not exceed 1.27 centimeters (0.5 inches), except when the secondary seal must be pulled back or removed to inspect the primary seal.
- (e) **Repair requirements.** Conditions causing inspection failures under paragraph (d) of this section shall be repaired as specified in paragraph (e)(1) or (e)(2) of this section.
- (1) If the inspection is performed while the storage vessel is not storing liquid, repairs shall be completed before the refilling of the storage vessel with liquid.
  - (2) If the inspection is performed while the storage vessel is storing liquid, repairs shall be completed or the vessel removed from service within 45 days. If a repair cannot be completed and the vessel cannot be emptied within 45 days, the owner or operator may use up to 2 extensions of up to 30 additional days each. Documentation of a decision to use 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 completely emptied as soon as practical.

#### § 63.1064 Alternative means of emission limitation.

- (a) An alternate control device may be substituted for a control device specified in § 63.1063 if the alternate device has an emission factor less than or equal to the emission factor for the device specified in § 63.1063. Requests for the use of alternate devices shall be made as specified in § 63.1066(b)(3). Emission factors for the devices specified in § 63.1063 are published in EPA Report No. AP-42, Compilation of Air Pollutant Emission Factors.
- (b) Tests to determine emission factors for an alternate device shall accurately simulate conditions under which the device will operate, such as wind, temperature, and barometric pressure. Test methods that can be used to perform the testing required in this paragraph include, but are not limited to, the methods listed in paragraphs (b)(1) through (b)(3) of this section.



- (1) American Petroleum Institute (API) Manual of Petroleum Measurement Standards, Chapter 19, Section 3, Part A, Wind Tunnel Test Method for the Measurement of Deck-Fitting Loss Factors for External Floating-Roof Tanks.
  - (2) API Manual of Petroleum Measurement Standards, Chapter 19, Section 3, Part B, Air Concentration Test Method for the Measurement of Rim Seal Loss Factors for Floating-Roof Tanks.
  - (3) API Manual of Petroleum Measurement Standards, Chapter 19, Section 3, Part E, Weight Loss Test Method for the Measurement of Deck-Fitting Loss Factors for Internal Floating-Roof Tanks.
- (c) An alternate combination of control devices may be substituted for any combination of rim seal and deck fitting control devices specified in § 63.1063 if the alternate combination emits no more than the combination specified in § 63.1063. The emissions from an alternate combination of control devices shall be determined using AP-42 or as specified in paragraph (b) of this section. The emissions from a combination of control devices specified in § 63.1063 shall be determined using AP-42. Requests for the use of alternate devices shall be made as specified in § 63.1066(b)(3).

### § 63.1065 Recordkeeping requirements.

The owner or operator shall keep the records required in paragraph (a) of this section for as long as liquid is stored. Records required in paragraphs (b), (c) and (d) of this section shall be kept for at least 5 years. Records shall be kept in such a manner that they can be readily accessed within 24 hours. Records may be kept in hard copy or computer-readable form including, but not limited to, on paper, microfilm, computer, floppy disk, magnetic tape, or microfiche.

- (a) **Vessel dimensions and capacity.** A record shall be kept of the dimensions of the storage vessel, an analysis of the capacity of the storage vessel, and an identification of the liquid stored.
- (b) **Inspection results.** Records of floating roof inspection results shall be kept as specified in paragraphs (b)(1) and (b)(2) of this section.
- (1) If the floating roof passes inspection, a record shall be kept that includes the information specified in paragraphs (b)(1)(i) and (b)(1)(ii) of this section. If the floating roof fails inspection, a record shall be kept that includes the information specified in paragraphs (b)(1)(i) through (b)(1)(v) of this section.
    - (i) Identification of the storage vessel that was inspected.
    - (ii) The date of the inspection.
    - (iii) A description of all inspection failures.
    - (iv) A description of all repairs and the dates they were made.
    - (v) The date the storage vessel was removed from service, if applicable.
  - (2) A record shall be kept of EFR seal gap measurements, including the raw data obtained and any calculations performed.
- (c) **Floating roof landings.** The owner or operator shall keep a record of the date when a floating roof is set on its legs or other support devices. The owner or operator shall also keep a record of the date when the roof was refloated, and the record shall indicate whether the process of refloating was continuous.
- (d) An owner or operator who elects to use an extension in accordance with § 63.1063(e)(2) or § 63.1063(c)(2)(iv)(B) shall keep the documentation required by those paragraphs.

## § 63.1066 Reporting requirements.

- (a) **Notification of initial startup.** If the referencing subpart requires that a notification of initial startup be filed, then the content of the notification of initial startup shall include (at a minimum) the information specified in the referencing subpart and the information specified in paragraphs (a)(1) and (a)(2) of this section.
  - (1) The identification of each storage vessel, its capacity and the liquid stored in the storage vessel.
  - (2) A statement of whether the owner or operator of the source can achieve compliance by the compliance date specified in referencing subpart.
- (b) **Periodic reports.** Report the information specified in paragraphs (b)(1) through (b)(4) of this section, as applicable, in the periodic report specified in the referencing subpart.
  - (1) **Notification of inspection.** To provide the Administrator the opportunity to have an observer present, the owner or operator shall notify the Administrator at least 30 days before an inspection required by §§ 63.1063(d)(1) or (d)(3). If an inspection is unplanned and the owner or operator could not have known about the inspection 30 days in advance, then the owner or operator shall notify the Administrator at least 7 days before the inspection. Notification shall be made by telephone 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 days before the inspection. If a delegated State or local agency is notified, the owner or operator is not required to notify the Administrator. A delegated State or local agency may waive the requirement for notification of inspections.
  - (2) **Inspection results.** The owner or operator shall submit a copy of the inspection record (required in § 63.1065) when inspection failures occur.
  - (3) **Requests for alternate devices.** The owner or operator requesting the use of an alternate control device shall submit a written application including emissions test results and an analysis demonstrating that the alternate device has an emission factor that is less than or equal to the device specified in § 63.1063.
  - (4) **Requests for extensions.** An owner or operator who elects to use an extension in accordance with § 63.1063(e)(2) or § 63.1063(c)(2)(iv)(B) shall submit the documentation required by those paragraphs.

## § 63.1067 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 §§ 63.1062 and 63.1063(a) and (b) for alternative means of emission limitation, under § 63.6(g).
  - (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 46279, July 12, 2002]

## **Appendix G**

40 C.F.R. § 63 Subpart OOO – *National Emission Standards for Hazardous Air Pollutants for  
Amino/Phenolic Resins Production*



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This content is from the eCFR and is authoritative but unofficial.

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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 000** National Emission Standards for Hazardous Air Pollutant Emissions: Manufacture of Amino/Phenolic Resins

§ 63.1400 Applicability and designation of affected sources.

§ 63.1401 Compliance schedule.

§ 63.1402 Definitions.

§ 63.1403 Emission standards.

§ 63.1404 Storage vessel provisions.

§ 63.1405 Continuous process vent provisions.

§ 63.1406 Reactor batch process vent provisions.

§ 63.1407 Non-reactor batch process vent provisions.

§ 63.1408 Aggregate batch vent stream provisions.

§ 63.1409 Heat exchange system provisions.

§ 63.1410 Equipment leak provisions.

§ 63.1411 Requirements for pressure relief devices.

§ 63.1412 Continuous process vent applicability assessment procedures and methods.

§ 63.1413 Compliance demonstration procedures.

§ 63.1414 Test methods and emission estimation equations.

§ 63.1415 Monitoring requirements.

§ 63.1416 Recordkeeping requirements.

§ 63.1417 Reporting requirements.

§ 63.1418 *[Reserved]*

§ 63.1419 Implementation and enforcement.

#### **Table 1 to Subpart 000 of Part 63**

Applicability of General Provisions to Subpart 000 Affected  
Sources

#### **Table 2 to Subpart 000 of Part 63**

Known Organic Hazardous Air Pollutants (HAP) From the  
Manufacture of Amino/Phenolic Resins

#### **Table 3 to Subpart 000 of Part 63**

Batch Process Vent Monitoring Requirements

**Table 4 to Subpart 000 of Part 63**

Operating Parameter Levels

**Table 5 to Subpart 000 of Part 63**

Reports Required by This Subpart

**Table 6 to Subpart 000 of Part 63**

Coefficients for Total Resource Effectiveness <sup>a</sup>

**Subpart 000—National Emission Standards for Hazardous Air Pollutant Emissions:  
Manufacture of Amino/Phenolic Resins**

**Source:** 65 FR 3290, Jan. 20, 2000, unless otherwise noted.

**§ 63.1400 Applicability and designation of affected sources.**

- (a) **Applicability.** The provisions of this subpart apply to the owner or operator of processes that produce amino/phenolic resins and that are located at a plant site that is a major source as defined in § 63.2.
- (b) **Affected source.** The affected source is:
  - (1) The total of all amino/phenolic resin process units (APPU);
  - (2) The associated heat exchange systems;
  - (3) Equipment required by, or utilized as a method of compliance with, this subpart which may include control devices and recovery devices;
  - (4) Equipment that does not contain organic hazardous air pollutants (HAP) and is located within an APPU that is part of an affected source;
  - (5) Vessels and equipment storing and/or handling material that contain no organic HAP and/or organic HAP as impurities only;
  - (6) Equipment that is intended to operate in organic HAP service for less than 300 hours during the calendar year;
  - (7) Each waste management unit; and
  - (8) Maintenance wastewater.
- (c) **Existing affected source.** The affected source to which the existing source provisions of this subpart apply is defined in paragraph (b) of this section.
- (d) **New affected source.** The affected source to which the new source provisions of this subpart apply is:
  - (1) Each affected source defined in paragraph (b) of this section that commences construction or reconstruction after December 14, 1998;

- (2) Each additional group of one or more APPU and associated heat exchange systems that has the potential to emit 10 tons per year or more of any organic HAP or 25 tons per year or more of any combination of organic HAP that commences construction after December 14, 1998; or
  - (3) Each group of one or more process units and associated heat exchange systems that are converted to APPUs after December 14, 1998, that has the potential to emit 10 tons per year or more of any organic HAP or 25 tons per year or more of any combination of organic HAP.
- (e) **APPUs without organic HAP.** An APPU that is part of an affected source, as defined in paragraph (c) or (d) of this section, but that does not use or manufacture any organic HAP, is not subject to any other provisions of this subpart and is not required to comply with the provisions of subpart A of this part. When requested by the Administrator, the owner or operator shall demonstrate that the APPU does not use or manufacture any organic HAP. Types of information that could document this determination include, but are not limited to, records of chemicals purchased for the process, analyses of process stream composition, engineering calculations, or process knowledge.
- (f) **Exemption from equipment leak provisions.** Affected sources with actual annual production of amino/phenolic resin equal to or less than 800 megagrams per year (Mg/yr) for the 12-month period preceding December 14, 1998 are exempt from the equipment leak provisions specified in § 63.1410. The owner or operator utilizing this exemption shall recheck the actual annual production of amino/phenolic resins for each 12-month period following December 14, 1998. The beginning of each 12-month period shall be the anniversary of December 14, 1998. If the actual annual production of amino/phenolic resins is greater than 800 Mg/yr for any 12-month period, the owner or operator shall comply with § 63.1410 for the life of the affected source or until the affected source is no longer subject to the provisions of this subpart.
- (g) **Primary product determination and applicability.** For purposes of this paragraph, amino resins and phenolic resins shall be considered to be the same product and production time or production mass of amino and phenolic resins shall be combined for purposes of determining the primary product under this paragraph (g). If the owner or operator determines that a process unit is not an APPU under paragraphs (g)(1) through (4) of this section, the owner or operator shall, when requested by the Administrator, demonstrate that the process unit is not an APPU.
- (1) **Applicability determinations for process units producing multiple products.** A process unit that produces more than one intended product at the same time is an APPU if amino/phenolic resin production accounts for the greatest percent of the annual design capacity on a mass basis. If a process unit has the same annual design capacity on a mass basis for two or more products, the process unit shall be an APPU if amino/phenolic resins are one of those products.
  - (2) **Flexible operations process unit determination based on operating time.** A flexible operations process unit is an APPU if amino/phenolic resins will be produced for the greatest operating time over the 5 years following December 14, 1998 at existing process units, or for the first year after the process unit begins production of any product for new process units.
  - (3) **Flexible operations process unit determination based on mass production basis.** A flexible operations process unit that will manufacture multiple products equally based on operating time is an APPU if amino/phenolic resins account for the greatest percentage of the expected production on a mass basis over the 5 years following December 14, 1998 at existing process units, or for the first year after the process unit begins production of any product for new process units.
  - (4) **Flexible operations process unit default determination.** If the owner or operator cannot determine whether or not amino/phenolic resins are the primary product of a flexible operations process unit in accordance with paragraphs (g)(2) and (3) of this section, the flexible operations process unit shall



be designated as an APPU if amino/phenolic resins were produced for 5 percent or greater of the total operating time since December 14, 1998 for existing process units. The flexible operations process unit shall be designated as an APPU if the owner or operator anticipates that amino/phenolic resins will be manufactured in the flexible operations process unit at any time in the first year after the date the unit begins production of any product for new process units.

- (5) **Annual applicability determination for non-APPUs that have produced amino/phenolic resins.** Once per year beginning December 14, 2003, the owner or operator of each flexible operations process unit that is not designated as an APPU, but that has produced amino/phenolic resins at any time in the preceding 5-year period or since the date that the unit began production of any product, whichever is shorter, shall perform an evaluation to determine whether the process unit has become an APPU. A flexible operations process unit has become an APPU if amino/phenolic resins were produced for the greatest operating time over the preceding 5-year period or since the date that the process unit began production of any product, whichever is shorter.
- (6) **Applicability determination for non-APPUs that have not produced amino/phenolic resins.** The owner or operator that anticipates the production of amino/phenolic resins in a process unit that is not designated as an APPU, and in which no amino/phenolic resins have been produced in the previous 5-year period or since the date that the process unit began production of any product, whichever is shorter, shall determine if the process unit will become an APPU. The owner or operator shall use the procedures in paragraphs (g)(1) through (4) of this section to determine if the process unit is designated as an APPU, with the following exception: for existing process units, production shall be projected for the 5 years following the date that the owner or operator anticipates initiating the production of amino/phenolic resins, instead of the 5 years following December 14, 1998.
- (7) **Redetermination of applicability to APPU that are flexible operations process units.** Whenever changes in production occur that could reasonably be expected to cause a flexible operations process unit to no longer be an APPU (i.e., amino/phenolic resins will no longer be the primary product according to the determination procedures in paragraphs (g)(2) through (4) of this section), the owner or operator shall reevaluate the status of the process unit as an APPU. A flexible operations process unit has ceased to be an APPU subject to this subpart if the following criteria are met:
  - (i) If amino/phenolic resins were not produced for the greatest operating time over the preceding 5-year period or since the date that the process unit began production of any product, whichever is shorter;
  - (ii) If the new primary product, which is not amino/phenolic resins, is subject to another subpart of this part; and
  - (iii) If the owner or operator has notified the Administrator of the pending change in status for the flexible operations process unit, as specified in § 63.1417(h)(4).
- (8) **APPU terminating production of all amino/phenolic resins.** If an APPU terminates the production of all amino/phenolic resins and does not anticipate the production of any amino/phenolic resins in the future, the process unit is no longer an APPU and is not subject to this subpart after notification is made to the Administrator, as specified in § 63.1417(h)(4).
- (h) **Storage vessel applicability determination.** The owner or operator of a storage vessel at a new affected source shall determine assignment to a process unit as follows:
  - (1) If a storage vessel is already subject to another subpart of part 63 on January 20, 2000, said storage vessel shall continue to be assigned to the process unit subject to the other subpart.

- (2) If a storage vessel is dedicated to a single process unit, the storage vessel shall be assigned to that process unit.
- (3) If a storage vessel is shared among process units, then the storage vessel shall be assigned to that process unit located on the same plant site as the storage vessel that has the greatest input into or output from the storage vessel (i.e., said process unit has the predominant use of the storage vessel).
- (4) If predominant use cannot be determined for a storage vessel that is shared among process units, and if one or more of those process units is an APPU subject to this subpart, the storage vessel shall be assigned to any of the APPUs.
- (5) [Reserved]
- (6) If the predominant use of a storage vessel varies from year to year, then predominant use shall be determined based on the use as follows:
  - (i) For existing affected sources, use shall be determined based on the following:
    - (A) The year preceding January 20, 2000; or
    - (B) The expected use for the 5 years following January 20, 2000.
  - (ii) For new affected sources, use shall be determined based on the first 5 years after initial start-up.
- (7) Where the storage vessel is located in a tank farm (including a marine tank farm), the assignment of the storage vessel shall be determined according to paragraphs (h)(7)(i) and (ii) of this section. Only those storage vessels where a portion or all of the input into or output from the storage vessel is hardpiped directly to one or more process units are covered by this paragraph.
  - (i) The storage vessel is assigned to a process unit if the product or raw material entering or leaving the process unit flows directly into (or from) the storage vessel in the tank farm without passing through any intervening storage vessel. An intervening storage vessel means a storage vessel connected by hardpiping both to the process unit and to the storage vessel in the tank farm.
  - (ii) If there are two or more process units that meet the criteria of paragraph (h)(7)(i) of this section with respect to a storage vessel, the storage vessel shall be assigned to one of those process units according to the provisions of paragraphs (h)(3) through (6) of this section.
- (8) If the storage vessel begins receiving material from (or sending material to) a process unit that was not included in the initial determination, or ceases to receive material from (or send material to) a process unit, the owner or operator shall reevaluate the applicability of this subpart to the storage vessel according to the procedures in paragraphs (h)(3) through (7) of this section.
- (i) **Applicability of other subparts to this subpart.** Paragraphs (i)(1) through (5) describe the applicability of other subparts to this subpart.
  - (1) After the compliance dates specified in this section, a storage vessel that is assigned to an affected source subject to this subpart that is also subject to and complying with the provisions of 40 CFR part 60, subpart Kb, shall continue to comply with 40 CFR part 60, subpart Kb. After the compliance dates specified in this section, a storage vessel that is assigned to an affected source subject to this subpart that is also subject to the provisions of 40 CFR part 60, subpart Kb, but the owner or

operator has not been required to apply controls as part of complying with 40 CFR part 60, subpart Kb, is required to comply only with the provisions of this subpart. After the compliance dates specified in this section, said storage vessel shall no longer be subject to 40 CFR part 60, subpart Kb.

- (2) Affected sources subject to this subpart that are also subject to the provisions of subpart Q of this part shall comply with both subparts.
- (3) After the compliance dates specified in this section, an affected source subject to this subpart that is also subject to the provisions of 40 CFR part 60, subpart VV, or the provisions of subpart H of this part, is required to comply only with the provisions of this subpart. After the compliance dates specified in this section, said source shall no longer be subject to 40 CFR part 60, subpart VV, or subpart H of this part, as appropriate.
- (4) After the applicable compliance date specified in this subpart, if a heat exchange system subject to this subpart is also subject to a standard identified in paragraph (i)(4)(i) or (ii) of this section, compliance with the applicable provisions of the standard identified in paragraph (i)(4)(i) or (ii) of this section shall constitute compliance with the applicable provisions of this subpart with respect to that heat exchange system.
  - (i) Subpart F of this part.
  - (ii) A subpart of this part that requires compliance with § 63.104 (e.g., subpart U of this part).
- (5) After the compliance dates specified in this subpart, if any combustion device, recovery device or recapture device subject to this subpart is also subject to monitoring, recordkeeping, and reporting requirements in 40 CFR part 264, subparts AA, BB, or CC, or is subject to monitoring and recordkeeping requirements in 40 CFR part 265, subparts AA, BB, or CC, and the owner or operator complies with the periodic reporting requirements under 40 CFR part 264, subparts AA, BB, 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 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. If the owner or operator elects to comply with the monitoring, recordkeeping, and reporting requirements in 40 CFR parts 264 and/or 265, the owner or operator shall report all information required by § 63.1417(f), Periodic Reports, as part of complying with the requirements of 40 CFR parts 264 and/or 265.
- (j) **Applicability of general provisions.** Table 1 of this subpart specifies the provisions of subpart A of this part that apply and do not apply to owners and operators of affected sources subject to this subpart.
- (k) **Applicability of this subpart.**
  - (1) The emission limitations set forth in this subpart and the emission limitations referred to in this subpart shall apply at all times except during periods of non-operation of the affected source (or specific portion thereof) resulting in cessation of the emissions to which this subpart applies.
  - (2) The emission limitations set forth in 40 CFR part 63, subpart UU, as referred to in § 63.1410, shall apply at all times except during periods of non-operation of the affected source (or specific portion thereof) in which the lines are drained and depressurized resulting in cessation of the emissions to which § 63.1410 applies.

- (3) The owner or operator shall not shut down items of equipment that are required or utilized for compliance with this subpart during times when emissions are being routed to such items of equipment if the shutdown would contravene requirements of this subpart applicable to such items of equipment.
- (4) **General duty.** At all times, 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. The general duty to minimize emissions does not 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 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.

[65 FR 3290, Jan. 20, 2000, as amended at 71 FR 20460, Apr. 20, 2006; 79 FR 60929, Oct. 8, 2014; 83 FR 51852, Oct. 15, 2018]

### § 63.1401 Compliance schedule.

- (a) New affected sources that commence construction or reconstruction after December 14, 1998, shall be in compliance with this subpart (except § 63.1411(c)) upon initial start-up or January 20, 2000, whichever is later. New affected sources that commenced construction or reconstruction after December 14, 1998, but on or before January 9, 2014, shall be in compliance with the pressure relief device monitoring requirements of § 63.1411(c) by October 9, 2017. New affected sources that commence construction or reconstruction after January 9, 2014, shall be in compliance with the pressure relief device monitoring requirements of § 63.1411(c) upon initial startup or by October 8, 2014.
- (b) Existing affected sources shall be in compliance with this subpart (except §§ 63.1404, 63.1405, and 63.1411(c)) no later than 3 years after January 20, 2000. Existing affected sources shall be in compliance with the storage vessel requirements of § 63.1404 and the pressure relief device monitoring requirements of § 63.1411(c) by October 9, 2017. Existing affected sources shall be in compliance with the continuous process vent requirements of § 63.1405(b) by October 15, 2019.
- (c) If an affected source using the exemption provided in § 63.1400(f) has an actual annual production of amino/phenolic resins exceeding 800 Mg/yr for any 12-month period, the owner or operator shall comply with the provisions of § 63.1410 for the affected source within 3 years. The starting point for the 3-year compliance time period shall be the end of the 12-month period in which actual annual production for amino/phenolic resins exceeds 800 Mg/yr.
- (d) Pursuant to section 112(i)(3)(B) of the Clean Air Act, an owner or operator may request an extension allowing the existing affected source up to 1 additional year to comply with section 112(d) standards. 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 to the Administrator as a separate submittal or as part of the Precompliance Report.
  - (1) Requests for extensions shall be submitted no later than 120 days prior to the compliance dates specified in paragraphs (a) and (b) of this section and shall include the data described in § 63.6(i)(6)(i)(A), (B), and (D). The dates specified in § 63.6(i) for submittal of requests for extensions shall not apply to this subpart.

- (2) An owner or operator may submit a compliance extension request less than 120 days prior to the compliance dates specified in paragraphs (a) and (b) of this section provided that the need for the compliance extension arose after that 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 specified in § 63.6(i)(6)(i)(A), (B), and (D), a statement of the reasons additional time is needed and the date when the owner or operator first learned of the circumstances necessitating a request for compliance extension.
- (e) All terms in this subpart that define a period of time for completion of required tasks (e.g., weekly, monthly, quarterly, annual), unless specified otherwise, refer to the standard calendar periods.
  - (1) Notwithstanding time periods specified in this subpart 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.
  - (2) 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 paragraph (e)(2)(i) or (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.
  - (3) 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 the specified period, provided that the task is conducted at a reasonable interval after completion of the task during the previous period.

[65 FR 3290, Jan. 20, 2000, as amended at 79 FR 60929, Oct. 8, 2014; 83 FR 51852, Oct. 15, 2018]

## § 63.1402 Definitions.

- (a) The following terms used in this subpart shall have the meaning given them in §§ 63.2, 63.101, 63.111, and 63.161 as specified after each term:

Act (§ 63.2)

Administrator (§ 63.2)

Annual average concentration (§ 63.111)

Annual average flow rate (§ 63.111)

Automated monitoring and recording system (§ 63.111)

Boiler (§ 63.111)

Bottoms receiver (§ 63.161)

By compound (§ 63.111)

By-product (§ 63.101)

Car-seal (§ 63.111)

Closed-vent system (§ 63.111)

Combustion device (§ 63.111)

Commenced (§ 63.2)

Compliance date (§ 63.2)

Connector (§ 63.161)

Construction (§ 63.2)

Continuous monitoring system (§ 63.2)

Distillation unit (§ 63.111)

Duct work (§ 63.161)

Emission standard (§ 63.2)

EPA (§ 63.2)

External floating roof (§ 63.111)

First attempt at repair (§ 63.111)

Flame zone (§ 63.111)

Floating roof (§ 63.111)

Flow indicator (§ 63.111)

Fuel gas (§ 63.101)

Fuel gas system (§ 63.101)

Hard-piping (§ 63.111)

Hazardous air pollutant (§ 63.2)

Impurity (§ 63.101)

In organic hazardous air pollutant service (§ 63.161)

Incinerator (§ 63.111)

Instrumentation system (§ 63.161)

Internal floating roof (§ 63.111)

Lesser quantity (§ 63.2)

Major source (§ 63.2)

Open-ended valve or line (§ 63.161)

Operating permit (§ 63.101)

Organic monitoring device (§ 63.111)

Owner or operator (§ 63.2)

Performance evaluation (§ 63.2)

Performance test (§ 63.2)

Permitting authority (§ 63.2)

Plant site (§ 63.101)

Potential to emit (§ 63.2)

Pressure relief device or valve (§ 63.161)

Primary fuel (§ 63.111)

Process heater (§ 63.111)

Process unit shutdown (§ 63.161)

Process wastewater (§ 63.111)

Reactor (§ 63.111)

Reconstruction (§ 63.2)

Routed to a process or route to a process (§ 63.161)

Run (§ 63.2)

Secondary fuel (§ 63.111)

Sensor (§ 63.161)

Specific gravity monitoring device (§ 63.111)

State (§ 63.2)

Surge control vessel (§ 63.161)

Temperature monitoring device (§ 63.111)

Test method (§ 63.2)

Total resource effectiveness (TRE) index value (§ 63.111)

Treatment process (§ 63.111)

Unit operation (§ 63.101)

Visible emission (§ 63.2)

- (b) All other terms used in this subpart shall have the meaning given them in this section. If a term is defined in § 63.2, § 63.101, § 63.111, or § 63.161 or defined in 40 CFR part 63, subparts SS, UU, or WW and in this section, it shall have the meaning given in this section for purposes of this subpart.

**Aggregate batch vent stream** means a process vent containing emissions from at least one reactor batch process vent and at least one additional reactor or non-reactor batch process vent where the emissions are ducted, hardpiped, or otherwise connected together for a continuous flow.

**Amino resin** means a thermoset resin produced through the reaction of formaldehyde, or a formaldehyde containing solution (e.g., aqueous formaldehyde), with compound(s) that contain the amino group; these compounds include melamine, urea, and urea derivatives. Formaldehyde substitutes are exclusively aldehydes.

**Amino/phenolic resin** means one or both of the following:

- (1) Amino resin; or



(2) Phenolic resin.

**Amino/phenolic resin. Process unit (APPU)** means a collection of equipment assembled and connected by hardpiping or ductwork used to process raw materials and to manufacture an amino/phenolic resin as its primary product. This collection of equipment includes unit operations; process vents; storage vessels, as determined in § 63.1400(h); and the equipment that is subject to the equipment leak provisions as specified in § 63.1410. Utilities, lines and equipment not containing process fluids, 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 part of the amino/phenolic resin process unit. An amino/phenolic resin process unit consists of more than one unit operation.

**Back-end continuous process vent** means a continuous process vent for operations related to processing liquid resins into a dry form. Back-end process operations include, but are not limited to, flaking, grinding, blending, mixing, drying, pelletizing, and other finishing operations, as well as latex and crumb storage. Back-end does not include storage and loading of finished product or emission points that are regulated under §§ 63.1404 or 63.1409 through 63.1411 of this subpart.

**Batch cycle** means the operational step or steps, from start to finish, that occur as part of a batch unit operation.

**Batch emission episode** means a discrete emission venting episode associated with a single batch unit operation. Multiple batch emission episodes may occur from a single batch unit operation.

**Batch mode** means the discontinuous bulk movement of material through a unit operation. Mass, temperature, concentration, and other properties may vary with time. For a unit operation operated in a batch mode (i.e., batch unit operation), the addition of material and withdrawal of material do not typically occur simultaneously.

**Batch process vent** means a process vent from a batch unit operation within an affected source. Batch process vents are either reactor batch process vents or non-reactor batch process vents.

**Batch unit operation** means a unit operation operated in a batch mode.

**Block** means the time period that comprises a single batch cycle.

**Combustion device burner** means a device designed to mix and ignite fuel and air to provide a flame to heat and oxidize waste organic vapors in a combustion device.

**Continuous mode** means the continuous movement of material through a unit operation. Mass, temperature, concentration, and other properties typically approach steady-state conditions. For a unit operation operated in a continuous mode (i.e., continuous unit operation), the simultaneous addition of raw material and withdrawal of product is typical.

**Continuous process vent** means a process vent from a continuous unit operation within an affected source. Process vents that are serving as control devices are not subject to additional control requirements.

**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 § 63.1416(c) or (h).

**Continuous recorder** means a data recording device that either records an instantaneous data value at least once every 15 minutes or records 1 hour or more frequent block average values.

**Continuous unit operation** means a unit operation operated in a continuous mode.

**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 continuous process vents, recapture devices are considered control devices but recovery devices are not considered control devices. Condensers operating as process condensers are not considered control devices. For a condenser that sometimes operates as a process condenser to be considered a control device, it shall not be operating as a process condenser for a given batch emission episode, and it shall recycle of the recovered material within the process.

**Control technology** means any process modification or use of equipment that reduces organic HAP emissions. Examples include, but are not limited to, product reformulation to reduce solvent content and/or use, batch cycle time reduction to reduce the duration of emissions, reduction of nitrogen purge rate, and the lowering of process condenser coolant temperatures.

**Controlled organic HAP emissions** means the quantity of organic HAP discharged to the atmosphere from a control device.

**Emission point** means an individual continuous process vent, batch process vent, aggregate batch vent stream, storage vessel, equipment leak, or heat exchange system.

**Equipment** means , for the purposes of the provisions in § 63.1410, 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 required by § 63.1410. For purposes of this subpart, surge control vessels and bottom receivers are not equipment for purposes of regulating equipment leak emissions. Surge control vessels and bottoms receivers are regulated as non-reactor batch process vents for the purposes of this subpart.

**Equipment leak** means emissions of organic HAP from a pump, compressor, agitator, pressure relief device, sampling connection system, open-ended valve or line, valve, or instrumentation system that either contains or contacts a fluid (liquid or gas) that is at least 5 percent by weight of total organic HAP.

**Existing process unit** means any process unit that is not a new process unit.

**Flexible operations process unit** means a process unit that periodically manufactures different chemical products, polymers, or resins by alternating raw materials or operating conditions. These units are also referred to as campaign plants or blocked operations.

**Front-end continuous process vent** means a continuous process vent for operations in an APPU related to producing liquid resins, including any product recovery, stripping and filtering operations, and prior to any flaking or drying operations.

**Heat exchange system** means any cooling tower system or once-through cooling water system (e.g., river or pond water) designed and intended to operate to not allow contact between the cooling medium and process fluid or gases (i.e., a noncontact system). A heat exchange system may include more than one heat exchanger and may include recirculating or once-through cooling systems.

**Highest-HAP recipe** for a product means the recipe of the product with the highest total mass of organic HAP charged to the reactor during the production of a single batch of product.

**Initial start-up** means the first time a new or reconstructed affected source begins production, or, for equipment added or changed, the first time the equipment is put into operation. Initial start-up does not include operation solely for testing equipment. Initial start-up does not include subsequent start-ups of an affected source or portion thereof following malfunctions or shutdowns, or following changes in product

for flexible operation process units, or following recharging of equipment in batch operation. Further, for purposes of §§ 63.1401 and 63.1410, initial start-up does not include subsequent start-ups of affected sources or portions thereof following malfunctions or process unit shutdowns.

**Inprocess recycling** means a recycling operation in which recovered material is used by a unit operation within the same affected source. It is not necessary for recovered material to be used by the unit operation from which they were recovered.

**Maintenance wastewater** means wastewater generated by the draining of process fluid from components in the APPU 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 APPU for repair. The generation of wastewater from the routine rinsing or washing of equipment in batch operation between batches is not maintenance wastewater for the purposes of this subpart.

**Malfunction** means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment or process equipment, or failure of a process to operate in a normal or usual manner, or opening of a safety device 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.

**Maximum representative operating conditions** means, for purposes of testing or measurements required by § 63.1413, those conditions which reflect the highest organic HAP emissions reasonably expected to be vented to the control device or emitted to the atmosphere. For affected sources that produce the same product(s) using multiple recipes, the production of the highest-HAP recipe is reflective of maximum representative operating conditions.

**Maximum true vapor pressure** means the equilibrium partial pressure exerted by the total organic HAP in the stored liquid at the temperature equal to the highest calendar-month average of the liquid storage temperature for liquids stored above or below the ambient temperature, or at the local maximum monthly average temperature as reported by the National Weather Service for liquids stored 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 § 63.14); or
- (2) As obtained from standard reference texts; or
- (3) As determined by the American Society for Testing and Materials Method D2879-83 (incorporated by reference as specified in § 63.14); or
- (4) Any other method approved by the Administrator.

**Multicomponent system** means, as used in conjunction with batch process vents, a stream whose liquid and/or vapor contains more than one compound.

**Net heating value** means the difference between the heat value of the recovered chemical stream and the minimum heat value required to ensure a stable flame in the combustion device. This difference must have a positive value when used in the context of "recovering chemicals for fuel value" (e.g., in the definition of "recovery device" in this section).

**New process unit** means a process unit for which the construction or reconstruction commenced after December 14, 1998.

**Non-reactor process vent** means a batch or continuous process vent originating from a unit operation other than a reactor. Non-reactor process vents include, but are not limited to, process vents from filter presses, surge control vessels, bottoms receivers, weigh tanks, and distillation systems.

**Non-solvent-based resin** means an amino/phenolic resin manufactured without the use of a solvent as described in the definition of solvent-based resin.

**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, 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 APPU to which the records pertain, or storage in central files elsewhere at the major source.

**Operating day** means the period defined by the owner or operator in the Notification of Compliance Status required by § 63.1417(e). The operating day is the period for which daily average monitoring values and batch cycle daily average monitoring values are determined.

**Organic hazardous air pollutant(s) (organic HAP)** means one or more of the chemicals listed in Table 2 of this subpart or any other chemical which is:

- (1) Knowingly produced or introduced into the manufacturing process other than as an impurity; and
- (2) Listed in Table 2 of subpart F of this part.

**Phenolic resin** means a thermoset resin that is a condensation product of formaldehyde and phenol, or a formaldehyde substitute and/or a phenol substitute. Substitutes for formaldehyde are exclusively aldehydes and include acetaldehyde or furfuraldehyde. Substitutes for phenol include other phenolic starting compounds such as cresols, xylenols, p-tert-butylphenol, p-phenylphenol, nonylphenol, and resorcinols.

**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.

**Process condenser** means a condenser functioning so as to recover material as an integral part of a unit operation(s). A process condenser shall support a vapor-to-liquid phase change for periods of equipment operation that are at or above the boiling or bubble point of substance(s) at the liquid surface. Examples of process condensers include distillation condensers, reflux condensers, and condensers used in stripping or flashing operations. In a series of condensers, all condensers up to and including the first condenser with an exit gas temperature below the boiling or bubble point of the substance(s) at the liquid surface are considered to be process condensers. All condensers in line prior to a vacuum source are considered process condensers when the vacuum source is being operated. A condenser may be a process condenser for some batch emission episodes and, when meeting certain conditions, may be a control device for other batch emission episodes.

**Process unit** means a collection of equipment assembled and connected by hardpiping or ductwork used to process raw materials and to manufacture a product.

**Process vent** means a gaseous emission stream from a unit operation where the gaseous emission stream is discharged to the atmosphere either directly or after passing through one or more control, recovery, or recapture devices. Unit operations that may have process vents are condensers, distillation units,

reactors, or other unit operations within the APPU. Emission streams that are undiluted and uncontrolled containing less than 50 parts per million volume (ppmv) organic HAP, as determined through process knowledge that no organic HAP are present in the emission stream or using an engineering assessment as discussed in § 63.1414(d)(6); test data using the test methods specified in § 63.1414(a); or any other test method that has been validated according to the procedures in Method 301 of appendix A of this part are not considered process vents. Process vents exclude relief valve discharges, gaseous streams routed to a fuel gas system(s), and leaks from equipment regulated under § 63.1410. Process vents that are serving as control devices are not subject to additional control requirements.

**Product** means a resin, produced using the same monomers and varying in additives (e.g., initiators, terminators, etc.), catalysts, or in the relative proportions of monomers, that is manufactured by a process unit. With respect to resins, more than one recipe may be used to produce the same product. Product also means a chemical that is not a resin that is manufactured by a process unit. By-products, isolated intermediates, impurities, wastes, and trace contaminants are not considered products.

**Reactor process vent** means a batch or continuous process vent originating from a reactor.

**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.

**Recipe** means a specific composition from among the range of possible compositions that may occur within a product, as defined in this section. A recipe is determined by the proportions of monomers and, if present, other reactants and additives that are used to make the recipe. For example, a methylated amino resin and a non-methylated amino resin are both different recipes of the same product, amino resin.

**Recovery device** means an individual unit of equipment capable of and normally used for the purpose of recovering chemicals for use, reuse, fuel value (i.e., net heating value); or for sale for use, reuse, or fuel value (i.e., net heating value). 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 the purposes of the monitoring, recordkeeping, or reporting requirements of this subpart, recapture devices are considered recovery devices.

**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 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, combustible, explosive, reactive, or hazardous materials.

**Seal** means, for the purpose of complying with the requirements of § 63.1033(b), that instrument monitoring of the open-ended valve or line conducted according to the method specified in § 63.1023(b) and, as applicable, § 63.1023(c), indicates no readings of 500 parts per million or greater.

**Shutdown** means for purposes including, but not limited to, periodic maintenance, replacement of equipment, or repair, the cessation of operation of an affected source, an APPU(s) within an affected source, or equipment required or used to comply with this subpart, or the emptying or degassing of a storage vessel. For purposes of the batch process vent provisions in §§ 63.1406 through 63.1408, the cessation of equipment in batch operations is not a shutdown, unless the equipment undergoes maintenance, is replaced, or is repaired.

**Solvent-based resin** means an amino/phenolic resin that consumes a solvent (i.e., methanol, xylene) as a reactant in the resin producing reaction. The use of a solvent as a carrier (i.e., adding methanol to the product/water solution after the reaction is complete) does not meet this definition.

**Start-up** means the setting into operation of an affected source, an APPU(s) within an affected source, a unit operation within an affected source, or equipment required or used to comply with this subpart, or a storage vessel after emptying and degassing. For both continuous and batch unit operations, start-up includes initial start-up and operation solely for testing equipment. For both continuous and batch unit operations, start-up does not include the recharging of equipment in batch operation. For continuous unit operations, start-up includes transitional conditions due to changes in product for flexible operation process units. For batch unit operations, start-up does not include transitional conditions due to changes in product for flexible operation process units.

**Steady-state conditions** means that all variables (temperatures, pressures, volumes, flow rates, etc.) in a process do not vary significantly with time; minor fluctuations about constant mean values may occur.

**Storage vessel** means a tank or other vessel that is used to store liquids that contain one or more organic HAP. Storage vessels do not include:

- (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 with capacities smaller than 38 cubic meters;
- (4) Vessels and equipment storing and/or handling material that contains no organic HAP and/or organic HAP as impurities only;
- (5) Wastewater storage tanks;
- (6) Surge control vessels or bottoms receivers; and
- (7) Vessels and equipment storing and/or handling amino/phenolic resin.

**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.

**Uncontrolled organic HAP emissions** means the organic HAP emitted from a unit operation prior to introduction of the emission stream into a control device. Uncontrolled HAP emissions are determined after any condenser that is operating as a process condenser. If an emission stream is not routed to a control device, uncontrolled organic HAP emissions are those organic HAP emissions released to the atmosphere.

**Vent stream**, as used in reference to batch process vents, aggregate batch vent streams, continuous process vents, and storage vessels, means the emissions from that emission point.

**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 an APPU and is not a waste management unit.

**Wastewater** is either a process wastewater or maintenance wastewater and means water that:

- (1) Contains either:
  - (i) An annual average concentration of organic HAP, as indicated on Table 2 of this subpart, 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
  - (ii) An annual average concentration of organic HAP, as indicated on Table 2 of this subpart, of at least 10,000 parts per million by weight at any flow rate.
- (2) Is discarded from an APPU that is part of an affected source.
- (3) Does not include:
  - (i) Stormwater from segregated sewers;
  - (ii) Water from fire-fighting and deluge systems in segregated sewers;
  - (iii) Spills;
  - (iv) Water from safety showers;
  - (v) Water from testing of deluge systems; and
  - (vi) Water from testing of firefighting systems.

**Wastewater stream** means a stream that contains wastewater as defined in this section.

[65 FR 3290, Jan. 20, 2000, as amended at 71 FR 20460, Apr. 20, 2006; 79 FR 60929, Oct. 8, 2014; 83 FR 51852, Oct. 15, 2018]

## § 63.1403 Emission standards.

- (a) **Provisions of this subpart.** Except as allowed under paragraph (b) of this section, the owner or operator of an affected source shall comply with the provisions of §§ 63.1404 through 63.1410, as appropriate. When emissions are vented to a control device or control technology as part of complying with this subpart, emissions shall be vented through a closed vent system meeting the requirements of 40 CFR part 63, subpart SS (national emission standards for closed vent systems, control devices, recovery devices and routing to a fuel gas system or a process).

- (b) **Combined emission streams.** When emissions of different kinds (e.g., emissions from continuous process vents, storage vessels, etc.) are combined at a new affected source, and at least one of the emission streams would be required by this subpart to apply controls in the absence of combination with other emission streams, the owner or operator shall comply with the requirements of paragraph (b)(1) or (2) of this section, as appropriate.
- (1) For any combined vent stream that includes one or more aggregate batch vent streams, comply with the provisions for aggregate batch vent streams.
- (2) For any combined vent stream that does not include one or more aggregate batch vent streams:
- (i) Reactor batch process vents and non-reactor batch process vents shall comply with the provisions for reactor batch process vents and non-reactor batch process vents, as appropriate.
- (ii) The remaining emissions (i.e., storage vessel and/or continuous process vent emissions) included in the combined vent stream shall comply the provisions for storage vessels when storage vessel emissions are included and shall comply with the provisions for continuous process vents in the absence of storage vessel emissions (i.e., when only continuous process vents are included).
- (c) **Compliance for flexible operations process units.** With the exceptions specified in paragraphs (c)(1) and (2) of this section, owners or operators of APPUs that are flexible operations process units shall comply with the provisions of this subpart at all times, regardless of the product being manufactured. Once it has been determined that an emission point requires control during manufacture of amino/phenolic resins, that emission point shall be controlled at all times regardless of the product being manufactured.
- (1) When a flexible operations process unit is manufacturing a product in which no organic HAP are used or manufactured, the owner or operator is not required to comply with the provisions of this subpart or with the provisions of subpart A of this part during manufacture of that product. When requested by the Administrator, the owner or operator shall demonstrate that no organic HAP are used or manufactured.
- (2) When a flexible operations process unit is manufacturing a product subject to subpart GGG of this part, the owner or operator is not required to comply with the provisions of this subpart during manufacture of that product (i.e., a pharmaceutical).

[65 FR 3290, Jan. 20, 2000, as amended at 83 FR 51852, Oct. 15, 2018]

## § 63.1404 Storage vessel provisions.

- (a) **Emission standards.** For each storage vessel located at a new or existing affected source that has a capacity of greater than or equal to 20,000 gallons, but less than 40,000 gallons, and vapor pressure of 1.9 pounds per square inch absolute (psia) or greater; has a capacity of greater than or equal to 40,000 gallons, but less than 90,000 gallons, and vapor pressure of 0.75 psia or greater; or has a capacity of 90,000 gallons or greater and vapor pressure of 0.15 psia or greater, the owner or operator shall comply with either paragraph (a)(1) or (2) of this section. As an alternative to complying with paragraph (a) of this section, an owner or operator may comply with paragraph (b) of this section.



- (1) Reduce emissions of total organic HAP by 95 weight-percent. Control shall be achieved by venting emissions through a closed vent system to any combination of control devices meeting the requirements of 40 CFR part 63, subpart SS (national emission standards for closed vent systems, control devices, recovery devices and routing to a fuel gas system or a process). When complying with the requirements of 40 CFR part 63, subpart SS, the following apply for purposes of this subpart:
  - (i) Design evaluations are allowed for control devices that control emission points with total emissions less than 10 tons of organic HAP per year before control (i.e., small control devices).
  - (ii) When 40 CFR part 63, subpart SS refers to specific test methods for the measurement of organic HAP concentration, the test methods presented in § 63.1414(a) shall be used.
  - (iii) The option to measure TOC instead of organic HAP, as a basis for demonstrating compliance, is not allowed.
  - (iv) Excused excursions are not allowed.
  - (v) The provisions in § 63.1403(b), rather than the provisions in § 63.982(f), are to be followed for combined vent streams.
  - (vi) When a scrubber is used as a control device, the owner or operator shall follow the guidance provided in this subpart for design evaluations or performance tests, as appropriate, and for monitoring, recordkeeping, and reporting.
  - (vii) When there are conflicts between the due dates for reports presented in 40 CFR part 63, subpart SS and this subpart, reports shall be submitted according to the due dates presented in this subpart.
  - (viii) When there are conflicts between the recordkeeping and reporting requirements presented in 40 CFR part 63, subpart SS and this subpart, the owner or operator shall either follow both sets of requirements (i.e., follow the requirements in 40 CFR part 63, subpart SS for emission points covered by 40 CFR part 63, subpart SS and follow the requirements of this subpart for emission points covered by this subpart) or shall follow the set of requirements they prefer. If an owner or operator chooses to follow just one set of requirements, the owner or operator shall identify which set of requirements are being followed and which set of requirements are being disregarded in the appropriate report.
- (2) Comply with the requirements of 40 CFR part 63, subpart WW (national emission standards for storage vessels (control level 2)). When complying with the requirements of 40 CFR part 63, subpart WW, the following apply for purposes of this subpart:
  - (i) When there are conflicts between the due dates for reports presented in 40 CFR part 63, subpart WW and this subpart, reports shall be submitted according to the due dates presented in this subpart.
  - (ii) When there are conflicts between the recordkeeping and reporting requirements presented in 40 CFR part 63, subpart WW and this subpart, the owner or operator shall either follow both sets of requirements (i.e., follow the requirements in 40 CFR part 63, subpart WW for emission points covered by 40 CFR part 63, subpart WW and follow the requirements of this subpart for emission points covered by this subpart) or shall follow the set of requirements they prefer. If

an owner or operator chooses to follow just one set of requirements, the owner or operator shall identify which set of requirements are being followed and which set of requirements are being disregarded in the appropriate report.

- (b) **Alternative standard.** Vent all organic HAP emissions from a storage vessel meeting either of the capacity and vapor pressure criteria specified in paragraph (a) of this section to a combustion control device achieving an outlet organic HAP concentration of 20 ppmv or less or to a non-combustion control device achieving an outlet organic HAP concentration of 50 ppmv or less. Any storage vessels that are not vented to a control device meeting these conditions shall be controlled in accordance with the provisions of paragraph (a)(1) or (2) of this section.
- (c) Whenever gases or vapors containing 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 (a) or (b) of this section, the control device must be operating except as provided for in paragraph (c)(1) or (2) of this section.
  - (1) 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 (c)(1)(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 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.
  - (2) The gases or vapors containing HAP are routed from the storage vessel through a closed-vent system connected to an alternate control device meeting the requirements of paragraph (a)(1) or the alternative standard in paragraph (b) of this section.

[65 FR 3290, Jan. 20, 2000, as amended at 79 FR 60930, Oct. 8, 2014; 83 FR 51852, Oct. 15, 2018]

## § 63.1405 Continuous process vent provisions.

- (a) **Emission standards for new affected sources.** For each continuous process vent located at a new affected source with a Total Resource Effectiveness (TRE) index value, as determined following the procedures specified in § 63.1412(j), less than or equal to 1.2, the owner or operator shall comply with either paragraph (a)(1) or (2) of this section. As an alternative to complying with paragraph (a) of this section, an owner or operator may comply with paragraph (c)(1) of this section.
  - (1) Vent all emissions of organic HAP to a flare.
  - (2) Reduce emissions of total organic HAP by 85 weight-percent. Control shall be achieved by venting emissions through a closed vent system to any combination of control devices meeting the requirements of 40 CFR part 63, subpart SS (national emission standards for closed vent systems, control devices, recovery devices and routing to a fuel gas system or process). When complying with the requirements of 40 CFR part 63, subpart SS, the following apply for purposes of this subpart:
    - (i) Design evaluations are allowed for control devices that control emission points with total emissions less than 10 tons of organic HAP per year before control (i.e., small control devices).

- (ii) When 40 CFR part 63, subpart SS refers to specific test methods for the measurement of organic HAP concentration, the test methods presented in § 63.1414(a) shall be used.
  - (iii) The option to measure TOC instead of organic HAP, as a basis for demonstrating compliance, is not allowed.
  - (iv) Excused excursions are not allowed.
  - (v) The provisions in § 63.1403(b), rather than the provisions in § 63.982(f), are to be followed for combined vent streams.
  - (vi) When a scrubber is used as a control device, the owner or operator shall follow the guidance provided in this subpart for design evaluations or performance tests, as appropriate, and for monitoring, recordkeeping, and reporting.
  - (vii) When there are conflicts between the due dates for reports presented in 40 CFR part 63, subpart SS and this subpart, reports shall be submitted according to the due dates presented in this subpart.
  - (viii) When there are conflicts between the recordkeeping and reporting requirements presented in 40 CFR part 63, subpart SS and this subpart, the owner or operator shall either follow both sets of requirements (i.e., follow the requirements in 40 CFR part 63, subpart SS for emission points covered by 40 CFR part 63, subpart SS and follow the requirements of this subpart for emission points covered by this subpart) or shall follow the set of requirements they prefer. If an owner or operator chooses to follow just one set of requirements, the owner or operator shall identify which set of requirements are being followed and which set of requirements are being disregarded in the appropriate report.
- (b) **Emission standards for existing affected sources.** For each continuous process vent located at an existing affected source, the owner or operator shall comply with either paragraph (b)(1) or (2) of this section. As an alternative to complying with paragraph (b) of this section, an owner or operator may comply with paragraph (c)(2) of this section.
- (1) Vent all emissions of organic HAP to a flare.
  - (2) Reduce emissions as specified in paragraphs (b)(2)(i) through (iii) of this section, as applicable.
    - (i) The owner or operator of a back-end continuous process vent shall reduce total organic HAP emissions to less than or equal to 4.3 kilograms of total organic HAP per megagram of resin produced (8.6 pounds of total organic HAP per ton of resin produced).
    - (ii) The owner or operator of a front-end reactor continuous process vent shall reduce total organic HAP emissions to less than or equal to 0.28 kilograms of total organic HAP per hour (0.61 pounds of total organic HAP per hour).
    - (iii) The owner or operator of a front-end non-reactor continuous process vent shall reduce total organic HAP emissions to less than or equal to 0.010 kilograms of total organic HAP per hour (0.022 pounds of total organic HAP per hour).
- (c) **Alternative emission standards.** As an alternative to complying with paragraphs (a) or (b) of this section, an owner or operator may comply with paragraph (c)(1) or (2) of this section, as appropriate.

- (1) For each continuous process vent located at a new affected source, the owner or operator shall vent all organic HAP emissions from a continuous process vent meeting the TRE value specified in paragraph (a) of this section to a non-flare combustion control device achieving an outlet organic HAP concentration of 20 ppmv or less or to a non-combustion control device achieving an outlet organic HAP concentration of 50 ppmv or less. Any continuous process vents that are not vented to a control device meeting these conditions shall be controlled in accordance with the provisions of paragraph (a)(1) or (2) of this section.
- (2) For each continuous process vent located at an existing affected source, the owner or operator shall vent all organic HAP emissions from a continuous process vent to a non-flare combustion control device achieving an outlet organic HAP concentration of 20 ppmv or less or to a non-combustion control device achieving an outlet organic HAP concentration of 50 ppmv or less. Any continuous process vents that are not vented to a control device meeting these conditions shall be controlled in accordance with the provisions of paragraph (b)(1) or (2) of this section.

[65 FR 3290, Jan. 20, 2000, as amended at 79 FR 60930, Oct. 8, 2014; 83 FR 51853, Oct. 15, 2018]

### § 63.1406 Reactor batch process vent provisions.

- (a) **Emission standards.** Owners or operators of reactor batch process vents located at new or existing affected sources shall comply with paragraph (a)(1) or (2) of this section, as appropriate. As an alternative to complying with paragraph (a) of this section, an owner or operator may comply with paragraph (b) of this section.
  - (1) The owner or operator of a reactor batch process vent located at a new affected source shall control organic HAP emissions by complying with either paragraph (a)(1)(i), (ii), or (iii) of this section.
    - (i) Vent all emissions of organic HAP to a flare.
    - (ii) Reduce organic HAP emissions for the batch cycle by 95 weight percent using a control device or control technology.
    - (iii) Reduce organic HAP emissions from the collection of all reactor batch process vents within the affected source, as a whole, to 0.0045 kilogram of organic HAP per megagram of product or less for solvent-based resin production, or to 0.0004 kilogram of organic HAP per megagram of product or less for non-solvent-based resin production.
  - (2) The owner or operator of a reactor batch process vent located at an existing affected source shall control organic HAP emissions by complying with either paragraph (a)(2)(i), (ii), or (iii) of this section.
    - (i) Vent all emissions of organic HAP to a flare.
    - (ii) Reduce organic HAP emissions for the batch cycle by 83 weight percent using a control device or control technology.
    - (iii) Reduce organic HAP emissions from the collection of all reactor batch process vents within the affected source, as a whole, to 0.0567 kilogram of organic HAP per megagram of product or less for solvent-based resin production, or to 0.0057 kilogram of organic HAP per megagram of product or less for non-solvent-based resin production.

- (b) **Alternative standard.** Vent all organic HAP emissions from a reactor batch process vent to a combustion control device achieving an outlet organic HAP concentration of 20 ppmv or less or to a non-combustion control device achieving an outlet organic HAP concentration of 50 ppmv or less. Any reactor batch process vents that are not vented to a control device meeting these conditions shall be controlled in accordance with the provisions of paragraph (a)(1)(ii), or paragraph (a)(2)(ii) of this section.
- (c) **Use of boiler or process heater.** If a boiler or process heater is used to comply with the requirements of paragraph (a)(1)(i) or (ii), or paragraph (a)(2)(i) or (ii) of this section, the reactor batch process vent shall be introduced into the flame zone of such a device.

## § 63.1407 Non-reactor batch process vent provisions.

- (a) **Emission standards.**
  - (1) Owners or operators of non-reactor batch process vents located at new or existing affected sources with 0.25 tons per year (0.23 megagrams per year) of uncontrolled organic HAP emissions or greater from the collection of non-reactor batch process vents within the affected source shall comply with the requirements in paragraph (a)(2) or (3) of this section, as appropriate. As an alternative to complying with paragraph (a)(2) or (3) of this section, an owner or operator may comply with paragraph (b) of this section. Owners or operators shall determine uncontrolled organic HAP emissions from the collection of non-reactor batch process vents within the affected source as specified in paragraph (d) of this section. If the owner or operator finds that uncontrolled organic HAP emissions from the collection of non-reactor batch process vents within the affected source are less than 0.25 tons per year (0.23 megagrams per year), non-reactor batch process vents are not subject to the control requirements of this section. Further, the owner or operator shall, when requested by the Administrator, demonstrate that organic HAP emissions for the collection of non-reactor batch process vents within the affected source are less than 0.25 tons per year (0.23 megagrams per year).
  - (2) The owner or operator of a non-reactor batch process vent located at a new affected source shall:
    - (i) Vent all emissions of organic HAP to a flare; or
    - (ii) For the collection of non-reactor batch process vents within the affected source, reduce organic HAP emissions for the batch cycle by 76 weight percent using a control device or control technology.
  - (3) The owner or operator of a non-reactor batch process vent located at an existing affected source shall:
    - (i) Vent all emissions of organic HAP to a flare; or
    - (ii) For the collection of non-reactor batch process vents within the affected source, reduce organic HAP emissions for the batch cycle by 62 weight percent using a control device or control technology.
- (b) **Alternative standard.** Comply with either paragraph (b)(1) or (2) of this section.
  - (1) **Control device outlet concentration.** Vent all organic HAP emissions from a non-reactor batch process vent to a combustion control device achieving an outlet organic HAP concentration of 20 ppmv or less or to a non-combustion control device achieving an outlet organic HAP concentration

or 50 ppmv or less. Any reactor batch process vents that are not vented to a control device meeting these conditions shall be controlled in accordance with the provisions of paragraph (a)(2) or (3) of this section.

(2) **Mass emission limit.** Include the emissions from all non-reactor batch process vents in the compliance demonstration required for reactor batch process vents complying with the mass emission limits specified in § 63.1406(a)(1)(iii) and (a)(2)(iii), as appropriate. This compliance option may only be used when the owner or operator has elected to comply with the mass emission limit for reactor batch process vents.

(c) **Use of boiler or process heater.** If a boiler or process heater is used to comply with paragraph (a)(2)(ii) or (a)(3)(ii) of this section, the reactor batch process vent shall be introduced into the flame zone of such a device.

(d) **Determining uncontrolled organic HAP emissions.** Owners or operators shall determine uncontrolled organic HAP emissions from the collection of non-reactor batch process vents within the affected source based on engineering assessment as described in § 63.1414(d)(6).

### § 63.1408 Aggregate batch vent stream provisions.

(a) **Emission standards.** Owners or operators of aggregate batch vent streams at a new or existing affected source shall comply with either paragraph (a)(1) or (2) of this section, as appropriate. As an alternative to complying with paragraph (a)(1) or (2) of this section, an owner or operator may comply with paragraph (b) of this section.

(1) The owner or operator of an aggregate batch vent stream located at a new affected source shall:

- (i) Vent all emissions of organic HAP to a flare; or
- (ii) Reduce organic HAP emissions by 95 weight percent or to a concentration of 20 ppmv when using a combustion control device or to a concentration of 50 ppmv when using a non-combustion control device, whichever is less stringent, on a continuous basis.

(2) The owner or operator of an aggregate batch vent stream located at an existing affected source shall:

- (i) Vent all emissions of organic HAP to a flare; or
- (ii) Reduce organic HAP emissions by 83 weight percent or to a concentration of 20 ppmv when using a combustion control device or to a concentration of 50 ppmv when using a non-combustion control device, whichever is less stringent, on a continuous basis.

(b) **Alternative standard.** Comply with either paragraph (b)(1) or (2) of this section.

(1) **Control device outlet concentration.** Vent all organic HAP emissions from an aggregate batch vent stream to a combustion control device achieving an outlet organic HAP concentration of 20 ppmv or less or to a non-combustion control device achieving an outlet organic HAP concentration of 50 ppmv or less. Any aggregate batch vent streams that are not vented to a control device meeting these conditions shall be controlled in accordance with the provisions of paragraphs (a)(1) or (a)(2) of this section.

- (2) **Mass emission limit.** Include the emissions from all aggregate batch vent streams in the compliance demonstration required for reactor batch process vents complying with the mass emission limits specified in § 63.1406(a)(1)(iii) and (a)(2)(iii), as appropriate. This compliance option may only be used when the owner or operator has elected to comply with the mass emission limit for reactor batch process vents.

### § 63.1409 Heat exchange system provisions.

- (a) Unless one or more of the conditions specified in paragraphs (a)(1) through (6) 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 an affected source, according to the provisions in either paragraph (b) or (c) of this section. Whenever a leak is detected, the owner or operator shall comply with the requirements in paragraph (d) 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 HAP listed in column A of Table 2 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.
  - (4) 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 6 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.
  - (5) The recirculating heat exchange system is used to cool process fluids that contain less than 5 percent by weight of total HAP listed in column A of Table 2 of this subpart.
  - (6) The once-through heat exchange system is used to cool process fluids that contain less than 5 percent by weight of total HAP listed in column B of Table 2 of this subpart.
- (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 HAP or other representative substances whose presence in cooling water indicate a leak shall comply with the requirements specified in paragraphs (b)(1) through (6) of this section. The cooling water shall be monitored for total HAP, 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 HAP or total HAP refers to the HAP listed in column A of Table 2 of this subpart.
  - (ii) For once-through heat exchange systems, the monitoring of speciated HAP or total HAP refers to the HAP listed in column B of Table 2 of this subpart.
- (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, 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 concentration 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 (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 (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 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 2 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 (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 (2) of this section are met. All time periods in paragraphs (e)(1) and (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 (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 (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 HAP listed in column A of Table 2 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 HAP listed in column A of Table 2 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.

### § 63.1410 Equipment leak provisions.

The owner or operator of each affected source shall comply with the requirements of 40 CFR part 63, subpart UU for all equipment, as defined under § 63.1402, that contains or contacts 5 weight-percent HAP or greater and operates 300 hours per year or more, except § 63.1030. The weight-percent HAP is determined for equipment using the organic HAP concentration measurement methods specified in § 63.1414(a). When complying with the requirements of 40 CFR part 63, subpart SS, as referred to by 40 CFR part 63, subpart UU, the following apply for purposes of this subpart:

- (a) Design evaluations are allowed for control devices that control emission points with total emissions less than 10 tons of organic HAP per year before control (i.e., small control devices).
- (b) When 40 CFR part 63, subpart SS refers to specific test methods for the measurement of organic HAP concentration, the test methods presented in § 63.1414(a) shall be used.
- (c) The option to measure TOC instead of organic HAP, as a basis for demonstrating compliance, is not allowed.
- (d) Excused excursions are not allowed.
- (e) The provisions in § 63.1403(b), rather than the provisions in § 63.982(f), are to be followed for combined vent streams.
- (f) When a scrubber is used as a control device, the owner or operator shall follow the guidance provided in this subpart for design evaluations or performance tests, as appropriate, and for monitoring, recordkeeping, and reporting.

- (g) When there are conflicts between the due dates for reports presented in 40 CFR part 63, subpart SS and this subpart, reports shall be submitted according to the due dates presented in this subpart.
- (h) When there are conflicts between the recordkeeping and reporting requirements presented in 40 CFR part 63, subpart SS and this subpart, the owner or operator shall either follow both sets of requirements (i.e., follow the requirements in 40 CFR part 63, subpart SS for emission points covered by 40 CFR part 63, subpart SS and follow the requirements of this subpart for emission points covered by this subpart) or shall follow the set of requirements they prefer. If an owner or operator chooses to follow just one set of requirements, the owner or operator shall identify which set of requirements are being followed and which set of requirements are being disregarded in the appropriate report.

[65 FR 3290, Jan. 20, 2000, as amended at 79 FR 60930, Oct. 8, 2014]

### § 63.1411 Requirements for pressure relief devices.

Except as specified in paragraph (d) of this section, the owner or operator must comply with the requirements specified in paragraphs (a) and (b) of this section for pressure relief devices in organic HAP gas or vapor service. Except as specified in paragraph (d) of this section, the owner or operator must also comply with the requirements specified in paragraph (c) of this section for all pressure relief devices in organic HAP service.

- (a) **Operating requirements.** Except during a pressure release event, operate each pressure relief device in organic HAP gas or vapor service with an instrument reading of less than 500 ppm above background as described in Method 21 of 40 CFR part 60, Appendix A.
- (b) **Pressure release requirements.** For pressure relief devices in organic HAP gas or vapor service, the owner or operator must comply with either paragraph (b)(1) or (2) of this section following a pressure release, as applicable.
  - (1) If the pressure relief device does not consist of or include a rupture disk, conduct instrument monitoring, as described in Method 21 of 40 CFR part 60, appendix A, no later than 5 calendar days after the pressure relief device returns to organic HAP service following a pressure release to verify that the pressure relief device is operating with an instrument reading of less than 500 ppm above background, except as provided in § 63.1024(d).
  - (2) If the pressure relief device consists of or includes 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, except as provided in § 63.1024(d).
- (c) **Pressure release management.** Except as specified in paragraph (d) of this section, emissions of organic HAP to the atmosphere from pressure relief devices in organic HAP service are prohibited, and the owner or operator must comply with the requirements specified in paragraphs (c)(1) and (2) of this section for all pressure relief devices in organic HAP service.
  - (1) The owner or operator must equip each pressure relief device in organic HAP service with a device(s) or parameter monitoring system that is capable of:
    - (i) Identifying the pressure release;
    - (ii) Recording the time and duration of each pressure release; and

(iii) Notifying operators immediately that a pressure release is occurring. The device or monitoring system may be either specific to the pressure relief device itself or may 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.

(2) If any pressure relief device in organic HAP service releases to atmosphere as a result of a pressure release event, the owner or operator must calculate the quantity of organic HAP released during each pressure release event and report this quantity as required in § 63.1417(f)(13)(iii). Calculations may be based on data from the pressure relief device monitoring alone or in combination with process parameter monitoring data and process knowledge.

(d) **Pressure relief devices routed to a control device, process, fuel gas system, or drain system.** If a pressure relief device in organic HAP service is designed and operated to route all HAP emissions from pressure releases through a closed vent system to a control device or to a process, fuel gas system, or drain system, the owner or operator is not required to comply with paragraphs (a), (b), or (c) (if applicable) of this section for that pressure relief device. The fuel gas system or closed vent system and control device (if applicable) must meet the requirements of § 63.1034, as applicable (except that the term "pressure relief devices" shall apply instead of the term "equipment leaks" in § 63.1034). The drain system (if applicable) must meet the requirements of § 63.136.

[79 FR 60930, Oct. 8, 2014]

## § 63.1412 Continuous process vent applicability assessment procedures and methods.

(a) **General.** The provisions of this section provide procedures and methods for determining the applicability of the control requirements specified in § 63.1405(a) to continuous process vents.

(b) **Sampling sites.** Sampling sites shall be located as follows:

(1) **Sampling site location.** The sampling site for determining volumetric flow rate, regulated organic HAP concentration, total organic HAP, net heating value, and TRE index value, shall be after the final 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.

(2) **Sampling site selection method.** Method 1 or 1A of 40 CFR part 60, appendix A, as appropriate, shall be used for selection of the sampling site. No traverse site selection method is needed for process vents smaller than 0.33 foot (0.10 meter) in nominal inside diameter.

(c) **Applicability assessment requirement.** The organic HAP concentrations, volumetric flow rates, heating values, organic HAP emission rates, TRE index values, and engineering assessment control applicability assessment requirements are to be determined during maximum representative operating conditions for the process, except as provided in paragraph (d) of this section, or unless the Administrator specifies or approves alternate operating conditions. Operations during periods of malfunction shall not constitute representative conditions for the purpose of an applicability test.

(d) **Exceptions.** The owner or operator is not required to conduct a test that will cause any of the following situations:

(1) Causing damage to equipment;

(2) Necessitating that the owner or operator make a product that does not meet an existing specification for sale to a customer; or

(3) Necessitating that the owner or operator make a product in excess of demand.

(e) **Organic HAP concentration.** The organic HAP concentrations, used for TRE index value calculations in paragraph (j) of this section, shall be determined using the procedures specified in either § 63.1414(a) or by using the engineering assessment procedures in paragraph (k) of this section.

(f) **Volumetric flow rate.** The volumetric flow rate shall be determined using the procedures specified in § 63.1414(a), or by using the engineering assessment procedures in paragraph (k) of this section.

(g) **Heating value.** The net heating value shall be determined as specified in paragraphs (g)(1) and (2) of this section, or by using the engineering assessment procedures in paragraph (k) of this section.

(1) The net heating value of the continuous process vent shall be calculated using Equation 1:

$$H_T = K_1 \left( \sum_{i=1}^n D_i H_i \right) \quad | \text{Eq. 1} |$$

Where:

$H_T$  = Net heating value of the sample, megaJoules per standard cubic meter, where the net enthalpy per mole of process vent is based on combustion at 25 °C and 760 millimeters of mercury, but the standard temperature for determining the volume corresponding to 1 mole is 20 °C, as in the definition of  $Q_S$  (process vent volumetric flow rate).

$K_1$  = Constant,  $1.740 \times 10^{-7}$  (parts per million)<sup>-1</sup> (gram-mole per standard cubic meter) (megaJoules per kilocalorie), where standard temperature for (gram-mole per standard cubic meter) is 20 °C.

$D_j$  = Organic HAP concentration on a wet basis of compound j in parts per million, as measured by procedures indicated in paragraph (e) of this section. For process vents that pass through a final stream jet and are not condensed, the moisture is assumed to be 2.3 percent by volume.

$H_j$  = Net heat of combustion of compound j, kilocalorie per gram-mole, based on combustion at 25 °C and 760 millimeters of mercury.

(2) The molar composition of the process vent ( $D_j$ ) shall be determined using the methods specified in paragraphs (g)(2)(i) through (iii) of this section:

(i) The methods specified in § 63.1414(a) to measure the concentration of each organic compound.

(ii) American Society for Testing and Materials D1946-90 (Reapproved 1994) (incorporated by reference, see § 63.14) to measure the concentration of carbon monoxide and hydrogen.

(iii) Method 4 of 40 CFR part 60, appendix A to measure the moisture content of the stack gas.

(h) **Organic HAP emission rate.** The emission rate of organic HAP in the continuous process vent, as required by the TRE index value equation specified in paragraph (j) of this section, shall be calculated using Equation 2:

$$E = K_2 \left( \sum_{i=1}^n C_i M_i \right) Q_S \quad [\text{Eq. 2}]$$

Where:

E = Emission rate of organic HAP in the sample, kilograms per hour.

$K_2$  = Constant,  $2.494 \times 10^{-6}$  (parts per million)<sup>-1</sup> (gram-mole per standard cubic meter) (kilogram/gram) (minutes/hour), where standard temperature for (gram-mole per standard cubic meter) is 20 °C.

n = Number of components in the sample.

$C_j$  = Organic HAP concentration on a dry basis of organic compound j in parts per million as determined by the methods specified in paragraph (e) of this section.

$M_j$  = Molecular weight of organic compound j, gram/gram-mole.

$Q_S$  = Continuous process vent flow rate, dry standard cubic meter per minute, at a temperature of 20 °C.

(i) [Reserved]

(j) **TRE index value.** The owner or operator shall calculate the TRE index value of the continuous process vent using the equations and procedures in this paragraph, as applicable, and shall maintain records specified in § 63.1416(f).

(1) **TRE index value equation.** The equation for calculating the TRE index value is Equation 3:

$$\text{TRE} = 1/E_{\text{HAP}} \cdot [A + B(Q_S) + C(H_T)] \quad [\text{Eq. 3}]$$

Where:

TRE = TRE index value.

A, B, C = Coefficients presented in table 7 of this subpart.

$E_{\text{HAP}}$  = Emission rate of total organic HAP, kilograms per hour, as calculated according to paragraph (h) or (k) of this section.

$Q_S$  = Continuous process vent volumetric flow rate, standard cubic meters per minute, at a standard temperature of 20 °C, as calculated according to paragraph (f) or (k) of this section.

$H_T$  = Continuous process vent net heating value, megaJoules per standard cubic meter, as calculated according to paragraph (g) or (k) of this section.

(2) **TRE index calculation.** The owner or operator of a continuous process vent shall calculate the TRE index value by using the equation and appropriate coefficients in Table 6 of this subpart. The owner or operator shall calculate the TRE index value for each control device scenario (i.e., flare, thermal incinerator with 0 percent recovery, thermal incinerator with 70 percent recovery). The lowest TRE index value is to be compared to the applicability criteria specified in § 63.1405(a).

(k) **Engineering assessment.** For purposes of TRE index value determinations, engineering assessments may be used to determine continuous process vent flow rate, net heating value, and total organic HAP emission rate for the representative operating condition expected to yield the lowest TRE index value. Engineering assessments shall meet the requirements of paragraphs (k)(1) through (4) of this section.

(1) If the TRE index value calculated using engineering assessment is greater than 4.0, the owner or operator is not required to perform the measurements specified in paragraphs (e) through (h) of this section.

(2) If the TRE index value calculated using engineering assessment is less than or equal to 4.0, the owner or operator is required either to perform the measurements specified in paragraphs (e) through (h) of this section for control applicability assessment or comply with the control requirements specified in § 63.1405(a).

(3) Engineering assessment includes, but is not limited to, the following examples:

(i) Previous test results, provided the tests are representative of current operating practices.

(ii) Bench-scale or pilot-scale test data representative of the process under representative operating conditions.

(iii) Maximum volumetric flow rate, organic HAP emission rate, organic HAP concentration, or net heating value limit specified or implied within a permit limit applicable to the continuous process vent.

(iv) 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, the following:

(A) Use of material balances based on process stoichiometry to estimate maximum organic HAP concentrations;

(B) Estimation of maximum volumetric flow rate based on physical equipment design such as pump or blower capacities;

(C) Estimation of organic HAP concentrations based on saturation conditions; and

(D) Estimation of maximum expected net heating value based on the stream concentration of each organic compound.

[65 FR 3290, Jan. 20, 2000, as amended at 79 FR 60931, Oct. 8, 2014; 83 FR 51853, Oct. 15, 2018]

### § 63.1413 Compliance demonstration procedures.

(a) **General.** For each emission point, the owner or operator shall meet three stages of compliance, with exceptions specified in this subpart. First, the owner or operator shall conduct a performance test or design evaluation to demonstrate either the performance of the control device or control technology being used or the uncontrolled total organic HAP emissions rate from a continuous process vent. Second,

the owner or operator shall meet the requirements for demonstrating initial compliance (e.g., a demonstration that the required percent reduction or emissions limit is achieved). Third, the owner or operator shall meet the requirements for demonstrating continuous compliance through some form of monitoring (e.g., continuous monitoring of operating parameters).

- (1) **Large control devices and small control devices.** A large control device is a control device that controls emission points with total emissions of 10 tons of organic HAP per year or more before control. A small control device is a control device that controls emission points with total emissions less than 10 tons of organic HAP per year before control.
  - (i) **Large control devices.** Owners or operators are required to conduct a performance test for a large control device. The establishment of parameter monitoring levels shall be based on data obtained during the required performance test.
  - (ii) **Small control devices.** Owners or operators are required to conduct a design evaluation for a small control device. An owner or operator may choose to conduct a performance test for a small control device and such a performance test shall follow the procedures specified in this section, as appropriate. Whenever a small control device becomes a large control device, the owner or operator shall conduct a performance test following the procedures specified in this section, as appropriate. Notification that such a performance test is required, the site-specific test plan, and the results of the performance test shall be provided to the Administrator as specified in § 63.1417. Except as provided in § 63.1415(a)(2), the parameter monitoring levels for small control devices shall be set based on the design evaluation required by paragraph (a)(3) of this section. Further, when setting the parameter monitoring level(s) based on the design evaluation, the owner or operator shall submit the information specified in § 63.1417(d)(7) for review and approval as part of the Precompliance Report.
  - (iii) **Uncontrolled continuous process vents.** Owners or operators are required to conduct either a performance test or a design evaluation for continuous process vents that are not controlled through either a large or small control device.
- (2) **Performance tests.** Performance tests shall be conducted under such conditions as the Administrator specifies to the owner or operator based on representative performance of the affected source for the period being tested and in accordance with the General Provisions at § 63.7(a)(1), (a)(3), (d), (e)(2), (e)(4), (g), and (h), with the exceptions specified in paragraph (a)(1) of this section. Representative conditions exclude periods of startup and shutdown unless specified by the Administrator or an applicable subpart. The owner or operator may not conduct performance tests during periods of malfunction. The owner or operator 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, the owner or operator shall make available to the Administrator such records as may be necessary to determine the conditions of performance tests. Data shall be reduced in accordance with the EPA approved methods specified in this 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.
  - (i) **Additional control devices not requiring performance tests.** An owner or operator is not required to conduct a performance test when using one of the following control devices:
    - (A) A boiler or process heater with a design heat input capacity of 44 megawatts or greater.
    - (B) A boiler or process heater into which the vent stream is introduced with the primary fuel or is used as the primary fuel.



- (C) A boiler or process heater burning hazardous waste for which the owner or operator:
    - (1) Has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 266, subpart H; or
    - (2) Has certified compliance with the interim status requirements of 40 CFR part 266, subpart H.
  - (D) 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.
  - (E) A control device for which a performance test was already conducted for determining compliance with another regulation promulgated by the EPA, provided the test was conducted using the same Methods specified in this section, and either no deliberate 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. Parameter monitoring levels established based on such a performance test may be used for purposes of demonstrating continuous compliance with this subpart.
- (ii) **Exceptions to performance test requirements in the General Provisions.**
- (A) Performance tests shall be conducted at maximum representative operating conditions achievable during either the 6-month period ending 2 months before the Notification of Compliance Status required by § 63.1417(e) is due, or during the 6-month period surrounding the date of the performance test (i.e., the period beginning 3 months prior to the performance test and ending 3 months after the performance test). In achieving maximum representative operating conditions, an owner or operator is not required to cause damage to equipment, make a product that does not meet an existing specification for sale to a customer, or make a product in excess of demand.
  - (B) When § 63.7(g) references the Notification of Compliance Status requirements in § 63.9(h), the requirements in § 63.1417(e) shall apply for purposes of this subpart.
  - (C) Performance tests shall be performed no later than 150 days after the compliance dates specified in this subpart (i.e., in time for the results to be included in the Notification of Compliance Status), rather than according to the time periods in § 63.7(a)(2).
- (3) **Design evaluations.** As provided in paragraph (a) of this section, a design evaluation may be conducted to demonstrate the organic HAP removal efficiency for a control device or control technology, or the uncontrolled total organic HAP emissions rate from a continuous process vent. As applicable, a design evaluation shall address the organic HAP emissions rate from uncontrolled continuous process vents, the composition and organic HAP concentration of the vent stream(s) entering a control device or control technology, the operating parameters of the emission point and any control device or control technology, and other conditions or parameters that reflect the performance of the control device or control technology or the organic HAP emission rate from a continuous process vent. A design evaluation also shall address other vent stream characteristics and control device operating parameters as specified in any one of paragraphs (a)(3)(i) through (vi)

of this section, for controlled vent streams, depending on the type of control device that is used. If the vent stream(s) is not the only inlet to the control device, the efficiency demonstration also shall consider all other vapors, gases, and liquids, other than fuels, received by the control device.

- (i) 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 include the additional information in paragraphs (a)(3)(i)(A) and (B) of this section for trays and a packed column scrubber:
  - (A) Type and total number of theoretical and actual trays; and
  - (B) Type and total surface area of packing for entire column, and for individual packed sections if column contains more than one packed section.
- (ii) For a condenser, the design evaluation shall consider the vent stream flow rate, relative humidity, and temperature and shall establish the design outlet organic HAP 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. The temperature of the gas stream exiting the condenser shall be measured and used to establish the outlet organic HAP concentration.
- (iii) For a carbon adsorption system that regenerates the carbon bed directly onsite in the control device, such as a fixed-bed adsorber, the design evaluation shall consider the vent stream 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. For vacuum desorption, the pressure drop shall be included.
- (iv) For a carbon adsorption system that does not regenerate the carbon bed directly onsite in the control device, such as a carbon canister, the design evaluation shall consider the vent stream 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.
- (v) For an enclosed combustion device with a minimum residence time of 0.5 seconds and a minimum temperature of 760 C, the design evaluation shall document that these conditions exist.
- (vi) For a combustion control device that does not satisfy the criteria in paragraph (a)(3)(v) of this section, the design evaluation shall address the following characteristics, depending on the type of control device:

- (A) For a thermal vapor incinerator, the design evaluation shall consider the autoignition temperature of the organic HAP, shall consider the vent stream flow rate, and shall 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 evaluation shall consider the vent stream flow rate and shall establish the design minimum and average temperatures across the catalyst bed inlet and outlet.
  - (C) For a boiler or process heater, the design evaluation shall consider the vent stream 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.
- (4) **Establishment of parameter monitoring levels.** The owner or operator of a control device that has one or more parameter monitoring level requirements specified under this subpart, or specified under subparts referenced by this subpart, shall establish a maximum or minimum level, as denoted on Table 4 of this subpart, for each measured parameter using the procedures specified in paragraph (a)(4)(i) or (ii) of this section. Except as otherwise provided in this subpart, the owner or operator shall operate control devices such that the hourly average, daily average, batch cycle daily average, or block average of monitored parameters, established as specified in this paragraph, remains above the minimum level or below the maximum level, as appropriate.
- (i) **Establishment of parameter monitoring levels based on performance tests —**
- (A) **Emission points other than batch process vents.** During initial compliance testing, the appropriate parameter shall be continuously monitored during the required 1-hour test runs. The monitoring level(s) shall then be established as the average of the maximum (or minimum) point values from the three test runs. The average of the maximum values shall be used when establishing a maximum level, and the average of the minimum values shall be used when establishing a minimum level.
  - (B) **Aggregate batch vent streams.** For aggregate batch vent streams the monitoring level shall be established in accordance with paragraph (a)(4)(i)(A) of this section.
  - (C) **Batch process vents.** The monitoring level(s) shall be established using the procedures specified in paragraphs (a)(4)(i)(C)(1) or (2) of this section. For batch process vents complying with the percent reduction standards specified in § 63.1406 or § 63.1407, parameter monitoring levels shall be established by the design evaluation, or during the performance test so that the specified percent reduction from § 63.1406 or § 63.1407, as appropriate, is met.
    - (1) If more than one batch emission episode or more than one portion of a batch emission episode has been selected to be controlled, a single level for the batch cycle shall be calculated as follows:
      - (i) During initial compliance testing, the appropriate parameter shall be monitored continuously and recorded once every 15 minutes at all times when batch emission episodes, or portions thereof, selected to be controlled are vented to the control device. A minimum of three recorded values shall be obtained for each batch emission episode, or portion thereof, regardless of the length of time emissions are occurring.

- (ii) The average monitored parameter value shall be calculated for each batch emission episode, or portion thereof, in the batch cycle selected to be controlled. The average shall be based on all values measured during the required performance test.
  - (iii) If the level to be established is a maximum operating parameter, the level shall be defined as the minimum of the average parameter values from each batch emission episode, or portion thereof, in the batch cycle selected to be controlled (i.e., identify the batch emission episode, or portion thereof, which requires the lowest parameter value in order to assure compliance; the average parameter value that is necessary to assure compliance for that batch emission episode, or portion thereof, shall be the level for all batch emission episodes, or portions thereof, in the batch cycle that are selected to be controlled).
  - (iv) If the level to be established is a minimum operating parameter, the level shall be defined as the maximum of the average parameter values from each batch emission episode, or portion thereof, in the batch cycle selected to be controlled (i.e., identify the batch emission episode, or portion thereof, which requires the highest parameter value in order to assure compliance; the average parameter value that is necessary to assure compliance for that batch emission episode, or portion thereof, shall be the level for all batch emission episodes, or portions thereof, in the batch cycle that are selected to be controlled).
  - (v) Alternatively, an average monitored parameter value shall be calculated for the entire batch cycle based on all values recorded during each batch emission episode, or portion thereof, selected to be controlled.
- (2) Instead of establishing a single level for the batch cycle, as described in paragraph (a)(4)(i)(C)(1) of this section, an owner or operator may establish separate levels for each batch emission episode, or portion thereof, selected to be controlled. Each level shall be determined as specified in paragraphs (a)(4)(i)(C)(1)(i) through (v) of this section.
- (3) The batch cycle shall be defined in the Notification of Compliance Status, as specified in § 63.1417(e)(2). Said definition shall include an identification of each batch emission episode. The definition of batch cycle shall also include the information required to determine parameter monitoring compliance for partial batch cycles (i.e., when part of a batch cycle is accomplished during 2 different operating days) for those parameters averaged on a batch cycle daily average basis.
- (ii) ***Establishment of parameter monitoring levels based on performance tests, engineering assessments, and/or manufacturer's recommendations.*** Parameter monitoring levels may be established based on the parameter values measured during the performance test supplemented by engineering assessments and/or manufacturer's recommendations. Performance testing is not required to be conducted over the entire range of expected parameter values. When setting the parameter monitoring level(s) using the procedures specified in this paragraph, the owner or operator shall submit the information specified in § 63.1417(d)(7) for review and approval as part of the Precompliance Report.

- (b) ***Initial and continuous compliance for storage vessels.***

- (1) Initial compliance with the percent reduction standard specified in § 63.1404(a)(1) shall be demonstrated following the procedures in 40 CFR part 63, subpart SS.
- (2) Initial compliance with the work practice standard specified in § 63.1404(a)(2) shall be demonstrated following the procedures in 40 CFR part 63, subpart WW.
- (3) Continuous compliance with the percent reduction standard specified in § 63.1404(a)(1) shall be demonstrated following the procedures in 40 CFR part 63, subpart SS.
- (4) Continuous compliance with the work practice standard specified in § 63.1404(a)(2) shall be demonstrated following the procedures in 40 CFR part 63, subpart WW.
- (5) Initial and continuous compliance with the alternative standard specified in § 63.1404(b) shall be demonstrated following the procedures in paragraph (f) of this section.

(c) *Initial and continuous compliance for continuous process vents.*

- (1) Initial compliance with the percent reduction standard specified in § 63.1405(a)(2) shall be demonstrated following the procedures in 40 CFR part 63, subpart SS.
- (2) Initial compliance with § 63.1405(a)(1) or (b)(1) (venting of emissions to a flare) shall be demonstrated following the procedures specified in paragraph (g) of this section.
- (3) Continuous compliance with the percent reduction standard specified in § 63.1405(a)(2) shall be demonstrated following the procedures in 40 CFR part 63, subpart SS.
- (4) Continuous compliance with § 63.1405(a)(1) or (b)(1) (venting of emissions to a flare) shall be demonstrated following the continuous monitoring procedures specified in § 63.1415.
- (5) Initial and continuous compliance with the production-based emission limit specified in § 63.1405(b)(2)(i) shall be demonstrated following the procedures in paragraph (h)(1) of this section.
- (6) Initial and continuous compliance with the emission rate limits specified in § 63.1405(b)(2)(ii) and (iii) shall be demonstrated following the procedures of either paragraphs (c)(6)(i) or (ii) of this section.
  - (i) Continuous process vents meeting the emission rate limit using a closed vent system and a control device or recovery device or by routing emissions to a fuel gas system or process shall follow the procedures in 40 CFR part 63, subpart SS. When complying with the requirements of 40 CFR part 63, subpart SS, the following apply for purposes of this subpart:
    - (A) The requirements specified in of § 63.1405 (a)(2)(i) through (viii).
    - (B) When 40 CFR part 63, subpart SS refers to meeting a weight-percent emission reduction or ppmv outlet concentration requirement, meeting an emission rate limit in terms of kilograms of total organic HAP per hour shall also apply.
  - (ii) Continuous process vents meeting the emission rate limit by means other than those specified in paragraph (c)(6)(i) of this section shall follow the procedures specified in paragraph (h)(2) of this section.
- (7) Initial and continuous compliance with the alternative standards specified in § 63.1405(c) shall be demonstrated following the procedures in paragraph (f) of this section.

(d) *Initial and continuous compliance for aggregate batch vent streams.*

- (1) Initial compliance with the percent reduction standard specified in § 63.1408(a)(1)(ii) and (2)(ii) shall be demonstrated following the procedures for continuous process vents specified in paragraph (c)(1) of this section.
- (2) Initial compliance with § 63.1408(a)(1)(i) and (2)(i) (venting of emissions to a flare) shall be demonstrated following the procedures specified in paragraph (g) of this section.
- (3) Continuous compliance with the percent reduction standard specified in § 63.1408(a)(1)(ii) and (2)(ii) shall be demonstrated following the procedures for continuous process vents specified in paragraph (c)(3) of this section.
- (4) Continuous compliance with § 63.1408(a)(1)(i) and (a)(2)(i) (venting of emissions to a flare) shall be demonstrated following the continuous monitoring procedures specified in § 63.1415.
- (5) Initial and continuous compliance with the alternative standard specified in § 63.1408(b)(1) shall be demonstrated following the procedures in paragraph (f) of this section.
- (6) Initial and continuous compliance with the mass emission limit specified in § 63.1408(b)(2) shall be demonstrated following the procedures in paragraph (e)(2) of this section.

(e) **Initial and continuous compliance for batch process vents –**

- (1) **Compliance with percent reduction standards.** Owners or operators opting to comply with the percent reduction standards specified in § 63.1406(a)(1)(ii) and (a)(2)(ii) or § 63.1407(a)(2)(ii) and (a)(3)(ii) shall select portions of the batch process vent emissions (i.e., select batch emission episodes or portions of batch emission episodes) to be controlled such that the specified percent reduction is achieved for the batch cycle. Paragraphs (e)(1)(i) and (ii) of this section specify how the performance of a control device or control technology is to be determined. Paragraph (e)(1)(iii) of this section specifies how to demonstrate that the required percent emission reduction is achieved for the batch cycle.
  - (i) **Design evaluation.** The design evaluation shall comply with the provisions in paragraph (a)(3) of this section. The design evaluation shall include the value(s) and basis for the parameter monitoring level(s) required by § 63.1415. The design evaluation shall determine either of the following:
    - (A) **Each batch emission episode.** The control device efficiency for each batch emission episode that the owner or operator selects to control.
    - (B) **One or more representative batch emission episodes.** The control device efficiency for one or more batch emission episodes provided that the owner or operator demonstrates that the control device achieves the same or higher efficiency for all other batch emission episodes that the owner or operator selects to control.
  - (ii) **Performance test.** An owner or operator shall conduct performance tests following the procedures in paragraph (e)(1)(ii)(A) of this section, the procedures in paragraph (e)(1)(ii)(B) of this section, or a combination of the two procedures. Under paragraph (e)(1)(ii)(A) of this section, a performance test is conducted for each batch emission episode selected for control. Under paragraph (e)(1)(ii)(B) of this section, an owner or operator groups together several batch emission episodes and conducts a single performance test for the batch emission episode that is the most challenging, in terms of achieving emission reductions, for the control device or control technology; thereby demonstrating that the achieved emission reduction for the tested batch emission episode is the minimum control device or control technology

performance expected for each batch emission episode in the group. An owner or operator may use the concept provided by paragraph (e)(1)(ii)(B) of this section for several different groups of batch emission episodes.

- (A) **Testing each batch emission episode.** A performance test shall be performed for each batch emission episode, or portion thereof, that the owner or operator selects to control. Performance tests shall be conducted using the testing procedures specified in § 63.1414(a) and (b) and the following procedures:
- (1) Only one test (i.e., only one run) is required for each batch emission episode selected by the owner or operator for control.
  - (2) Except as specified in paragraph (e)(1)(ii)(A)(3) of this section, the performance test shall be conducted over the entire period of emissions selected by the owner or operator for control.
  - (3) An owner or operator may choose to test only those periods of the batch emission episode during which the emission rate for the entire batch emission episode can be determined or during which the organic HAP emissions are greater than the average emission rate of the batch emission episode. The owner or operator choosing either of these options shall develop an emission profile illustrating the emission rate (kilogram per unit time) over the entire batch emission episode, based on either process knowledge or test data, to demonstrate that test periods are representative. Examples of information that could constitute process knowledge include calculations based on material balances and process stoichiometry. Previous test results may be used to develop the emission profile provided the results are still relevant to the current batch process vent conditions. The emission profile shall be included in the site-specific test plan required by § 63.1417(h)(2).
  - (4) When choosing sampling sites using the methods specified in § 63.1414(a)(1), inlet sampling sites shall be located as specified in paragraphs (e)(1)(ii)(A)(4)(i) and (ii) of this section. Outlet sampling sites shall be located at the outlet of the control device prior to release to the atmosphere.
    - (i) The control device inlet sampling site shall be located at the exit from the batch unit operation after any condensers operating as process condensers and before any control device.
    - (ii) If a batch process vent 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 concentrations in all batch process vents and primary and secondary fuels introduced into the boiler or process heater.
- (B) **Testing only the most challenging batch emission episode.** Under this paragraph, an owner or operator groups together several batch emission episodes and conducts a single performance test for the batch emission episode that is the most challenging, in terms of achieving emission reductions, for the control device or control technology; thereby demonstrating that the achieved emission reduction for the tested batch emission episode is the minimum control device or control technology performance expected for each batch emission episode in the group. The owner or operator shall use the control device efficiency determined from the performance test for all the other batch emission

episodes in that group for purposes of paragraph (e)(2)(iii) of this section. Performance tests shall be conducted using the testing procedures specified in § 63.1414(a) and (b) and the following procedures:

- (1) The procedures specified in paragraphs (e)(2)(ii)(A)(2) through (4) of this section.
- (2) Develop an emission profile illustrating the emission rate (kilogram/unit time) for each period of emissions to be addressed by the performance test. The emission profile shall be based on either process knowledge or test data. Examples of information that could constitute process knowledge include calculations based on material balances and process stoichiometry. Previous test results may be used to develop the emission profile provided the results are still relevant to the current batch process vent conditions. The emission profile shall be included in the site-specific test plan required by § 63.1417(h)(2).
- (3) Provide rationale for why the control device efficiency for all the other batch emission episodes in the group will be greater than or equal to the control device efficiency achieved during the tested period of the most challenging batch emission episode in the group, as specified in the Notification of Compliance Status Report required by § 63.1417(e).

(iii) **Batch cycle percent reduction.** The percent reduction for the batch cycle for an individual reactor batch process vent and the overall percent reduction for the collection of non-reactor batch process vents within the affected source shall be determined using Equation 1 of this section and the control device efficiencies specified in paragraphs (e)(1)(iii)(A) through (C) of this section. All information used to calculate the batch cycle percent reduction for an individual reactor batch process vent, including a definition of the batch cycle identifying all batch emission episodes, shall be recorded as specified in § 63.1416 (d)(1)(ii). All information used to calculate the overall percent reduction for the collection of non-reactor batch process vents within the affected source, including a list of all batch emission episodes from the collection of non-reactor batch process vents within the affected source, shall be recorded as specified in § 63.1416 (d)(1)(ii). This information shall include identification of those batch emission episodes, or portions thereof, selected for control. This information shall include estimates of uncontrolled organic HAP emissions for those batch emission episodes, or portions thereof, that are not selected for control, determined as specified in paragraph (e)(2)(iii)(D) or (E) of this section.

$$PR = \frac{\sum_{i=1}^n E_{unc} + \sum_{i=1}^n E_{inlb.con} - \sum_{i=1}^n (1 - R) E_{inlb.con}}{\sum_{i=1}^n E_{unc} + \sum_{i=1}^n E_{inlb.con}} (100) \quad [Eq. 1]$$

Where:

PR = Percent reduction.

$E_{unc}$  = Mass rate of total organic HAP for uncontrolled batch emission episode i, kg/hr.



$E_{\text{inlet, con}}$  = Mass rate of total organic HAP for controlled batch emission episode  $i$  at the inlet to the control device, kg/hr.

$R$  = Control efficiency of control device as specified in paragraphs (e)(1)(iii)(A) through (e)(1)(iii)(C) of this section. The value of  $R$  may vary between batch emission episodes.

$n$  = Number of uncontrolled batch emission episodes, controlled batch emission episodes, and control devices. The value of  $n$  is not necessarily the same for these three items.

- (A) When conducting a performance test, the control efficiency of the control device shall be determined following the procedures in § 63.1414(b)(4).
  - (B) For combustion control devices listed in paragraphs (a)(2)(i)(A) and (B) of this section and for flares, the control efficiency in Equation 1 of this section shall be 98 percent.
  - (C) If a performance test is not required, the control efficiency shall be based on the design evaluation specified in paragraph (e)(1)(i) of this section.
  - (D) For batch process vents estimated through engineering assessment, as described in § 63.1414(f)(6), to emit less than 10 tons per year of uncontrolled organic HAP emissions, the owner or operator may use in Equation 1 of this section the emissions determined using engineering assessment or may determine organic HAP emissions using any of the procedures specified in § 63.1414(d).
  - (E) For batch process vents estimated through engineering assessment, as described in § 63.1414(d)(6), to emit 10 tons per year or greater of uncontrolled organic HAP emissions, organic HAP emissions shall be estimated following the procedures specified in § 63.1414(d).
  - (F) Owners or operators designating a condenser, sometimes operated as a process condenser, as a control device shall conduct inprocess recycling and follow the recordkeeping requirements specified in § 63.1416(d)(1)(vi).
- (iv) **Initial compliance with percent reduction standards.** Initial compliance with the percent reduction standards specified in § 63.1406(a)(1)(ii) and (2)(ii) and § 63.1407(a)(2)(ii) and (3)(ii) is achieved when the owner or operator demonstrates, following the procedures in paragraphs (e)(1)(i) through (iii) of this section, that the required percent reduction is achieved.
- (v) **Continuous compliance with percent reduction standards.** Continuous compliance with the percent reduction standards specified in § 63.1406(a)(1)(ii) and (2)(ii) and § 63.1407(a)(2)(ii) and (3)(ii) shall be demonstrated following the continuous monitoring procedures specified in § 63.1415.
- (2) **Compliance with mass emission limit standards.** Each owner or operator shall determine initial and continuous compliance with the mass emission limits specified in § 63.1406 (a)(1)(iii) and (a)(2)(iii), according to the following procedures, as appropriate:
- (i) If production at an affected source is exclusively non-solvent-based amino/phenolic resin or is exclusively solvent-based amino/phenolic resin, or an owner or operator chooses to meet the non-solvent-based emission limit, the owner or operator shall demonstrate initial and continuous compliance as follows:

- (A) **Initial compliance.** Initial compliance shall be based on the average of the first 6 monthly average emission rate data points. The 6-month average shall be compared to the mass emission limit specified in § 63.1406 (a)(1)(iii) and (a)(2)(iii), as appropriate.
- (B) **Continuous compliance.** For the first year of compliance, continuous compliance shall be based on a cumulative average monthly emission rate calculated each month based on the available monthly emission rate data points (e.g., 7 data points after 7 months of operation, 8 data points after 8 months of operation) beginning the first month after initial compliance is demonstrated. The first continuous compliance cumulative average monthly emission rate shall be calculated using the first 7 monthly average emission rate data points. After the first year of compliance, a 12-month rolling average monthly emission rate shall be calculated each month based on the previous 12 monthly emission rate data points. Continuous compliance shall be determined by comparing the cumulative average monthly emission rate or the 12-month rolling average monthly emission rate to the mass emission limit specified in § 63.1406 (a)(1)(iii) and (a)(2)(iii), as appropriate.
- (C) **Procedures to determine the monthly emission rate.** The monthly emission rate, kilograms of organic HAP per megagram of product, shall be determined at the end of each month using Equation 2 of this section:

$$ER = \frac{\sum_{i=1}^n E_i}{RP_m} \quad [\text{Eq. 2}]$$

Where:

ER = Emission rate of organic HAP from reactor batch process vents, kg of HAP/Mg product.

$E_i$  = Emission rate of organic HAP from reactor batch process vent  $i$  as determined using the procedures specified in paragraph (e)(2)(i)(C)(1) of this section, kg/month.

$RP_m$  = Amount of resin produced in one month as determined using the procedures specified in paragraph (e)(2)(i)(C)(4) of this section, Mg/month.

$n$  = Number of batch process vents.

- (1) The monthly emission rate of organic HAP, in kilograms per month, from an individual batch process vent ( $E_i$ ) shall be determined using Equation 3 of this section. Once organic HAP emissions for a batch cycle ( $E_{\text{cycle}i}$ ) have been estimated, as specified in either paragraph (e)(2)(i)(C)(2) or (3) of this section, the owner or operator may use the estimated organic HAP emissions ( $E_{\text{cycle}i}$ ) to determine  $E_i$  using Equation 3 of this section until the estimated organic HAP emissions ( $E_{\text{cycle}i}$ ) are no longer representative due to a process change or other reasons known to the owner or operator. If organic HAP emissions for a batch cycle ( $E_{\text{cycle}i}$ ) are determined to no

longer be representative, the owner or operator shall redetermine organic HAP emissions for the batch cycle ( $E_{\text{cycle}i}$ ) following the procedures in paragraph (e)(2)(i)(C)(2) or (3) of this section, as appropriate.

$$E_i = \sum_{j=1}^n N_{ij} \{E_{\text{cycle}i}\} \quad \text{[Eq. 3]}$$

Where:

$E_i$  = Monthly emissions from a batch process vent, kg/month.

$N_i$  = Number of type  $i$  batch cycles performed monthly, cycles/month.

$E_{\text{cycle}i}$  = Emissions from the batch process vent associated with a single type  $i$  batch cycle, as determined using the procedures specified in either paragraph (e)(2)(i)(C)(2) or (3) of this section, kg/batch cycle.

$n$  = Number of different types of batch cycles that cause the emission of organic HAP from the batch process vent.

- (2) For reactor batch process vents estimated through engineering assessment, as described in § 63.1414(d)(6), to emit less than 10 tons per year of uncontrolled organic HAP emissions, the owner or operator may use the emissions determined using engineering assessment in Equation 3 of this section or may determine organic HAP emissions using any of the procedures specified in § 63.1414(d). For reactor batch process vents estimated through engineering assessment, as described in § 63.1414(d)(6), to emit 10 tons per year or greater of uncontrolled organic HAP emissions, uncontrolled organic HAP emissions from the batch emission episodes making up the batch cycle shall be estimated following the procedures specified in § 63.1414(d).
- (3) For reactor batch process vents vented to a control device or control technology, controlled organic HAP emissions shall be determined as follows:
  - (i) Uncontrolled organic HAP emissions shall be determined following the procedures in paragraph (e)(2)(i)(C)(2) of this section.
  - (ii) Control device or control technology efficiency shall be determined using the procedures in paragraph (e)(1)(i) of this section for small control devices or the procedures in paragraph (e)(1)(ii) of this section for large control devices.
  - (iii) Controlled organic HAP emissions shall be determined by applying the control device or control technology efficiency, determined in paragraph (e)(2)(i)(C)(3)(ii) of this section, to the uncontrolled organic HAP emissions, determined in paragraph (e)(2)(i)(C)(3)(i) of this section.
- (4) The rate of resin produced,  $RP_M$  (Mg/month), shall be determined based on production records certified by the owner or operator to represent actual production for the month. A sample of the records selected by the owner or operator for this purpose shall be provided to the Administrator in the Precompliance Report as required by § 63.1417(d).

- (ii) If production at an affected source reflects a mix of solvent-based and non-solvent-based resin and the owner or operator does not choose to meet the non-solvent-based emission limit specified in § 63.1406 (a)(1)(iii) or (a)(2)(iii), as applicable, the owner or operator shall demonstrate initial and continuous compliance as follows:

- (A) **Procedures for determining a site-specific emission limit.** A site-specific emission limit shall be determined using Equation 4 of this section.

$$SSEL = \frac{(MG_s \bullet EL_s) + (MG_{ns} \bullet EL_{ns})}{MG_s + MG_{ns}} \quad [Eq. 4]$$

Where:

SSEL = Site specific emission limit, kg of organic HAP/Mg of product.

MGs = Megagrams of solvent-based resin product produced, megagrams.

MGns = Megagrams of non-solvent-based resin product produced, megagrams.

ELs = Emission limit for solvent-based resin product, kg organic HAP/Mg solvent-based resin product.

ELns = Emission limit for non-solvent-based resin product, kg organic HAP/Mg non-solvent-based resin product.

- (B) **Initial compliance.** For purposes of determining initial compliance, the site-specific emission limit shall be based on production for the first 6 months beginning January 20, 2000 or the first 6 months after initial start-up, whichever is later. Using the site-specific emission limit, initial compliance shall be demonstrated using the procedures in paragraph (e)(2)(i)(A) of this section, as appropriate.
- (C) **Continuous compliance.** For purposes of determining continuous compliance for the period of operation starting at the beginning of the 7th month and ending after the 12th month, the site-specific emission limit shall be determined each month based on production for the cumulative period. For purposes of determining continuous compliance after the first year of production, the site-specific emission limit shall be determined each month based on production for a 12-month rolling period. Using the site-specific emission limit, continuous compliance shall be demonstrated using the procedures in paragraph (e)(2)(i)(B) of this section, as appropriate.
- (3) **Compliance by venting to a flare.** Initial compliance with the standards specified in § 63.1406(a)(1)(i) and (a)(2)(i) and § 63.1407(a)(2)(i) and (a)(3)(i) shall be demonstrated following the procedures specified in paragraph (g) of this section. Continuous compliance with these standards shall be demonstrated following the continuous monitoring procedures specified in § 63.1415.
- (4) **Compliance with alternative standard.** Initial and continuous compliance with the alternative standard specified in §§ 63.1406(b) and 63.1407(b)(1) shall be demonstrated following the procedures in paragraph (f) of this section.

(f) **Compliance with alternative standard.** Initial and continuous compliance with the alternative standards in §§ 63.1404(b), 63.1405(c), 63.1406(b), 63.1407(b)(1), and 63.1408(b)(1) are demonstrated when the daily average outlet organic HAP concentration is 20 ppmv or less when using a combustion control device or 50 ppmv or less when using a non-combustion control device. To demonstrate initial and continuous compliance, the owner or operator shall follow the test method specified in § 63.1414(a)(6) and shall be in compliance with the monitoring provisions in § 63.1415(e) no later than the initial compliance date and on each day thereafter.

(g) **Flare compliance demonstrations.** Notwithstanding any other provision of this subpart, if an owner or operator of an affected source uses a flare to comply with any of the requirements of this subpart, the owner or operator shall comply with paragraphs (g)(1) through (3) of this section. When using a flare to comply, the owner or operator is not required to conduct a performance test to determine percent emission reduction or outlet organic HAP concentration. If a compliance demonstration has been conducted previously for a flare, using the techniques specified in paragraphs (g)(1) through (3) of this section, that compliance demonstration may be used to satisfy the requirements of this paragraph if either no deliberate process changes have been made since the compliance demonstration, or the results of the compliance demonstration reliably demonstrate compliance despite process changes.

(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.

(h) **Continuous process vent compliance at existing sources.**

(1) Each owner or operator complying with the mass emission limit specified in § 63.1405(b)(2)(i) shall determine initial compliance as specified in paragraph (h)(1)(i) of this section and continuous compliance as specified in paragraph (h)(1)(ii) of this section.

(i) **Initial compliance.** Initial compliance shall be determined by comparing the results of the performance test or design evaluation, as specified in paragraph (a)(1) of this section, to the mass emission limit specified in § 63.1405(b)(2)(i).

(ii) **Continuous compliance.** Continuous compliance shall be based on the daily average emission rate calculated for each operating day. The first continuous compliance average daily emission rate shall be calculated using the first 24-hour period or otherwise-specified operating day after the compliance date. Continuous compliance shall be determined by comparing the daily average emission rate to the mass emission limit specified in § 63.1405(b)(2)(i).

(2) As required by paragraph (c)(6)(ii) of this section, each owner or operator complying with the emission rate limits specified in § 63.1405(b)(2)(ii) and (iii), as applicable, by means other than those specified in paragraph (c)(6)(i) of this section, shall determine initial compliance as specified in paragraph (h)(2)(i) of this section and continuous compliance as specified in paragraph (h)(2)(ii) of this section.

(i) **Initial compliance.** Initial compliance shall be determined by comparing the results of the performance test or design evaluation, as specified in paragraph (a)(1) of this section, to the emission rate limits specified in § 63.1405(b)(2)(ii) and (iii), as applicable.

(ii) **Continuous compliance.** Continuous compliance shall be based on the hourly average emission rate calculated for each operating day. The first continuous compliance average hourly emission rate shall be calculated using the first 24-hour period or otherwise-specified operating day after the compliance date. Continuous compliance shall be determined by comparing the average hourly emission rate to the emission rate limit specified in § 63.1405(b)(2)(ii) or (iii), as applicable.

(3) **Procedures to determine continuous compliance with the mass emission limit specified in § 63.1405(b)(2)(i).**

(i) The daily emission rate, kilograms of organic HAP per megagram of product, shall be determined for each operating day using Equation 5 of this section:

$$ER = \frac{E_i}{RP_m} \quad [\text{Eq.5}]$$

Where:

ER = Emission rate of organic HAP from continuous process vent, kg of HAP/Mg product.

$E_i$  = Emission rate of organic HAP from continuous process vent  $i$  as determined using the procedures specified in paragraph (h)(3)(ii) of this section, kg/day.

$RP_m$  = Amount of resin produced in one month as determined using the procedures specified in paragraph (h)(3)(iii) of this section, Mg/day.

(ii) The daily emission rate of organic HAP, in kilograms per day, from an individual continuous process vent ( $E_i$ ) shall be determined. Once organic HAP emissions have been estimated, as specified in paragraph (h)(3)(ii)(A) of this section for uncontrolled continuous process vents or paragraphs (h)(3)(ii)(A) and (B) of this section for continuous process vents vented to a control device or control technology, the owner or operator may use the estimated organic HAP emissions ( $E_i$ ) until the estimated organic HAP emissions are no longer representative due to a process change or other reason known to the owner or operator. If organic HAP emissions ( $E_i$ ) are determined to no longer be representative, the owner or operator shall redetermine organic HAP emissions for the continuous process vent following the procedures in paragraph (h)(3)(ii)(A) of this section for uncontrolled continuous process vents or paragraphs (h)(3)(ii)(A) and (B) of this section for continuous process vents vented to a control device or control technology.

(A) For continuous process vents estimated through engineering assessment, as described in § 63.1414(d)(10), to emit less than 10 tons per year of uncontrolled organic HAP emissions, the owner or operator may use the emissions determined using engineering assessment in Equation 5 of this section or may determine organic HAP emissions using the procedures specified in paragraph (a)(1)(i) of this section. For continuous process vents estimated through engineering assessment, as described in § 63.1414(d)(10), to emit 10 tons per year or greater of uncontrolled organic HAP emissions, uncontrolled organic HAP emissions shall be estimated following the procedures specified in paragraph (a)(1)(i) of this section.

- (B) For continuous process vents vented to a control device or control technology, controlled organic HAP emissions shall be determined as follows:
- (1) Uncontrolled organic HAP emissions shall be determined following the procedures in paragraph (h)(3)(ii)(A) of this section.
  - (2) Control device or control technology efficiency shall be determined using the procedures in paragraph (a)(1)(i) of this section for large control devices or the procedures in paragraph (a)(1)(ii) of this section for small control devices.
  - (3) Controlled organic HAP emissions shall be determined by applying the control device or control technology efficiency, determined in paragraph (h)(3)(ii)(B)(2) of this section, to the uncontrolled organic HAP emissions, determined in paragraph (h)(3)(ii)(B)(1) of this section.
- (iii) The rate of resin produced,  $RP_M$  (Mg/day), shall be determined based on production records certified by the owner or operator to represent actual production for the day. A sample of the records selected by the owner or operator for this purpose shall be provided to the Administrator in the Precompliance Report as required by § 63.1417(d).
- (4) *Procedures to determine continuous compliance with the emission rate limit specified in § 63.1405(b)(2)(ii) or (iii).*
- (i) The hourly emission rate, kilograms of organic HAP per hour, shall be determined for each hour during the operating day using Equation 6 of this section:

$$E_H = K_2 \left( \sum_{j=1}^n C_j M_j \right) Q_S \quad [\text{Eq.6}]$$

Where:

$E_H$  = Hourly emission rate of organic HAP in the sample, kilograms per hour.

$K_2$  = Constant,  $2.494 \times 10^{-6}$  (parts per million)<sup>-1</sup> (gram-mole per standard cubic meter) (kilogram/gram) (minutes/hour), where standard temperature for (gram-mole per standard cubic meter) is 20 °C.

$n$  = Number of components in the sample.

$C_j$  = Organic HAP concentration on a dry basis of organic compound  $j$  in parts per million as determined by the methods specified in paragraph (h)(4)(ii) of this section.

$M_j$  = Molecular weight of organic compound  $j$ , gram/gram-mole.

$Q_S$  = Continuous process vent flow rate, dry standard cubic meters per minute, at a temperature of 20 °C, as determined by the methods specified in paragraph (h)(4)(ii) of this section.

- (ii) The average hourly emission rate, kilograms of organic HAP per hour, shall be determined for each operating day using Equation 7 of this section:

$$AE = \frac{\sum_{i=1}^n E_H}{n} \quad [\text{Eq.7}]$$

Where:



AE = Average hourly emission rate per operating day, kilograms per hour.

n = Number of hours in the operating day.

(ii) Continuous process vent flow rate and organic HAP concentration shall be determined using the procedures specified in § 63.1414(a), or by using the engineering assessment procedures in paragraph (h)(4)(iii) of this section.

(iii) **Engineering assessment.** For the purposes of determining continuous compliance with the emission rate limit specified in § 63.1405(b)(2)(ii) or (iii) using Equations 6 and 7, engineering assessments may be used to determine continuous process vent flow rate and organic HAP concentration. An engineering assessment includes, but is not limited to, the following examples:

(A) Previous test results, provided the tests are representative of current operating practices.

(B) Bench-scale or pilot-scale test data representative of the process under representative operating conditions.

(C) Maximum volumetric flow rate or organic HAP concentration specified or implied within a permit limit applicable to the continuous 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, the following:

(1) Estimation of maximum organic HAP concentrations based on process stoichiometry material balances or saturation conditions; and

(2) Estimation of maximum volumetric flow rate based on physical equipment design, such as pump or blower capacities.

(i) **Deviations.** Paragraphs (i)(1) through (4) of this section describe deviations from the emission limits, the operating limits, the work practice standards, and the emission standard, respectively. Paragraph (i)(5) of this section describes situations that are not deviations. Paragraph (i)(6) of this section describes periods that are excluded from compliance determinations.

(1) **Deviations from the emission limit.** The following are deviations from the emission limit:

(i) Exceedance of the condenser outlet gas temperature limit (i.e., having an average value higher than the established maximum level) monitored according to the provisions of § 63.1415(b)(3);

(ii) Exceedance of the outlet concentration (i.e., having an average value higher than the established maximum level) monitored according to the provisions of § 63.1415(b)(8);

(iii) Exceedance of the mass emission limit (i.e., having an average value higher than the specified limit) monitored according to the provisions of paragraph (e)(2) of this section for batch process vents and according to the provisions of paragraph (h)(1) of this section for continuous process vents;

(iv) Exceedance of the organic HAP outlet concentration limit (i.e., having an average value higher than the specified limit) monitored according to the provisions of § 63.1415(e); and



- (v) Exceedance of the emission rate limit (*i.e.*, having an average value higher than the specified limit) determined according to the provisions of paragraph (h)(2) of this section.
- (2) ***Deviations from the operating limit.*** Exceedance of the parameters monitored according to § 63.1415(b)(1), (b)(2), and (b)(4) through (7) are considered deviations from the operating limit. An exceedance of the monitored parameter has occurred if:
  - (i) The parameter, averaged over the operating day or block, is below a minimum value established during the initial compliance demonstration; or
  - (ii) The parameter, averaged over the operating day or block, is above the maximum value established during the initial compliance demonstration.
- (3) ***Deviations from the work practice standard.*** If all flames at the pilot light of a flare are absent, there has been a deviation from the work practice standard.
- (4) ***Deviation from the emission standard.*** If monitoring data are insufficient, as described in paragraphs (i)(4)(i) through (iii) of this section, there has been a deviation from the emission standard.
  - (i) The period of control device or control technology operation is 4 hours or greater in an operating day, and monitoring data are insufficient to constitute a valid hour of data, as defined in paragraph (i)(4)(iii) of this section, for at least 75 percent of the operating hours;
  - (ii) The period of control device or control technology 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; and
  - (iii) Monitoring data are insufficient to constitute a valid hour of data, as used in paragraphs (i)(4)(i) and (ii) of this section, if measured values are unavailable for any of the 15-minute periods within the hour. For data compression systems approved under § 63.1417(k)(3), monitoring data are insufficient to calculate a valid hour of data if there are less than four data measurements made during the hour.
- (5) ***Situations that are not deviations.*** If any of the situations listed in paragraphs (i)(5)(i) or (ii) of this section occur, such situations shall not be considered to be deviations.
  - (i) Monitoring data cannot be collected during monitoring device calibration check or monitoring device malfunction; or
  - (ii) Monitoring data are not collected during periods of nonoperation of the affected source or portion thereof (resulting in cessation of the emissions to which the monitoring applies).
- (6) ***Periods not considered to be part of the period of control or recovery device operation.*** The periods listed in paragraphs (i)(6)(i) and (ii) of this section are not considered to be part of the period of control or recovery device operation for purposes of determining averages or periods of control device or control technology operation.
  - (i) Monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments; or
  - (ii) Periods of nonoperation of the affected source (or portion thereof), resulting in cessation of the emissions to which the monitoring applies.

[65 FR 3290, Jan. 20, 2000, as amended at 65 FR 8768, Feb. 22, 2000; 71 FR 20460, Apr. 20, 2006; 79 FR 60931, Oct. 8, 2014; 83 FR 51853, Oct. 15, 2018]

## § 63.1414 Test methods and emission estimation equations.

- (a) **Test methods.** When required to conduct a performance test, the owner or operator shall use the test methods specified in paragraphs (a)(1) through (6) of this section, except where another section of this subpart requires either the use of a specific test method or the use of requirements in another subpart containing specific test method requirements.
- (1) Method 1 or 1A, 40 CFR part 60, appendix A, shall be used for selection of the sampling sites if the flow measuring device is a pitot tube, except that references to particulate matter in Method 1A do not apply for the purposes of this subpart. No traverse is necessary when Method 2A or 2D, 40 CFR part 60, appendix A is used to determine gas stream volumetric flow rate.
  - (2) Method 2, 2A, 2C, or 2D, 40 CFR part 60, appendix A, is used for velocity and volumetric flow rates.
  - (3) Method 3, 40 CFR part 60, appendix A, is used for gas analysis.
  - (4) Method 4, 40 CFR part 60, appendix A, is used for stack gas moisture.
  - (5) The following methods shall be used to determine the organic HAP concentration.
    - (i) Method 316 or Method 320, 40 CFR part 60, appendix A, shall be used to determine the concentration of formaldehyde.
    - (ii) Method 18, 40 CFR part 60, appendix A, shall be used to determine the concentration of all organic HAP other than formaldehyde.
    - (iii) Method 308, 40 CFR part 60, appendix A, may be used as an alternative to Method 18 to determine the concentration of methanol.
  - (6) When complying with the alternative standard, as specified in § 63.1413(f), the owner or operator shall use a Fourier Transform Infrared Spectroscopy (FTIR) instrument following Method PS-15, 40 CFR part 60, appendix B.
- (b) **Batch process vent performance testing procedures —**
- (1) **Average batch vent flow rate determination.** The average batch vent flow rate for a batch emission episode shall be calculated using Equation 1 of this section:

$$AFR_{\text{episode}} = \frac{\sum_{i=1}^n FR_i}{n} \quad [\text{Eq. 1}]$$

Where:

$AFR_{\text{episode}}$  = Average batch vent flow rate for the batch emission episode, scmm.

$FR_i$  = Volumetric flow rate for individual measurement  $i$ , taken every 15 minutes using the procedures in paragraph (a)(2) of this section, scmm.

$n$  = Number of flow rate measurements taken during the batch emission episode.

- (2) **Average batch vent concentration determination using an integrated sample.** If an integrated sample is taken over the entire batch emission episode to determine the average batch vent concentration of total organic HAP, organic HAP emissions shall be calculated using Equation 2 of this section:

$$E_{\text{episode}} = K \left[ \sum_{i=1}^n (C_i)(M_i) \right] AFR (T_h) \quad [\text{Eq. 2}]$$

Where:

$E_{\text{episode}}$  = Emissions, kg/episode.

$K$  = Constant,  $2.494 \times 10^{-6}$  (ppmv)<sup>-1</sup> (gm-mole/scm) (kg/gm) (min/hr), where standard temperature is 20 °C.

$C_j$  = Average batch vent concentration of sample organic HAP component  $j$  of the gas stream, dry basis, ppmv.

$M_j$  = Molecular weight of sample organic HAP component  $j$  of the gas stream, gm/gm-mole.

$AFR$  = Average batch vent flow rate of gas stream, dry basis, scmm.

$T_h$  = Hours/episode.

$n$  = Number of organic HAP in stream.

- (3) **Average batch vent concentration determination using grab samples.** If grab samples are taken to determine the average batch vent concentration of total organic HAP, organic HAP emissions shall be calculated as follows:

- (i) For each measurement point, the emission rate shall be calculated using Equation 3 of this section:

$$E_{\text{point}} = K \left[ \sum_{i=1}^n C_i M_i \right] FR \quad [\text{Eq. 3}]$$

Where:

$E_{\text{point}}$  = Emission rate for individual measurement point, kg/hr.

$K$  = Constant,  $2.494 \times 10^{-6}$  (ppmv)<sup>-1</sup> (gm-mole/scm) (kg/gm) (min/hr), where standard temperature is 20 °C.

$C_j$  = Concentration of sample organic HAP component  $j$  of the gas stream, dry basis, ppmv.

$M_j$  = Molecular weight of sample organic HAP component  $j$  of the gas stream, gm/gm-mole.

$FR$  = Flow rate of gas stream for the measurement point, dry basis, scmm.

$n$  = Number of organic HAP in stream.

- (ii) The organic HAP emissions per batch emission episode shall be calculated using Equation 4 of this section:

$$E_{\text{episode}} = (\text{DUR}) \left[ \sum_{i=1}^n \frac{E_i}{n} \right] \quad |\text{Eq. 4}|$$

Where:

$E_{\text{episode}}$  = Emissions, kg/episode.

DUR = Duration of the batch emission episode, hr/episode.

$E_i$  = Emissions for measurement point  $i$ , kg/hr.

$n$  = Number of measurements.

- (4) **Control device efficiency determination for a batch emission episode.** The control efficiency for the control device shall be calculated using Equation 5 of this section:

$$R = \frac{\sum_{i=1}^n E_{\text{inlet},i} - \sum_{i=1}^n E_{\text{outlet},i}}{\sum_{i=1}^n E_{\text{inlet},i}} (100) \quad |\text{Eq. 5}|$$

Where:

$R$  = Control efficiency of control device, percent.

$E_{\text{inlet}}$  = Mass rate of total organic HAP for batch emission episode  $i$  at the inlet to the control device as calculated under paragraph (b)(2) or (b)(3) of this section, kg/episode.

$E_{\text{outlet}}$  = Mass rate of total organic HAP for batch emission episode  $i$  at the outlet of the control device, as calculated under paragraph (b)(2) or (b)(3) of this section, kg/episode.

$n$  = Number of batch emission episodes in the batch cycle selected to be controlled.

- (c) **Percent oxygen correction for combustion control devices.** If the control device is a combustion device, total organic HAP concentrations shall be corrected to 3 percent oxygen when supplemental combustion air is used to combust the emissions. The integrated sampling and analysis procedures of Method 3B, 40 CFR part 60, appendix A, shall be used to determine the actual oxygen concentration (% $O_{20}$ ). The samples shall be taken during the same time that the total organic HAP samples are taken. The concentration corrected to 3 percent oxygen ( $C_c$ ) shall be computed using Equation 6 of this section:

$$C_c = C_m \left( \frac{17.9}{20.9 - \%O_{2d}} \right) \quad [\text{Eq. 6}]$$

Where:

$C_c$  = Concentration of total organic HAP corrected to 3 percent oxygen, dry basis, ppmv.

$C_m$  = Total concentration of TOC in vented gas stream, average of samples, dry basis, ppmv.

$\%O_{2d}$  = Concentration of oxygen measured in vented gas stream, dry basis, percent by volume.

(d) **Uncontrolled organic HAP emissions.** Uncontrolled organic HAP emissions for individual reactor batch process vents or individual non-reactor batch process vents shall be determined using the procedures specified in paragraphs (d)(1) through (8) of this section. To estimate organic HAP emissions from a batch emissions episode, owners or operators may use either the emissions estimation equations in paragraphs (d)(1) through (4) of this section, or direct measurement as specified in paragraph (d)(5) of this section. Engineering assessment may be used to estimate organic HAP emissions from a batch emission episode only under the conditions described in paragraph (d)(6) of this section. In using the emissions estimation equations in paragraphs (d)(1) through (4) of this section, individual component vapor pressure and molecular weight may be obtained from standard references. Methods to determine individual HAP partial pressures in multicomponent systems are described in paragraph (d)(9) of this section. Other variables in the emissions estimation equations may be obtained through direct measurement, as defined in paragraph (d)(5) of this section; through engineering assessment, as defined in paragraph (d)(6)(ii) of this section; by process knowledge; or by any other appropriate means. Assumptions used in determining these variables shall be documented as specified in § 63.1417. Once organic HAP emissions for the batch emission episode have been determined using either the emissions estimation equations, direct measurement, or engineering assessment, organic HAP emissions from a single batch cycle shall be calculated in accordance with paragraph (d)(7) of this section, and annual organic HAP emissions from the batch process vent shall be calculated in accordance with paragraph (d)(8) of this section.

(1) **Emissions from purging of empty vessels.** Organic HAP emissions from the purging of an empty vessel shall be calculated using Equation 7 of this section. Equation 7 of this section does not take into account evaporation of any residual liquid in the vessel:

$$E_{\text{episode}} = \frac{(V_{\text{ves}} \times P \times MW_{\text{avg}})}{RT} (1 - 0.37^m) \quad [\text{Eq. 7}]$$

Where:

$E_{\text{episode}}$  = Emissions, kg/episode.

$V_{\text{ves}}$  = Volume of vessel, m<sup>3</sup>.

$P$  = Total organic HAP partial pressure, kPa.

$MW_{wavg}$  = Weighted average molecular weight of organic HAP in vapor, determined in accordance with paragraph (d)(4)(i)(D) of this section, kg/kmol.

$R$  = Ideal gas constant,  $8.314 \text{ m}^3 \cdot \text{kPa} / \text{kmol} \cdot \text{K}$ .

$T$  = Temperature of vessel vapor space, K.

$m$  = Number of volumes of purge gas used.

- (2) **Emissions from purging of filled vessels.** Organic HAP emissions from the purging of a filled vessel shall be calculated using Equation 8 of this section:

$$E_{\text{episode}} = \frac{(y)(V_{dr})(P^2)(MW_{wavg})}{RT \left( P - \sum_{i=1}^n P_i x_i \right)} (T_m) \quad [\text{Eq. 8}]$$

Where:

$E_{\text{episode}}$  = Emissions, kg/episode.

$y$  = Saturated mole fraction of all organic HAP in vapor phase.

$V_{dr}$  = Volumetric gas displacement rate,  $\text{m}^3 / \text{min}$ .

$P$  = Pressure in vessel vapor space, kPa.

$MW_{wavg}$  = Weighted average molecular weight of organic HAP in vapor, determined in accordance with paragraph (d)(4)(i)(D) of this section, kg/kmol.

$R$  = Ideal gas constant,  $8.314 \text{ m}^3 \cdot \text{kPa} / \text{kmol} \cdot \text{K}$ .

$T$  = Temperature of vessel vapor space, K.

$P_i$  = Vapor pressure of individual organic HAP  $i$ , kPa.

$x_i$  = Mole fraction of organic HAP  $i$  in the liquid.

$n$  = Number of organic HAP in stream.

$T_m$  = Minutes/episode.

- (3) **Emissions from vapor displacement.** Organic HAP emissions from vapor displacement due to transfer of material into or out of a vessel shall be calculated using Equation 9 of this section:

$$E_{\text{episode}} = \frac{(y)(V)P(MW_{\text{avg}})}{RT} \quad [\text{Eq. 9}]$$

Where:

$E_{\text{episode}}$  = Emissions, kg/episode.

$y$  = Saturated mole fraction of all organic HAP in vapor phase.

$V$  = Volume of gas displaced from the vessel,  $\text{m}^3$ .

$P$  = Pressure in vessel vapor space, kPa.

$MW_{\text{avg}}$  = Weighted average molecular weight of organic HAP in vapor, determined in accordance with paragraph (d)(4)(i)(D) of this section, kg/kmol.

$R$  = Ideal gas constant,  $8.314 \text{ m}^3 \cdot \text{kPa}/\text{kmol} \cdot \text{K}$ .

$T$  = Temperature of vessel vapor space, K.

(4) **Emissions from heating of vessels.** Organic HAP emissions caused by the heating of a vessel shall be calculated using the procedures in either paragraph (d)(4)(i), (ii), or (iii) of this section, as appropriate.

(i) If the final temperature to which the vessel contents is heated is lower than 50 K below the boiling point of the HAP in the vessel, then organic HAP emissions shall be calculated using the equations in paragraphs (d)(4)(i)(A) through (D) of this section.

(A) Organic HAP emissions caused by heating of a vessel shall be calculated using Equation 10 of this section. The assumptions made for this calculation are atmospheric pressure of 760 millimeters of mercury (mm Hg) and the displaced gas is always saturated with volatile organic compounds (VOC) vapor in equilibrium with the liquid mixture:

$$E_{\text{episode}} = \left[ \frac{\sum_{i=1}^n (P_i) T_1}{101.325 - \sum_{i=1}^n (P_i) T_1} + \frac{\sum_{i=1}^n (P_i) T_2}{101.325 - \sum_{i=1}^n (P_i) T_2} \right] \cdot (\Delta \eta) \left[ \frac{(MW_{\text{avg}, T_1} + MW_{\text{avg}, T_2})}{2} \right] \quad [\text{Eq. 10}]$$

Where:

$E_{\text{episode}}$  = Emissions, kg/episode.

$(P_i)_{T1}, (P_i)_{T2}$  = Partial pressure (kPa) of each organic HAP  $i$  in the vessel headspace at initial ( $T1$ ) and final ( $T2$ ) temperature.

$n$  = Number of organic HAP in stream.

$\Delta\eta$  = Number of kilogram-moles (kg-moles) of gas displaced, determined in accordance with paragraph (d)(4)(i)(B) of this section.

101.325 = Constant, kPa.

$(MW_{WAVG, T1}), (MW_{WAVG, T2})$  = Weighted average molecular weight of total organic HAP in the displaced gas stream, determined in accordance with paragraph (d)(4)(i)(D) of this section, kg/kmol.

(B) The moles of gas displaced,  $\Delta$ , is calculated using Equation 11 of this section:

$$\Delta\eta = \frac{V_{fs}}{R} \left[ \left( \frac{Pa_1}{T_1} \right) - \left( \frac{Pa_2}{T_2} \right) \right] \quad [\text{Eq. 11}]$$

Where:

$\Delta\eta$  = Number of kg-moles of gas displaced.

$V_{fs}$  = Volume of free space in the vessel,  $m^3$ .

$R$  = Ideal gas constant,  $8.314 \text{ m}^3 \cdot \text{kPa} / \text{kmol} \cdot \text{K}$ .

$Pa_1$  = Initial noncondensable gas partial pressure in the vessel, kPa.

$Pa_2$  = Final noncondensable gas partial pressure in the vessel, kPa.

$T_1$  = Initial temperature of vessel, K.

$T_2$  = Final temperature of vessel, K.

(C) The initial and final pressure of the noncondensable gas in the vessel shall be calculated using Equation 12 of this section:

$$Pa = 101.325 - \sum_{i=1}^n (P_i)T \quad [\text{Eq. 12}]$$

Where:

$Pa$  = Initial or final partial pressure of noncondensable gas in the vessel headspace, kPa.

101.325 = Constant, kPa.



$(P_i)_T$  = Partial pressure of each organic HAP  $i$  in the vessel headspace, kPa, at the initial or final temperature ( $T_1$  or  $T_2$ ).

$n$  = Number of organic HAP in stream.

- (D) The weighted average molecular weight of organic HAP in the displaced gas,  $MW_{wavg}$ , shall be calculated using Equation 13 of this section:

$$MW_{wavg} = \frac{\sum_{i=1}^n (\text{mass of } C_i) (\text{molecular weight of } C_i)}{\sum_{i=1}^n (\text{mass of } C_i)} \quad [\text{Eq. 13}]$$

Where:

$C$  = Organic HAP component

$n$  = Number of organic HAP components in stream.

- (ii) If the vessel contents are heated to a temperature greater than 50 K below the boiling point, then organic HAP emissions from the heating of a vessel shall be calculated as the sum of the organic HAP emissions calculated in accordance with paragraphs (d)(4)(ii)(A) and (B) of this section.
- (A) For the interval from the initial temperature to the temperature 50 K below the boiling point, organic HAP emissions shall be calculated using Equation 10 of this section, where  $T_2$  is the temperature 50 K below the boiling point.
- (B) For the interval from the temperature 50 K below the boiling point to the final temperature, organic HAP emissions shall be calculated as the summation of emissions for each 5 K increment, where the emissions for each increment shall be calculated using Equation 10 of this section.
- (1) If the final temperature of the heatup is at or lower than 5 K below the boiling point, the final temperature for the last increment shall be the final temperature for the heatup, even if the last increment is less than 5 K.
- (2) If the final temperature of the heatup is higher than 5 K below the boiling point, the final temperature for the last increment shall be the temperature 5 K below the boiling point, even if the last increment is less than 5 K.
- (3) If the vessel contents are heated to the boiling point and the vessel is not operating with a condenser, the final temperature for the final increment shall be the temperature 5 K below the boiling point, even if the last increment is less than 5 K.
- (iii) If the vessel is operating with a condenser, and the vessel contents are heated to the boiling point, the process condenser, as defined in § 63.1402, is considered part of the process. Organic HAP emissions shall be calculated as the sum of emissions calculated using Equation

10 of this section, which calculates organic HAP emissions due to heating the vessel contents to the temperature of the gas exiting the condenser, and emissions calculated using Equation 9 of this section, which calculates emissions due to the displacement of the remaining saturated noncondensable gas in the vessel. The final temperature in Equation 10 of this section shall be set equal to the exit gas temperature of the condenser. Equation 9 of this section shall be used as written below in Equation 14 of this section, using free space volume, and T is set equal to the condenser exit gas temperature:

$$E_{\text{episode}} = \frac{(y)(V_{\text{fs}})XP(MW_{\text{avg}})}{RT} \quad [\text{Eq. 14}]$$

Where:

$E_{\text{episode}}$  = Emissions, kg/episode.

y = Saturated mole fraction of all organic HAP in vapor phase.

$V_{\text{fs}}$  = Volume of the free space in the vessel,  $\text{m}^3$ .

P = Pressure in vessel vapor space, kPa.

$MW_{\text{avg}}$  = Weighted average molecular weight of organic HAP in vapor, determined in accordance with paragraph (d)(4)(i)(D) of this section, kg/kmol.

R = Ideal gas constant,  $8.314 \text{ m}^3 \cdot \text{kPa} / \text{kmol} \cdot \text{K}$ .

T = Temperature of condenser exit stream, K.

(5) **Emissions determined by direct measurement.** The owner or operator may estimate annual organic HAP emissions for a batch emission episode by direct measurement. The test methods and procedures specified in paragraphs (a) and (b) of this section shall be used for direct measurement. If direct measurement is used, the owner or operator shall perform a test for the duration of a representative batch emission episode. Alternatively, the owner or operator may perform a test during only those periods of the batch emission episode for which the emission rate for the entire episode can be determined or for which the emissions are greater than the average emission rate of the batch emission episode. The owner or operator choosing either of these options shall develop an emission profile illustrating the emission rate (kilogram per unit time) over the entire batch emission episode, based on either process knowledge or test data, to demonstrate that test periods are representative. Examples of information that could constitute process knowledge include calculations based on material balances and process stoichiometry. Previous test results may be used to develop the emission profile provided the results are still relevant to the current batch process vent conditions. The emission profile shall be included in the site-specific test plan required by § 63.1417(h)(2).

(6) **Emissions determined by engineering assessment.** To use engineering assessment to estimate organic HAP emissions from a batch emission episode, owners or operators shall comply with paragraphs (d)(6)(i) through (iii) of this section.

- (i) If the criteria specified in paragraphs (d)(6)(i)(A), (B), and (C) of this section are met for a specific batch emission episode, the owner or operator may use engineering assessment to estimate organic HAP emissions from that batch emission episode.
  - (A) Previous test data, where the measurement of organic HAP emissions was an outcome of the test, that show a greater than 20 percent discrepancy between the test value and the value estimated using the applicable equations in paragraphs (d)(1) through (4) of this section. Paragraphs (d)(6)(i)(A)(1) and (2) of this section describe test data that will be acceptable under this paragraph.
    - (1) Test data for the batch emission episode obtained during production of the product for which the demonstration is being made.
    - (2) Test data obtained for a batch emission episode from another process train where the test data were obtained during production of the product for which the demonstration is being made. Test data from another process train may be used only if the owner or operator can demonstrate that the data are representative of the batch emission episode for which the demonstration is being made, taking into account the nature, size, operating conditions, production rate, and sequence of process steps (e.g., reaction, distillation, etc.) of the equipment in the other process train.
  - (B) Previous test data for the batch emission episode with the highest organic HAP emissions on a mass basis where the measurement of organic HAP emissions was an outcome of the test, where data were obtained during the production of the product for which the demonstration is being made, and where the data show a greater than 20 percent discrepancy between the test value and the value estimated using the applicable equations in paragraphs (d)(1) through (4) of this section. If the criteria in this paragraph are met, then engineering assessment may be used for all batch emission episodes associated with that batch cycle for the batch unit operation.
  - (C) The owner or operator has requested and been granted approval to use engineering assessment to estimate organic HAP emissions from a batch emissions episode. The request to use engineering assessment to estimate organic HAP emissions from a batch emissions episode shall contain sufficient information and data to demonstrate to the Administrator that engineering assessment is an accurate means of estimating organic HAP emissions for that particular batch emissions episode. The request to use engineering assessment to estimate organic HAP emissions for a batch emissions episode shall be submitted in the Precompliance Report, as required by § 63.1417(d).
- (ii) Engineering assessment includes, but is not limited to, the following:
  - (A) Previous test results, provided the tests are representative of current operating practices;
  - (B) Bench-scale or pilot-scale test data obtained under conditions representative of current process operating conditions;
  - (C) Flow rate or organic HAP emission rate specified or implied within a permit limit applicable to the batch process vent; and

- (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;
  - (2) Estimation of flow rate based on physical equipment design such as pump or blower capacities;
  - (3) Estimation of organic HAP concentrations based on saturation conditions; and
  - (4) Estimation of organic HAP concentrations based on grab samples of the liquid or vapor.
- (iii) Data or other information used to demonstrate that the criteria in paragraph (d)(6)(i) of this section have been met shall be reported as specified in paragraphs (d)(6)(iii)(A) and (B) of this section.
  - (A) Data or other information used to demonstrate that the criteria in paragraphs (d)(6)(i)(A) and (B) of this section have been met shall be reported in the Notification of Compliance Status, as required by § 63.1417(e)(9).
  - (B) The request for approval to use engineering assessment to estimate organic HAP emissions from a batch emissions episode as allowed under paragraph (d)(6)(i)(C) of this section, and sufficient data or other information for demonstrating to the Administrator that engineering assessment is an accurate means of estimating organic HAP emissions for that particular batch emissions episode shall be submitted with the Precompliance Report, as required by § 63.1417(d).
- (7) **Emissions for a single batch cycle.** For each batch process vent, the organic HAP emissions associated with a single batch cycle shall be calculated using Equation 15 of this section:

$$E_{cycle} = \sum_{i=1}^n E_{episodei} \quad [Eq. 15]$$

Where:

$E_{cycle}$  = Emissions for an individual batch cycle, kg/batch cycle.

$E_{episodei}$  = Emissions from batch emission episode i, kg/episode.

n = Number of batch emission episodes for the batch cycle.

- (8) **Annual emissions from a batch process vent.** Annual organic HAP emissions from a batch process vent shall be calculated using Equation 16 of this section:

$$AE = \sum_{i=1}^n (N_i) (E_{cyclei}) \quad [Eq. 16]$$

Where:

AE = Annual emissions from a batch process vent, kg/yr.

$N_i$  = Number of type i batch cycles performed annually, cycles/year.

$E_{\text{cycle}i}$  = Emissions from the batch process vent associated with a single type i batch cycle, as determined in paragraph (d)(7) of this section, kg/batch cycle.

n = Number of different types of batch cycles that cause the emission of organic HAP from the batch process vent.

- (9) **Partial pressures in multicomponent systems.** Individual HAP partial pressures in multicomponent systems shall be determined using the appropriate method specified in paragraphs (d)(9)(i) through (iii) of this section.
- (i) If the components are miscible, use Raoult's law to calculate the partial pressures;
  - (ii) If the solution is a dilute aqueous mixture, use Henry's law constants to calculate partial pressures;
  - (iii) If Raoult's law or Henry's law is not appropriate or available, the owner or operator may use any of the options in paragraph (d)(9)(iii)(A), (B), or (C) of this section.
    - (A) Experimentally obtained activity coefficients, Henry's law constants, or solubility data;
    - (B) Models, such as group-contribution models, to predict activity coefficients; or
    - (C) Assume the components of the system behave independently and use the summation of all vapor pressures from the HAPs as the total HAP partial pressure.
- (10) For continuous process vent emissions determined by engineering assessment, the engineering assessment includes, but is not limited to, the examples provided in § 63.1412(k)(3).

[65 FR 3290, Jan. 20, 2000, as amended at 79 FR 60932, Oct. 8, 2014]

## § 63.1415 Monitoring requirements.

- (a) **General requirements.** Each owner or operator of an emission point located at an affected source that uses a control device to comply with the requirements of this subpart and has one or more parameter monitoring level requirement specified under this subpart, shall install the monitoring equipment specified in paragraph (b) of this section in order to demonstrate continued compliance with the provisions of this subpart. 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) This monitoring equipment shall be in operation at all times when organic HAP emissions that are required to be controlled as part of complying with the emission limits specified in §§ 63.1404, 63.1405, 63.1406, 63.1407, and 63.1408 are vented to the control device.
  - (2) For control devices controlling less than 1 ton per year of uncontrolled organic HAP emissions, monitoring shall consist of a daily verification that the control device is operating properly. If the control device is used to control batch process vents alone or in combination with other emission points, the verification may be on a per batch cycle basis. This verification shall include, but not be

limited to, a daily or per batch demonstration that the control device is working as designed. The procedure for this demonstration shall be submitted for review and approval as part of the Precompliance Report, as required by § 63.1417(d)(10).

- (3) Nothing in this section shall be construed to allow a monitoring parameter excursion caused by an activity that violates other applicable provisions of subpart A, F, or G of this part.

(b) **Monitoring equipment.** The monitoring equipment specified in paragraphs (b)(1) through (8) of this section shall be installed as specified in paragraph (a) of this section. The parameters to be monitored are specified in Table 3 of this subpart.

- (1) Where a scrubber is used, the following monitoring equipment is required.

- (i) A pH monitoring device equipped with a continuous recorder to monitor the pH of the scrubber effluent.
- (ii) A flow measurement device 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 following procedures:
  - (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 required a determination of the liquid to gas (L/G) ratio prior to the applicable compliance date for this 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 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 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 § 63.1416(a).

- (2) Where an absorber is used, a scrubbing liquid temperature monitoring device and a specific gravity monitoring device are required, each equipped with a continuous recorder.
- (3) Where a condenser is used, a condenser exit temperature (product side) monitoring device equipped with a continuous recorder is required.
- (4) Where a carbon adsorber is used, an integrating regeneration steam flow or nitrogen flow, or pressure monitoring device having an accuracy of  $\pm 10$  percent of the flow rate, level, or pressure, or better, capable of recording the total regeneration steam flow or nitrogen flow, or pressure (gauge or absolute) 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 are required.

- (5) 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, the 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.
- (6) Where a flare is used, 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 is required.
- (7) Where a boiler or process heater of less than 44 megawatts design heat input capacity 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.
- (8) As an alternate to paragraphs (b)(1) through (7) of this section, the owner or operator may install an organic monitoring device equipped with a continuous recorder. Said organic monitoring device shall meet the requirements of Performance Specification 8 or 9 of 40 CFR part 60, appendix B, and shall be installed, calibrated, and maintained according to § 63.6.
- (c) **Alternative monitoring parameters.** An owner or operator may request approval to monitor parameters other than those specified in Table 3 of this subpart. The request shall be submitted according to the procedures specified in § 63.1417(j). Approval shall be requested if the owner or operator:
  - (1) Uses a control device or control technology other than those included in paragraph (b) of this section; or
  - (2) Uses one of the control devices included in paragraph (b) of this section, but seeks to monitor a parameter other than those specified in Table 3 of this subpart.
- (d) **Monitoring of bypass lines.** Owners or operators using a vent system that contains bypass lines that could divert emissions away from a control device or control technology used to comply with the provisions of this subpart shall comply with either paragraph (d)(1) or (2) 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 § 63.1416(d)(3). The flow indicator shall be installed at the entrance to any bypass line that could divert emissions away from the control device or control technology and to the atmosphere; or
  - (2) Secure the bypass line damper or 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 damper or valve is maintained in the non-diverting position and emissions are not diverted through the bypass line. Records shall be generated as specified in § 63.1416(d)(3).
- (e) **Monitoring for the alternative standards.** For control devices that are used to comply with the provisions of § 63.1404(b), § 63.1405(c), § 63.1406(b), § 63.1407(b), or § 63.1408(b) the owner or operator shall conduct continuous monitoring of the outlet organic HAP concentration whenever emissions are vented

to the control device. Continuous monitoring of outlet organic HAP concentration shall be accomplished using an FTIR instrument following Method PS-15 of 40 CFR part 60, appendix B. The owner or operator shall calculate a daily average outlet organic HAP concentration.

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### § 63.1416 Recordkeeping requirements.

- (a) **Data retention.** Unless otherwise specified in this subpart, each owner or operator of an affected source shall keep copies of all applicable records and reports required by this subpart for at least 5 years, as specified in paragraph (a)(1) of this section, with the exception listed in paragraph (a)(2) of this section.
  - (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 4 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, CD-ROM, optical disc, magnetic tape, or microfiche.
  - (2) If an owner or operator submits copies of reports to the appropriate 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 those reports.
- (b) **Malfunction records.** Records shall be kept as specified in paragraphs (b)(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 § 63.1420(h)(4), and any corrective actions taken to return the affected unit to its normal or usual manner of operation.
- (c) **Monitoring records.** Owners or operators required to comply with § 63.1415 and, therefore, required to keep continuous records shall keep records as specified in paragraphs (c)(1) through (6) of this section.
  - (1) The owner or operator shall record either each measured data value or average values for 1 hour or shorter periods calculated from all measured data values during each period. If values are measured more frequently than once per minute, a single value for each minute may be used to calculate the hourly (or shorter period) average instead of all measured values. Owners or operators of batch process vents shall record each measured data value; if values are measured more frequently than once per minute, a single value for each minute may be recorded instead of all measured values.
  - (2) Daily average, batch cycle daily average, or block average values of each continuously monitored parameter shall be calculated for each operating day as specified in paragraphs (c)(2)(i) and (ii) of this section, except as specified in paragraphs (c)(3) and (4) of this section. The option of conducting parameter monitoring for batch process vents on a batch cycle daily average basis or a block average basis is described in paragraph (d)(2) of this section.



- (i) The daily average value, batch cycle daily average, or block average shall be calculated as the average of all parameter values recorded during the operating day, or batch cycle, as appropriate, except as specified in paragraph (c)(4) of this section. For batch process vents, only parameter values recorded during those batch emission episodes, or portions thereof, in the batch cycle that the owner or operator has selected to control in order to comply shall be used to calculate the average. The calculated 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 for daily average values or batch cycle daily average values. The calculated average shall cover the entire period of the batch cycle for block average values. As specified in § 63.1413(a)(4)(i)(C)(3), the owner or operator shall provide the information needed to calculate batch cycle daily averages for operating days that include partial batch cycles.
  - (ii) The operating day shall be the period the owner or operator specifies in the operating permit or the Notification of Compliance Status for purposes of determining daily average values or batch cycle daily average values of monitored parameters. The block shall be the entire period of the batch cycle, as specified by the owner or operator in the operating permit or the Notification of Compliance Status for purposes of determining block average values of monitored parameters.
- (3) If all recorded values for a monitored parameter during an operating day or block are above the minimum level or below the maximum level established in the Notification of Compliance Status or operating permit, the owner or operator may record that all values were above the minimum level or below the maximum level rather than calculating and recording a daily average, or block average, for that operating day. For these operating days or blocks, the records required in paragraph (c)(1) of this section shall also be retained for 5 years.
- (4) Monitoring data recorded during periods identified in paragraphs (c)(4)(i) and (ii) 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 or recovery device or control technology operation when monitors are not operating:
- (i) Monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments; and
  - (ii) Periods of non-operation of the affected source (or portion thereof) resulting in cessation of the emissions to which the monitoring applies.
- (5) The owner or operator who has received approval to monitor different parameters, under § 63.1417(j) as allowed under § 63.1415(e), than those specified for storage vessels, continuous process vents, or batch process vents shall retain for a period of 5 years each record specified in their approved Alternative Monitoring Parameters request.
- (6) The owner or operator who has received approval to use alternative continuous monitoring and recordkeeping provisions as specified in § 63.1417(k) shall retain for a period of 5 years each record specified in their approved Alternative Continuous Monitoring request.

(d) **Batch process vent records** —

- (1) **Compliance demonstration records.** Each owner or operator of a batch process vent complying with § 63.1406 or § 63.1407 shall keep the following records, as applicable, readily accessible.

- (i) If a batch process vent is seeking to demonstrate compliance with the alternative standard specified in § 63.1406(b) or § 63.1407(b), results of the initial compliance demonstration specified in § 63.1413(f).
- (ii) If a batch process vent is seeking to demonstrate compliance with the percent reduction requirements of § 63.1406(a)(1)(ii) or § 63.1407(a)(2)(ii), records documenting the batch cycle percent reduction or overall percent reduction, as appropriate, as specified in § 63.1413(e)(1)(iii).
- (iii) When using a flare to comply with § 63.1406(a)(1)(i) or § 63.1407(a)(2)(i):
  - (A) The 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 § 63.1413(g); and
  - (C) Periods when all pilot flames were absent during the compliance determination required by § 63.1413(g).
- (iv) The following information when using a control device or control technology, other than a flare, to achieve compliance with the percent reduction requirement of § 63.1406(a)(1)(ii) or § 63.1407(a)(2)(ii):
  - (A) For an incinerator, non-combustion control device, or other control technology, the percent reduction of organic HAP achieved for emissions vented to the control device or control technology, as determined using the procedures specified in § 63.1413(e)(1);
  - (B) For a boiler or process heater, a description of the location at which the vent stream is introduced into the boiler or process heater; and
  - (C) For a boiler or process heater with a design heat input capacity of less than 44 megawatts and where the vent stream is not introduced with the primary fuel or used as the primary fuel, the percent reduction of organic HAP achieved for emissions vented to the control device, as determined using the procedures specified in § 63.1413(e)(1).
- (v) If a batch process vent is seeking to demonstrate compliance with the mass emission limits specified in § 63.1406(a)(1)(iii) or (a)(2)(iii) or specified in § 63.1407(b)(2), the following information:
  - (A) Results of the initial compliance demonstration specified in § 63.1413(e)(2).
  - (B) The organic HAP emissions from the batch process vent associated with each single type of batch cycle ( $E_{\text{cycle } i}$ ) determined as specified in § 63.1413(e)(2).
  - (C) The site-specific emission limit required by § 63.1413(e)(2), as appropriate.
- (vi) If an owner or operator designates a condenser sometimes operated as a process condenser as a control device, comply with either paragraph (d)(1)(vi)(A) or (B) of this section.
  - (A) Retain information, data, analyses to document inprocess recycling of the material recovered when the condenser is operating as a control device.

- (B) When requested by the Administrator, demonstrate that material recovered by the condenser operating as a control device is reused in a manner meeting the definition of inprocess recycling.
- (2) **Establishment of parameter monitoring level records.** For each parameter monitored according to § 63.1415(b) and Table 3 of this subpart, or for alternate parameters and/or parameters for alternate control devices or control technologies monitored according to § 63.1417(j) as allowed under § 63.1415(e), maintain documentation showing the establishment of the level that indicates proper operation of the control device or control technology as required by § 63.1415(c) for parameters specified in § 63.1415(b) and as required by § 63.1417(j) for alternate parameters. An owner or operator may choose to monitor operating parameters for batch process vents on a batch cycle daily average basis or on a block average basis. The batch cycle daily average is based on parameter monitoring accomplished during the operating day (i.e., a 24-hour basis). The block average is based on the parameter monitoring accomplished during a single batch cycle. As defined in § 63.1402, the block shall be the period of time equal to a single batch cycle. Monitored parameter documentation shall include the following:
  - (i) Parameter monitoring data used to establish the level.
  - (ii) Identification that the parameter monitoring level is associated with a batch cycle daily average or a block average.
  - (iii) A definition of the batch cycle or block, as appropriate.
- (3) **Controlled batch process vent continuous compliance records.** Continuous compliance records shall be kept as follows:
  - (i) Each owner or operator of a batch process vent that uses a control device or control technology to comply with the percent reduction requirements of § 63.1406(a)(1)(ii) or § 63.1407(a)(2)(ii) shall keep the following records, as applicable, readily accessible:
    - (A) Continuous records of the equipment operating parameters specified to be monitored under § 63.1415(b) as applicable, and listed in Table 3 of this subpart, or specified by the Administrator in accordance with § 63.1417(f) as allowed under § 63.1415(e). Said records shall be kept as specified under paragraph (c) of this section, except as follows:
      - (1) For carbon adsorbers, the records specified in Table 3 of this subpart shall be maintained in place of continuous records.
      - (2) For flares, the records specified in Table 4 of this subpart shall be maintained in place of continuous records.
    - (B) Records of the batch cycle daily average value or block average value of each continuously monitored parameter, as specified in paragraph (c) of this section.
  - (ii) Each owner or operator of a batch process vent that uses a control device or control technology to comply with § 63.1406 or § 63.1407 shall keep the following records, as applicable, readily accessible:
    - (A) Hourly records of whether the flow indicator for bypass lines specified in § 63.1415(d) was operating and whether a diversion was detected at any time during the hour. Also, records of the time and duration periods when the vent is diverted from the control device or control technology or the flow indicator specified in § 63.1415(d) is not operating.

- (B) Where a seal or closure mechanism is used to comply with § 63.1415(d), hourly records of whether a diversion was detected at any time are not required. 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 damper or 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.
- (C) Records specifying the times and duration of periods of monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments. In addition, records specifying any other periods of process or control device operation or control technology operation when monitors are not operating.
- (iii) Each owner or operator of a batch process vent seeking to demonstrate compliance with the alternative standard, as specified in § 63.1406(b) or § 63.1407(b), shall keep the records of continuous emissions monitoring described in § 63.1416(c).
- (iv) Each owner or operator of a batch process vent seeking to demonstrate compliance with the mass emission limits, specified in § 63.1406(a)(1)(iii) or (a)(2)(iii), shall keep the following records, as applicable, readily accessible.
  - (A) The cumulative average monthly emission rate or the 12-month rolling average monthly emission rate, as appropriate.
  - (B) If there is a deviation from the mass emission limit, as specified in § 63.1413(i), the individual monthly emission rate data points making up the cumulative average monthly emission rate or the 12-month rolling average monthly emission rate, as appropriate.
  - (C) If it becomes necessary to redetermine ( $E_{\text{cycle } i}$ ) for a reactor batch process vent, as specified in § 63.1413(e)(2), the new value(s) for ( $E_{\text{cycle } i}$ ).
  - (D) If an owner or operator is demonstrating compliance using the procedures in § 63.1413(e)(2), the monthly value of the site-specific emission limit developed under § 63.1413(e)(2).

(e) **Aggregate batch vent stream records –**

- (1) **Compliance demonstration records.** Each owner or operator of an aggregate batch vent stream complying with § 63.1408(a)(1) or (2) shall keep the following records, as applicable, readily accessible:
  - (i) If an aggregate batch vent stream is in compliance with the percent reduction requirements of § 63.1408(a)(1)(ii) or (a)(2)(ii), owners or operators shall comply with the recordkeeping requirements for continuous process vents specified in 40 CFR part 63, subpart SS.
  - (ii) If an aggregate batch vent stream is in compliance with the alternative standard specified in § 63.1408(b), results of the initial compliance demonstration specified in § 63.1413(f).
  - (iii) When using a flare to comply with § 63.1408(a)(1)(i) or (a)(2)(i):
    - (A) The 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 § 63.1413(g).

- (C) Periods when all pilot flames were absent during the compliance determination required by § 63.1413(g).
- (iv) If an aggregate batch vent stream is seeking to comply with the mass emission limits specified in § 63.1408(b)(2), results of the initial compliance demonstration specified in § 63.1413(e)(2). In addition, for each batch process vent, the emissions associated with each single type of batch cycle ( $E_{\text{cycle } i}$ ), determined as specified in § 63.1413(e)(2), shall be recorded.
- (2) **Establishment of parameter monitoring level records.** For each parameter monitored according to § 63.1415(b) and Table 3 of this subpart, or for alternate parameters and/or parameters for alternate control devices monitored according to § 63.1417(j) as allowed under § 63.1415(e), maintain documentation showing the establishment of the level that indicates proper operation of the control device as required by § 63.1415(c) for parameters specified in § 63.1415(b) and as required by § 63.1417(j) for alternate parameters. Monitored parameter documentation shall include the parameter monitoring data used to establish the level.
- (3) **Controlled aggregate batch vent streams continuous compliance records.** The following continuous compliance records shall be kept, as applicable:
  - (i) Each owner or operator of an aggregate batch vent stream that uses a control device to comply with the percent reduction requirement of § 63.1408(a)(1)(ii) or (a)(2)(ii) shall keep the following records, as applicable, readily accessible:
    - (A) Continuous records of the equipment operating parameters specified to be monitored under § 63.1415(b) as applicable, and listed in Table 3 of this subpart, or specified by the Administrator in accordance with § 63.1417(j) as allowed under § 63.1415(e). Records shall be kept as specified under paragraph (c) of this section, except as follows:
      - (1) For carbon adsorbers, the records specified in Table 3 of this subpart shall be maintained in place of continuous records.
      - (2) For flares, the records specified in Table 3 of this subpart shall be maintained in place of continuous records.
    - (B) Records of the daily average value of each continuously monitored parameter, as specified in paragraph (c) of this section.
  - (ii) Each owner or operator of an aggregate batch vent stream that uses a control device to comply with paragraph § 63.1408(a)(1) or (2) of this section shall keep the following records, as applicable, readily accessible:
    - (A) Hourly records of whether the flow indicator for bypass lines specified in § 63.1415(d) was operating and whether a diversion was detected at any time during the hour. Also, records of the times and durations of periods when the vent is diverted from the control device or the flow indicator specified in § 63.1415(d) is not operating.
    - (B) Where a seal or closure mechanism is used to comply with § 63.1415(d), hourly records of whether a diversion was detected at any time are not required. 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 damper or 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.

- (C) Records specifying the times and duration of periods of monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments. In addition, records specifying any other periods of process or control device operation when monitors are not operating.
- (iii) Each owner or operator of an aggregate batch vent stream seeking to demonstrate compliance with the alternative standard, as specified in § 63.1408(b), shall keep the records of continuous emissions monitoring described in § 63.1416(c).
- (iv) Each owner or operator of an aggregate batch vent stream seeking to demonstrate compliance with the mass emission limits, specified in § 63.1408(b)(2), shall keep the following records, as applicable, readily accessible:
  - (A) The rolling average monthly emission rate or the 12-month rolling average monthly emission rate, as appropriate.
  - (B) If there is a deviation from the emission limit, as specified in § 63.1413(i)(1), the individual monthly emission rate data points making up the rolling average monthly emission rate or the 12-month rolling average monthly emission rate, as appropriate.
  - (C) If it becomes necessary to redetermine ( $E_{cyclei}$ ) for a reactor batch process vent, as specified in § 63.1413(e)(2), the new value(s) for ( $E_{cyclei}$ ).

(f) **Continuous process vent records –**

- (1) **TRE index value records.** Each owner or operator of a continuous process vent at a new affected source shall maintain records of measurements, engineering assessments, and calculations performed according to the procedures of § 63.1412(j) to determine the TRE index value. Documentation of engineering assessments, described in § 63.1412(k), shall include all data, assumptions, and procedures used for the engineering assessments.
- (2) **Volumetric flow rate records.** Each owner or operator of a continuous process vent shall record the volumetric flow rate as measured using the sampling site and volumetric flow rate determination procedures (if applicable) specified in § 63.1412(b) and (f) or determined through engineering assessment as specified in § 63.1412(k).
- (3) **Organic HAP concentration records.** Each owner or operator shall record the organic HAP concentration as measured using the sampling site and organic HAP concentration determination procedures (if applicable) specified in § 63.1412(b) and (e), or determined through engineering assessment as specified in § 63.1412(k).
- (4) **Process change records.** Each owner or operator of a continuous process vent shall keep up-to-date, readily accessible records of any process changes that change the control applicability for a continuous process vent. Records are to include any recalculation or measurement of the flow rate, organic HAP concentration, and TRE index value.
- (5) If a continuous process vent is seeking to demonstrate compliance with the mass emission limit specified in § 63.1405(b)(2)(i), keep records specified in paragraphs (f)(5)(i) through (iii) of this section.
  - (i) The results of the initial compliance demonstration specified in § 63.1413(h)(1)(i).
  - (ii) Identification of the period of time that represents an operating day.

- (iii) The daily organic HAP emissions from the continuous process vent determined as specified in § 63.1413(h)(3).
- (6) If a continuous process vent is seeking to demonstrate compliance with the emission rate limits specified in § 63.1405(b)(2)(ii) or (iii), keep records specified in paragraphs (f)(6)(i) through (iii) of this section.
  - (i) The results of the initial compliance demonstration specified in § 63.1413(h)(2)(i).
  - (ii) Identification of the period of time that represents an operating day.
  - (iii) The average hourly organic HAP emissions from the continuous process vent determined as specified in § 63.1413(h)(4).
- (7) When using a flare to comply with § 63.1405(a)(1) or (b)(1), keep the records specified in paragraphs (f)(7)(i) through (f)(7)(iii) of this section.
  - (i) The 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 § 63.1413(g); and
  - (iii) Periods when all pilot flames were absent during the compliance determination required by § 63.1413(g).

(g) *Other records or documentation.*

- (1) For continuous monitoring systems used to comply with this subpart, owners or operators shall keep records documenting the completion of calibration checks and records documenting the maintenance of continuous monitoring systems that are specified in the manufacturer's instructions or that are specified in other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately.
- (2) The owner or operator of an affected source granted a waiver under § 63.10(f) shall maintain any information demonstrating whether an affected source is meeting the requirements for a waiver of recordkeeping or reporting requirements.
- (3) Owners or operators using the exemption from the equipment leak provisions provided by § 63.1400(f) shall comply with either paragraph (g)(3)(i) or (ii) of this section.
  - (i) The owner or operator shall retain information, data, and analysis used to document the basis for using the exemption provided by § 63.1400(f). Such information, data, and analysis shall be retained for the 12-month period preceding December 14, 1998 and for each 12-month period the affected source is in operation and using the exemption provided by § 63.1400(f). The beginning of each 12-month period shall be the anniversary of December 14, 1998.
  - (ii) When requested by the Administrator, the owner or operator shall demonstrate that actual annual production is equal to or less than 800 megagrams per year of amino/phenolic resin for the 12-month period preceding December 14, 1998, and for each 12-month period the affected source has been in operation and using the exemption provided by § 63.1400(f). The beginning of each 12-month period shall be the anniversary of December 14, 1998.
- (4) The owner or operator of a heat exchange system located at an affected source shall retain the following records:

- (i) Monitoring data required by § 63.1409 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 § 63.1409(c)(2) and the date the leak was detected.
  - (iii) The dates of efforts to repair leaks.
  - (iv) The method or procedure used to confirm repair of a leak and the date repair was confirmed.
- (5) For pressure relief devices in organic HAP service, keep records of the information specified in paragraphs (g)(5)(i) through (v) of this section, as applicable.
- (i) A list of identification numbers for pressure relief devices that vent to a fuel gas system, process, drain system, or closed-vent system and control device, under the provisions in § 63.1411(d).
  - (ii) A list of identification numbers for pressure relief devices subject to the provisions in § 63.1411(a).
  - (iii) A list of identification numbers for pressure relief devices equipped with rupture disks, under the provisions in § 63.1411(b)(2).
  - (iv) The dates and results of the monitoring following a pressure release for each pressure relief device subject to the provisions in § 63.1411(a) and (b). The results shall include:
    - (A) The background level measured during each compliance test.
    - (B) The maximum instrument reading measured at each piece of equipment during each compliance test.
  - (v) For pressure relief devices in organic HAP service subject to § 63.1411(c), keep records of each pressure release to the atmosphere, including the following information:
    - (A) The source, nature, and cause of the pressure release.
    - (B) The date, time, and duration of the pressure release.
    - (C) An estimate of the quantity of total HAP emitted during the pressure release and the calculations used for determining this quantity.
    - (D) The actions taken to prevent this pressure release.
    - (E) The measures adopted to prevent future such pressure releases.
- (6) An owner or operator shall record, on a semiannual basis, the information specified in paragraphs (g)(6)(i) through (iii) of this section, as applicable, for those planned routine maintenance operations that would require the control device not to meet the requirements of § 63.1404(a) or (b) of this subpart.
- (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 these 6 months that the control device did not meet the requirement of § 63.1404 (a) or (b) of this subpart, as applicable, due to planned routine maintenance.
- (iii) For each storage vessel for which planned routine maintenance was performed during the previous 6 months, record 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 records shall include the date and time the liquid height was measured.

(h) **Reduced recordkeeping program.** For any parameter with respect to any item of equipment, the owner or operator may implement the recordkeeping requirements specified in paragraph (h)(1) or (2) of this section as alternatives to the provisions specified in this subpart for storage vessels, continuous process vents, batch process vents, or aggregate batch vent streams. The owner or operator shall retain for a period of 5 years each record required by paragraph (h)(1) or (2) of this section.

(1) The owner or operator may retain only the daily average, batch cycle daily average, or block average value, and is not required to retain more frequent values, for a parameter with respect to an item of equipment, if the requirements of paragraphs (h)(1)(i) through (vi) of this section are met. An owner or operator electing to comply with the requirements of paragraph (h)(1) of this section shall notify the Administrator in the Notification of Compliance Status Report required under § 63.1417(e) 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 § 63.1417(f)(10).

- (i) The monitoring system is capable of detecting unrealistic or impossible data during periods of operation (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 or block constitute a single occurrence.
- (ii) The monitoring system generates, updated at least hourly throughout each operating day, a running average of the parameter values that have been obtained during that operating day or block, and the capability to observe this running average is readily available on-site to the Administrator during the operating day. The owner or operator shall record the occurrence of any period meeting the criteria in paragraphs (h)(1)(ii)(A) and (B) of this section. All instances in an operating day or block constitute a single occurrence:
  - (A) The running average is above the maximum or below the minimum established limits; and
  - (B) The running average is based on at least six 1-hour average values.
- (iii) The monitoring system is capable of detecting unchanging data during periods of operation, 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 or block constitute a single occurrence.

- (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 (h)(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 paragraphs (h)(1)(i) through (iv) of this section, at the times specified in paragraphs (h)(1)(v)(A) through (C). 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 (h)(1)(vi)(A) through (D) 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 (h)(1) of this section.
  - (B) A description of the applicable monitoring system(s) and how compliance will be achieved with each requirement of paragraphs (h)(1)(i) through (v) 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, as provided in paragraph (a) of this section, except as provided in paragraph (h)(1)(vi)(D) of this section, both the current and the most recent superseded description.
  - (C) A description and the date of any change to the monitoring system that would reasonably be expected to impair its ability to comply with the requirements of paragraph (h) of this section.
  - (D) Owners and operators subject to paragraph (h)(1)(vi)(B) of this section shall retain the current description of the monitoring system as long as the description is current. 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 all superseded descriptions for at least 5 years after the date of their creation. Superseded descriptions shall be retained on-site (or accessible from a central location by computer or other means that provides access within 2 hours after a request) for at least 6 months after their creation. Thereafter, superseded descriptions may be stored off-site.
- (2) If an owner or operator has elected to implement the requirements of paragraph (h)(1) of this section for a parameter with respect to an item of equipment and a period of 6 consecutive months has passed without any deviation as defined in paragraph (h)(2)(iv) of this section, the owner or operator is no longer required to record the daily average, batch cycle daily average, or block average value for any operating day when the daily average, batch cycle daily average, or block 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 accomplished during the period prior to the compliance date were required and/or approved by the Administrator.

- (i) If the owner or operator elects not to retain the daily average, batch cycle daily average, or block average values, the owner or operator shall notify the Administrator in the next Periodic Report as specified in § 63.1417(f)(11). The notification shall identify the parameter and unit of equipment.
- (ii) If, on any operating day or during any block after the owner or operator has ceased recording the daily average, batch cycle daily average, or block average values as provided in paragraph (h)(2) of this section, there is a deviation as defined in paragraph (h)(2)(iv) of this section, the owner or operator shall immediately resume retaining the daily average, batch cycle daily average, or block average value for each operating day and shall notify the Administrator in the next Periodic Report. The owner or operator shall continue to retain each daily average, batch cycle daily average, or block average value until another period of 6 consecutive months has passed without a deviation as defined in paragraph (h)(2)(iv) of this section.
- (iii) The owner or operator shall retain the records specified in paragraphs (h)(1)(i) through (iv) of this section for the duration specified in paragraph (h) of this section. For any calendar week, if compliance with paragraphs (h)(1)(i) through (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 value during a period of operation.
- (iv) For purposes of paragraph (h)(2) of this section, a deviation means that the daily average, batch cycle daily average, or block average value of monitoring data for a parameter is greater than the maximum, or less than the minimum established value.

[65 FR 3290, Jan. 20, 2000, as amended at 71 FR 20461, Apr. 20, 2006; 79 FR 60932, Oct. 8, 2014; 83 FR 51856, Oct. 15, 2018]

### § 63.1417 Reporting requirements.

- (a) **Reporting and notification.** In addition to the reports and notifications required by subpart A of this part as specified in Table 1 of this subpart, the owner or operator of an affected source shall prepare and submit the reports listed in paragraphs (d) through (i) of this section as applicable. All reports required by this subpart and the schedule for their submittal are listed in Table 5 of this subpart.
- (b) **General.** Owners and operators are required to meet the reporting requirements of this subpart unless they can demonstrate that failure to submit information required to be included in a specified report was due to the circumstances described in paragraphs (b)(1) through (3) of this section. Examples of circumstances where this paragraph may apply include information related to newly-added equipment or emission points, changes in the process, changes in equipment required or utilized for compliance with the requirements of this subpart, or changes in methods or equipment for monitoring, recordkeeping, or reporting.
  - (1) The information was not known in time for inclusion in the report specified by this subpart.
  - (2) The owner or operator has been diligent in obtaining the information.
  - (3) The owner or operator submits a report according to the provisions of paragraphs (b)(3)(i) through (iii) of this section, as appropriate.

- (i) If this subpart expressly provides for supplements to the report in which the information is required, the owner or operator shall submit the information as a supplement to that report. The information shall be submitted no later than 60 days after it is obtained, unless otherwise specified in this subpart.
  - (ii) If this subpart does not expressly provide for supplements, but the owner or operator must submit a request for revision of an operating permit pursuant to 40 CFR part 70 or part 71 due to circumstances to which the information pertains, the owner or operator shall submit the information with the request for revision to the operating permit.
  - (iii) In any case not addressed by paragraph (b)(3)(i) or paragraph (b)(3)(ii) of this section, the owner or operator shall submit the information with the first Periodic Report, as required by this subpart, which has a submission deadline at least 60 days after the information is obtained.
- (c) **Submittals.** All reports required under this subpart shall be sent to the Administrator at the appropriate address listed in § 63.13. If acceptable to both the Administrator and the owner or operator of an affected source, reports may be submitted on electronic media.
- (d) **Precompliance Report.** Owners or operators of affected sources requesting an extension for compliance; requesting approval to use alternative monitoring parameters, alternative continuous monitoring and recordkeeping, or alternative controls; requesting approval to use engineering assessment to estimate organic HAP emissions from a batch emissions episode as described in § 63.1414(d)(6)(i)(C); wishing to establish parameter monitoring levels according to the procedures contained in § 63.1413(a)(4)(ii); establishing parameter monitoring levels based on a design evaluation as specified in § 63.1413(a)(3); or following the procedures in § 63.1413(e)(2); or following the procedures in § 63.1413(h)(3), shall submit a Precompliance Report according to the schedule described in paragraph (d)(1) of this section. The Precompliance Report shall contain the information specified in paragraphs (d)(2) through (11) of this section, as appropriate.
- (1) The Precompliance Report shall be submitted to the Administrator no later than 12 months prior to the compliance date. Unless the Administrator objects to a request submitted in the Precompliance Report within 45 days after its receipt, the request shall be deemed approved. For new affected sources, the Precompliance Report shall be submitted to the Administrator with the application for approval of construction or reconstruction required by § 63.5(d), as specified on Table 1 of this subpart. Supplements to the Precompliance Report may be submitted as specified in paragraph (d)(11) of this section.
  - (2) A request for an extension for compliance, as specified in § 63.1401(d), may be submitted in the Precompliance Report. The request for a compliance extension will include the data outlined in § 63.6(i)(6)(i)(A), (B), and (D), as required in § 63.1401(d)(1).
  - (3) The alternative monitoring parameter information required in paragraph (j) of this section shall be submitted in the Precompliance Report if, for any emission point, the owner or operator of an affected source seeks to comply through the use of a control technique other than those for which monitoring parameters are specified in this subpart or seeks to comply by monitoring a different parameter than those specified in this subpart.
  - (4) If the affected source seeks to comply using alternative continuous monitoring and recordkeeping as specified in paragraph (k) of this section, the owner or operator shall submit the information requested in paragraph (d)(4)(i) or (ii) of this section in the Precompliance Report:

- (i) The owner or operator shall submit notification of the intent to use the provisions specified in paragraph (k) of this section; or
  - (ii) The owner or operator shall submit a request for approval to use alternative continuous monitoring and recordkeeping provisions as specified in paragraph (k) of this section.
- (5) The owner or operator shall report the intent to use alternative controls to comply with the provisions of this subpart in the Precompliance Report. The Administrator may deem the alternative controls to be equivalent to the controls required by the standard under the procedures outlined in § 63.6(g).
- (6) If a request for approval to use engineering assessment to estimate organic HAP emissions from a batch emissions episode, as specified in § 63.1414(d)(6)(i)(C), is being made, the information required by § 63.1414(d)(6)(iii)(B) shall be submitted in the Precompliance Report.
- (7) If an owner or operator elects to establish parameter monitoring levels according to the procedures contained in § 63.1413(a)(4)(ii), or will be establishing parameter monitoring levels based on a design evaluation as specified in § 63.1413(a)(3), the following information shall be submitted in the Precompliance Report:
  - (i) Identification of which procedures (i.e., § 63.1413(a)(1)(i) or (ii)) are to be used; and
  - (ii) A description of how the parameter monitoring level is to be established. If the procedures in § 63.1413(a)(4)(ii) are to be used, a description of how performance test data will be used shall be included.
- (8) If an owner or operator is complying with the mass emission limit specified in § 63.1405(b)(2)(i), the sample of production records specified in § 63.1413(h)(3) shall be submitted in the Precompliance Report.
- (9) If an owner or operator is complying with the mass emission limit specified in § 63.1406(a)(1)(iii) or (a)(2)(iii), § 63.1407(b)(2), or § 63.1408(b)(2), the sample of production records specified in § 63.1413(e)(2) shall be submitted in the Precompliance Report.
- (10) The procedure for a control device controlling less than 1 ton per year of uncontrolled organic HAP emissions shall be submitted, as specified in § 63.1415(a)(2). Such a procedure shall meet the requirements specified in § 63.1415(a)(2).
- (11) Supplements to the Precompliance Report may be submitted as specified in paragraph (d)(11)(i) or (ii) of this section. Unless the Administrator objects to a request submitted in a supplement to the Precompliance Report within 45 days after its receipt, the request shall be deemed approved.
  - (i) Supplements to the Precompliance Report may be submitted to clarify or modify information previously submitted.
  - (ii) Supplements to the Precompliance Report may be submitted to request approval to use alternative monitoring parameters, as specified in paragraph (j) of this section; to use alternative continuous monitoring and recordkeeping, as specified in paragraph (k) of this section; to use alternative controls, as specified in paragraph (d)(5) of this section; to use engineering assessment to estimate organic HAP emissions from a batch emissions episode, as specified in paragraph (d)(6) of this section; or to establish parameter monitoring levels according to the procedures contained in § 63.1413(a)(4)(ii) or (a)(3), as specified in paragraph (d)(7) of this section.

- (e) **Notification of Compliance Status.** For existing and new affected sources, a Notification of Compliance Status shall be submitted within 150 days after the compliance dates specified in § 63.1401. For equipment leaks, the Notification of Compliance Status shall contain the information specified in 40 CFR part 63, subpart UU. For storage vessels, continuous process vents, batch process vents, and aggregate batch vent streams, the Notification of Compliance Status shall contain the information listed in paragraphs (e)(1) through (9) of this section. For pressure relief devices subject to the requirements of § 63.1411(c), the owner or operator shall also submit the information listed in paragraph (e)(10) 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.
- (1) The results of any emission point applicability determinations, performance tests, design evaluations, inspections, continuous monitoring system performance evaluations, any other information used to demonstrate compliance, and any other information, as appropriate, required to be included in the Notification of Compliance Status under 40 CFR part 63, subpart WW and subpart SS, as referred to in § 63.1404 for storage vessels; under 40 CFR part 63, subpart SS, as referred to in § 63.1405 for continuous process vents; under § 63.1416(f)(1) through (3), (f)(5)(i) and (ii), and (f)(6)(i) and (ii) for continuous process vents; under § 63.1416(d)(1) for batch process vents; and under § 63.1416(e)(1) for aggregate batch vent streams. In addition, each owner or operator shall comply with paragraphs (e)(1)(i) and (ii) of this section.
- (i) For performance tests, applicability determinations, and estimates of organic HAP emissions that are based on measurements, the Notification of Compliance Status shall include one complete test report, as described in paragraph (e)(1)(ii) of this section, 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 required information 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.
- (2) For each monitored parameter for which a maximum or minimum level is required to be established, the Notification of Compliance Status shall contain the information specified in paragraphs (e)(2)(i) through (iv) of this section, unless this information has been established and provided in the operating permit.
- (i) The required information shall include the specific maximum or minimum level of the monitored parameter(s) for each emission point.
- (ii) The required information shall include the rationale for the specific maximum or minimum level for each parameter for each emission point, including any data and calculations used to develop the level and a description of why the level indicates proper operation of the control device or control technology.

- (iii) The required information shall include a definition of the affected source's operating day, as specified in § 63.1416(c)(2)(ii), for purposes of determining daily average values or batch cycle daily average values of monitored parameters. The required information shall include a definition of the affected source's block(s), as specified in § 63.1416(c)(2)(ii), for purposes of determining block average values of monitored parameters.
- (iv) For batch process vents, the required information shall include a definition of each batch cycle that requires the control of one or more batch emission episodes during the cycle, as specified in § 63.1413(e)(1)(iii) and 63.1416(c)(2)(ii).
- (3) When the determination of applicability for process units, as made following the procedures in § 63.1400(g), indicates that a process unit is an APPU, an identification of the APPU and a statement indicating that the APPU is an APPU that produces more than one intended product at the same time, as specified in § 63.1400(g)(1), or is a flexible operations process unit as specified in § 63.1400(g)(2) through (4).
- (4) [Reserved]
- (5) The results for each predominant use determination for storage vessels belonging to an affected source subject to this subpart that is made under § 63.1400(h)(6).
- (6) Notification that the owner or operator has elected to comply with § 63.1416(h), Reduced Recordkeeping Program.
- (7) Notification that an affected source is exempt from the equipment leak provisions of § 63.1410 according to the provisions of § 63.1400(f), and the affected source's actual annual production of amino/phenolic resins for the 12-month period preceding December 14, 1998.
- (8) An owner or operator with a combustion device, recovery device, or recapture device affected by the situation described in § 63.1400(i)(5) shall identify which rule shall be complied with for monitoring, recordkeeping, and reporting requirements, as allowed under § 63.1400(i)(5).
- (9) Data or other information used to demonstrate that an owner or operator may use engineering assessment to estimate emissions for a batch emission episode, as specified in § 63.1414(d)(6)(iii)(A).
- (10) For pressure relief devices in organic HAP service, a description of the device or monitoring system to be implemented, including the pressure relief devices and process parameters to be monitored (if applicable), and a description of the alarms or other methods by which operators will be notified of a pressure release.
- (f) **Periodic Reports.** Except as specified in paragraph (f)(12) of this section, a report containing the information in paragraph (f)(2) of this section or containing the information in paragraphs (f)(3) through (11) and (13) through (16) of this section, as appropriate, shall be submitted semiannually no later than 60 days after the end of each 180 day period. In addition, for equipment leaks subject to § 63.1410, the owner or operator shall submit the information specified in 40 CFR part 63, subpart UU, and for heat exchange systems subject to § 63.1409, the owner or operator shall submit the information specified in § 63.1409. Section 63.1415 shall govern the use of monitoring data to determine compliance for emissions points required to apply controls by the provisions of this subpart.
- (1) Except as specified in paragraph (f)(12) of this section, a report containing the information in paragraph (f)(2) of this section or containing the information in paragraphs (f)(3) through (11) and (13) through (16) of this section, as appropriate, shall be submitted semiannually no later than 60

days after the end of each 180 day period. The first report shall be submitted no later than 240 days 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. Subsequent reports shall cover each preceding 6-month period.

- (2) If none of the compliance exceptions specified in paragraphs (f)(3) through (11) and (13) through (16) of this section occurred during the 6-month period, the Periodic Report required by paragraph (f)(1) of this section shall be a statement that the affected source was in compliance for the preceding 6-month period and no activities specified in paragraphs (f)(3) through (11) and (13) through (16) of this section occurred during the preceding 6-month period.
- (3) For an owner or operator of an affected source complying with the provisions of §§ 63.1404 through 63.1409 for any emission point, Periodic Reports shall include:
  - (i) All information specified in 40 CFR part 63, subpart WW and subpart SS for storage vessels; 40 CFR part 63, subpart SS for continuous process vents required to comply with subpart SS; § 63.1416(d)(3)(ii) for batch process vents; and § 63.1416(e) for aggregate batch vent stream.
  - (ii) The daily average values, batch cycle daily average values, or block average values of monitored parameters for deviations, as specified in § 63.1413(i), of operating parameters. In addition, the periods and duration of periods when monitoring data were not collected shall be specified.
- (4) Notification if one or more emission point(s) or one or more APPU is added to an affected source. The owner or operator shall submit the following information:
  - (i) A description of the addition to the affected source;
  - (ii) Notification of applicability status (i.e., does the emission point require control) of the additional emission point, if appropriate, or notification of all emission points in the added APPU.
- (5) If there is a deviation from the mass emission limit specified in § 63.1406(a)(1)(iii) or (a)(2)(iii), § 63.1407(b)(2), or § 63.1408(b)(2), the following information, as appropriate, shall be included:
  - (i) The cumulative average monthly emission rate or the 12-month rolling average monthly emission rate, as appropriate.
  - (ii) The individual monthly emission rate data points making up the cumulative average monthly emission rate or the 12-month rolling average monthly emission rate, as appropriate.
  - (iii) If an owner or operator is demonstrating compliance using the procedures in § 63.1413(e)(2)(ii), the monthly value of the site-specific emission limit.
- (6) 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 (e)(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 shall be submitted, but a complete test report is not required.



- (7) The Periodic Report shall include the results for each change made to a primary product determination for amino/phenolic resins made under § 63.1400(g).
- (8) The Periodic Report shall include the results for each change made to a predominant use determination for a storage vessel belonging to an affected source subject to this subpart that is made under § 63.1400(h)(6).
- (9) If an owner or operator invokes the delay of repair provisions for a heat exchange system, the following information shall be submitted, as appropriate. If the leak remains unrepaired, the information shall also be submitted in each subsequent periodic report until repair of the leak is reported.
  - (i) The presence of the leak and the date that the leak was detected.
  - (ii) Whether or not the leak has been repaired. If the leak is repaired, the date the leak was successfully repaired. If the leak remains unrepaired, the expected date of repair.
  - (iii) The reason(s) for delay of repair. If delay of repair is invoked due to the reasons described in § 63.1409(e)(2), documentation of emissions estimates shall be included.
- (10) Notification that the owner or operator has elected to comply with § 63.1416(h), Reduced Recordkeeping Program.
- (11) Notification that the owner or operator has elected to not retain the daily average, batch cycle daily average, or block average values, as appropriate, as specified in § 63.1416(h)(2)(i).
- (12) The owner or operator of an affected source shall submit quarterly reports for particular emission points as specified in paragraphs (f)(12)(i) through (iv) of this section.
  - (i) The owner or operator of an affected source shall submit quarterly reports for a period of 1 year for an emission point if the Administrator requests the owner or operator to submit quarterly reports for the emission point.
  - (ii) The quarterly reports shall include all information specified in paragraphs (f)(3) through (11) and (13) through (16) of this section applicable to the emission point for which quarterly reporting is required under paragraph (f)(12)(i) of this section. Information applicable to other emission points within the affected source shall be submitted in the semiannual reports required under paragraph (f)(1) of this section.
  - (iii) Quarterly reports shall be submitted no later than 60 days after the end of each quarter.
  - (iv) After quarterly reports have been submitted for an emission point for 1 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.
- (13) For pressure relief devices, Periodic Reports must include the information specified in paragraphs (f)(13)(i) through (iii) of this section.
  - (i) For pressure relief devices in organic HAP service subject to § 63.1411, report confirmation that all monitoring to show compliance was conducted within the reporting period.
  - (ii) For pressure relief devices in organic HAP gas or vapor service subject to § 63.1411(b), report any instrument reading of 500 ppm above background or greater, more than 5 days after the relief device returns to organic HAP gas or vapor service after a pressure release.

- (iii) For pressure relief devices in organic HAP service subject to § 63.1411(c), report each pressure release to the atmosphere, including the following information:
  - (A) The source, nature, and cause of the pressure release.
  - (B) The date, time, and duration of the pressure release.
  - (C) An estimate of the quantity of total HAP emitted during the pressure release and the method used for determining this quantity.
  - (D) The actions taken to prevent this pressure release.
  - (E) The measures adopted to prevent future such pressure releases.

- (14) If there is a deviation from the mass emission limit specified in § 63.1405(b)(2)(i), the report shall include the daily average emission rate calculated for each operating day for which a deviation occurred.
- (15) If there is a deviation from the emission rate limit specified in § 63.1405(b)(2)(ii) or (iii), the report shall include the following information for each operating day for which a deviation occurred:
  - (i) The calculated average hourly emission rate.
  - (ii) The individual hourly emission rate data points making up the average hourly emission rate.
- (16) For periods of storage vessel routine maintenance in which a control device is bypassed, the owner or operator shall submit the information specified in § 63.1416(g)(6)(i) through (iii) of this subpart.

(g) **Reports of Malfunctions.** If a source fails to meet an applicable standard, report such events in the Periodic Report. Report the number of failures to meet an applicable standard. For each instance, report the date, time and duration of each failure. For each failure the report must include 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.

(h) **Other reports.** Other reports shall be submitted as specified in paragraphs (h)(1) through (8) of this section.

- (1) For storage vessels, the notifications of inspections required by 40 CFR part 63, subpart WW shall be submitted.
- (2) A site-specific test plan shall be submitted no later than 90 days before the planned date for a performance test. Unless the Administrator requests changes to the site-specific test plan within 45 days after its receipt, the site-specific test plan shall be deemed approved. The test plan shall include a description of the planned test and rationale for why the planned performance test will provide adequate and representative results for demonstrating the performance of the control device. If required by § 63.1413(e)(1) or § 63.1414(d)(5), the test plan shall include an emission profile and rationale for why the selected test period is representative.
- (3) The owner or operator shall notify the Administrator of the intention to conduct a performance test at least 30 days before the performance test is scheduled in order to allow the Administrator the opportunity to have an observer present during the test. If after 30 days notice for an initially scheduled performance test, there is delay (due to operational problems, etc.) in conducting the scheduled performance test, the owner or operator of an affected source shall notify the

Administrator as soon as possible of any delay in the original test date, either by providing at least 7 days prior notice of the rescheduled date of the performance test, or by arranging a rescheduled date with the Administrator by mutual agreement.

- (4) When the conditions of § 63.1400(g)(7) or the conditions of § 63.1400(g)(8) are met, notification of changes to the primary product for an APPU or process unit shall be submitted. When a notification is made in response to a change in the primary product under § 63.1400(g)(7), rationale for why it is anticipated that no amino/phenolic resins will be produced in the process unit in the future shall be included.
- (5) Owners or operators of APPU or emission points (other than equipment leak components subject to § 63.1410) that are added to the affected source under the provisions of § 63.1400(d)(2) or (3) or under the provisions of § 63.5(b)(6) shall submit reports as specified in paragraphs (h)(5)(i) through (ii) of this section.
  - (i) Reports shall include:
    - (A) A description of the process change or addition, as appropriate;
    - (B) The planned start-up date and the appropriate compliance date; and
    - (C) Identification of the emission points (except equipment leak components subject to § 63.1410) specified in paragraphs (h)(5)(i)(C)(1) through (3) of this section, as applicable.
      - (1) All the emission points in an added APPU.
      - (2) All the emission points in an affected source that becomes a new affected source.
      - (3) All the added or created emission points resulting from a process change.
  - (ii) If the owner or operator wishes to request approval to use alternative monitoring parameters, alternative continuous monitoring or recordkeeping, alternative controls, engineering assessment to estimate organic HAP emissions from a batch emissions episode, or wishes to establish parameter monitoring levels according to the procedures contained in § 63.1413(a)(1)(ii) or (ii), a Precompliance Report shall be submitted no later than 180 days prior to the appropriate compliance date.
- (6) The information specified in paragraphs (h)(6)(i) and (ii) of this section shall be submitted when a small control device becomes a large control device, as specified in § 63.1413(a)(1)(ii).
  - (i) Notification that a small control device has become a large control device and the site-specific test plan shall be submitted within 60 days of the date the small control device becomes a large control device. The site-specific test plan shall include the information specified in paragraph (h)(2) of this section. Approval of the site-specific test plan shall follow paragraph (h)(2) of this section.
  - (ii) Results of the performance test required by § 63.1413(a)(1)(ii) shall be submitted within 150 days of the date the small control device becomes a large control device.
- (7) Whenever a continuous process vent becomes subject to control requirements under § 63.1405, as a result of a process change, the owner or operator shall submit a report within 60 days after the performance test or applicability assessment, whichever is sooner. The report may be submitted as part of the next Periodic Report required by paragraph (f) of this section.
  - (i) The report shall include the following information:

- (A) A description of the process change;
  - (B) The results of the recalculation of the organic HAP concentration, volumetric flow rate, and or TRE index value required under § 63.1412 and recorded under § 63.1416(f).
  - (C) A statement that the owner or operator will comply with the requirements specified in § 63.1405.
- (ii) If a performance test is required as a result of a process change, the owner or operator shall specify that the performance test has become necessary due to a process change. This specification shall be made in the performance test notification to the Administrator, as specified in paragraph (h)(3) of this section.
- (iii) If a process change does not result in additional applicable requirements, then the owner or operator shall include a statement documenting this in the next Periodic Report required by paragraph (f) of this section.
- (8) **Electronic reporting.** Within 60 days after the date of completing each performance test (as defined in § 63.2), the owner or operator must submit the results of the performance tests, including any associated fuel analyses, required by this subpart according to the methods specified in paragraphs (h)(8)(i) or (ii) of this section.
  - (i) For data collected using test methods supported by the EPA-provided software, the owner or operator shall submit the results of the performance test to the EPA by direct computer-to-computer electronic transfer via EPA-provided software, unless otherwise approved by the Administrator. Owners or operators, who claim that some of the information being submitted for performance tests is confidential business information (CBI), must submit a complete file using EPA-provided software that includes 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: WebFIRE Administrator, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. The same file with the CBI omitted must be submitted to the EPA by direct computer-to-computer electronic transfer via EPA-provided software.
  - (ii) For any performance test conducted using test methods that are not compatible with the EPA-provided software, the owner or operator shall submit the results of the performance test to the Administrator at the appropriate address listed in § 60.4.
- (i) **Operating permit application.** An owner or operator who submits an operating permit application instead of a Precompliance Report shall submit the information specified in paragraph (d) of this section, Precompliance Report, as applicable.
- (j) **Alternative monitoring parameters.** The owner or operator who has been directed by any section of this subpart or any section of another subpart referenced by this subpart that expressly referenced this paragraph (j) to set unique monitoring parameters, or who requests approval to monitor a different parameter than those specified in § 63.1415(b), shall submit the information specified in paragraphs (j)(1) through (3) of this section in the Precompliance Report, as required by paragraph (d) of this section.
  - (1) The required information shall include a description of the parameter(s) to be monitored to ensure the recovery device, control device, or control technology is operated in conformance with its design and achieves the specified emission limit or percent reduction and an explanation of the criteria used to select the parameter(s).

- (2) The required information shall include a description of the methods and procedures that will be used to demonstrate that the parameter indicates proper operation, the schedule for this demonstration, and a statement that the owner or operator will establish a level for the monitored parameter as part of the Notification of Compliance Status report required in paragraph (e) of this section, unless this information has already been included in the operating permit application.
- (3) The required information shall include a description of the proposed monitoring, recordkeeping, and reporting system to include the frequency and content of monitoring, recordkeeping, and reporting. Further, the rationale for the proposed monitoring, recordkeeping, and reporting system shall be included if either condition in paragraph (j)(3)(i) or (ii) of this section is met:
  - (i) If monitoring and recordkeeping is not continuous; or
  - (ii) If reports of daily average values will not be included in Periodic Reports when the monitored parameter value is above the maximum level or below the minimum level as established in the operating permit or the Notification of Compliance Status.

(k) **Alternative continuous monitoring.** An owner or operator choosing not to implement the monitoring provisions specified in § 63.1415 for storage vessels, continuous process vents, batch process vents, or aggregate batch vent streams may instead request approval to use alternative continuous monitoring provisions according to the procedures specified in paragraphs (k)(1) through (4) of this section. Requests shall be submitted in the Precompliance Report as specified in paragraph (d)(4) of this section if not already included in the operating permit application and shall contain the information specified in paragraphs (k)(2)(i) and (ii) of this section, as applicable.

- (1) The provisions in § 63.8(f)(5)(i) shall govern the review and approval of requests.
- (2) An owner or operator of an affected source that does not have an automated monitoring and recording system capable of measuring parameter values at least once every 15 minutes and that does not generate continuous records may request approval to use a nonautomated system with less frequent monitoring in accordance with paragraphs (k)(2)(i) and (ii) of this section.
  - (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 (or batch cycle 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 affected 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 or recovery device operating conditions, considering typical variability of the specific process and control or recovery device operating parameter being monitored.
- (3) 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, in accordance with paragraphs (k)(3)(i) and (ii) of this section.

- (i) The requested system shall be designed to:
  - (A) Measure the operating parameter value at least once every 15 minutes;
  - (B) Except for the monitoring of batch process vents, calculate hourly average 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) Calculate daily average, batch cycle daily average, or block average values of the monitored operating parameter based on all measured data; and
  - (F) If the daily average is not a deviation, as defined in § 63.1413(i), from the operating parameter, 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) A description of the monitoring system and data compression recording system, including the criteria used to determine which monitored values are recorded and retained;
  - (B) The method for calculating daily averages and batch cycle daily averages; and
  - (C) A demonstration that the system meets all criteria in paragraph (k)(3)(i) of this section.
- (4) An owner or operator may request approval to use other alternative monitoring systems according to the procedures specified in § 63.8(f)(4).

[65 FR 3290, Jan. 20, 2000, as amended at 79 FR 60933, Oct. 8, 2014; 83 FR 51856, Oct. 15, 2018]

## § 63.1418 [Reserved]

## § 63.1419 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 the requirements in §§ 63.1400 through 63.1401 and 63.1404 through 63.1410. 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.

[68 FR 37359, June 23, 2003]

**Table 1 to Subpart 000 of Part 63—Applicability of General Provisions to Subpart 000 Affected Sources**

| Reference               | Applies to subpart 000 | Explanation                                                                                                                                           |
|-------------------------|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| 63.1(a)(1)              | Yes                    | § 63.1402 specifies definitions in addition to or that supersede definitions in § 63.2.                                                               |
| 63.1(a)(2)              | Yes                    |                                                                                                                                                       |
| 63.1(a)(3)              | Yes                    | § 63.1401(i) identifies those standards which overlap with the requirements of subpart 000 of this part and specify how compliance shall be achieved. |
| 63.1(a)(4)              | Yes                    | Subpart 000 (this table) specifies the applicability of each paragraph in subpart A of this part.                                                     |
| 63.1(a)(5)              | No                     | [Reserved].                                                                                                                                           |
| 63.1(a)(6)              | Yes                    |                                                                                                                                                       |
| 63.1(a)(7)-63.1(a)(9)   | No                     | [Reserved].                                                                                                                                           |
| 63.1(a)(10)             | Yes                    |                                                                                                                                                       |
| 63.1(a)(11)             | Yes                    |                                                                                                                                                       |
| 63.1(a)(12)-63.1(a)(14) | Yes                    |                                                                                                                                                       |
| 63.1(b)(1)              | No                     |                                                                                                                                                       |
| 63.1(b)(2)              | Yes                    |                                                                                                                                                       |
| 63.1(b)(3)              | No                     | § 63.1400(e) provides documentation requirements for APPUs not considered affected sources.                                                           |
| 63.1(c)(1)              | Yes                    | Subpart 000 (this table) specifies the applicability of each paragraph in subpart A of this part.                                                     |
| 63.1(c)(2)              | No                     | Area sources are not subject to this subpart.                                                                                                         |
| 63.1(c)(3)              | No                     | [Reserved].                                                                                                                                           |

| Reference             | Applies to subpart 000 | Explanation                                                                                                              |
|-----------------------|------------------------|--------------------------------------------------------------------------------------------------------------------------|
| 63.1(c)(4)            | No                     | [Reserved].                                                                                                              |
| 63.1(c)(5)            | Yes                    | Except that affected sources are not required to submit notifications overridden by this table.                          |
| 63.1(c)(6)            | Yes                    |                                                                                                                          |
| 63.1(d)               | No                     | [Reserved].                                                                                                              |
| 63.1(e)               | Yes                    |                                                                                                                          |
| 63.2                  | Yes                    | § 63.1402 specifies the definitions from subpart A of this part that apply to this subpart.                              |
| 63.3                  | Yes                    |                                                                                                                          |
| 63.4(a)(1)-63.4(a)(3) | Yes                    |                                                                                                                          |
| 63.4(a)(4)            | No                     | [Reserved].                                                                                                              |
| 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” should be interpreted as having the same meaning as “affected source.” |
| 63.5(a)(2)            | Yes                    |                                                                                                                          |
| 63.5(b)(1)            | Yes                    | Except § 63.1400(d) specifies when construction or reconstruction is subject to new source standards.                    |
| 63.5(b)(2)            | No                     | [Reserved].                                                                                                              |
| 63.5(b)(3)            | Yes                    |                                                                                                                          |
| 63.5(b)(4)            | Yes                    | Except that the Initial Notification and § 63.9(b) requirements do not apply.                                            |
| 63.5(b)(5)            | Yes                    |                                                                                                                          |
| 63.5(b)(6)            | Yes                    | Except that § 63.1400(d) specifies when construction or reconstruction is subject to new source standards.               |
| 63.5(c)               | No                     | [Reserved].                                                                                                              |
| 63.5(d)(1)(i)         | Yes                    | Except that the references to the Initial Notification and § 63.9(b)(5) do not apply.                                    |
| 63.5(d)(1)(ii)        | Yes                    | Except that § 63.5(d)(1)(ii)(H) does not apply.                                                                          |
| 63.5(d)(1)(iii)       | No                     | § 63.1417(e) specifies Notification of Compliance Status requirements.                                                   |
| 63.5(d)(2)            | No                     |                                                                                                                          |
| 63.5(d)(3)            | Yes                    | Except § 63.5(d)(3)(ii) does not apply, and equipment leaks subject to § 63.1410 are exempt.                             |
| 63.5(d)(4)            | Yes                    |                                                                                                                          |
| 63.5(e)               | Yes                    |                                                                                                                          |
| 63.5(f)(1)            | Yes                    |                                                                                                                          |



| Reference        | Applies to subpart 000 | Explanation                                                                                                                                                        |
|------------------|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 63.5(f)(2)       | Yes                    | Except that where § 63.9(b)(2) is referred to, the owner or operator need not comply.                                                                              |
| 63.6(a)          | Yes                    |                                                                                                                                                                    |
| 63.6(b)(1)       | Yes                    |                                                                                                                                                                    |
| 63.6(b)(2)       | Yes                    |                                                                                                                                                                    |
| 63.6(b)(3)       | Yes                    |                                                                                                                                                                    |
| 63.6(b)(4)       | Yes                    |                                                                                                                                                                    |
| 63.6(b)(5)       | Yes                    |                                                                                                                                                                    |
| 63.6(b)(6)       | No                     | [Reserved].                                                                                                                                                        |
| 63.6(b)(7)       | No                     |                                                                                                                                                                    |
| 63.6(c)(1)       | Yes                    | Except that § 63.1401 specifies the compliance date.                                                                                                               |
| 63.6(c)(2)       | No                     |                                                                                                                                                                    |
| 63.6(c)(3)       | No                     | [Reserved].                                                                                                                                                        |
| 63.6(c)(4)       | No                     | [Reserved].                                                                                                                                                        |
| 63.6(c)(5)       | Yes                    |                                                                                                                                                                    |
| 63.6(d)          | No                     | [Reserved].                                                                                                                                                        |
| 63.6(e)          | Yes                    | Except as otherwise specified in this table.                                                                                                                       |
| 63.6(e)(1)(i)    | No                     | See § 63.1400(k)(4) for general duty requirement.                                                                                                                  |
| 63.6(e)(1)(ii)   | No                     |                                                                                                                                                                    |
| 63.6(e)(1)(iii)  | Yes                    |                                                                                                                                                                    |
| 63.6(e)(2)       | Yes                    |                                                                                                                                                                    |
| 63.6(e)(3)       | No                     |                                                                                                                                                                    |
| 63.6(f)(1)       | No                     |                                                                                                                                                                    |
| 63.6(f)(2)       | Yes                    | Except § 63.7(c), as referred to in § 63.6(f)(2)(iii)(D), does not apply, and except that § 63.6(f)(2)(ii) does not apply to equipment leaks subject to § 63.1410. |
| 63.6(f)(3)       | Yes                    |                                                                                                                                                                    |
| 63.6(g)          | Yes                    |                                                                                                                                                                    |
| 63.6(h)          | No                     | This subpart 000 does not require opacity and visible emission standards.                                                                                          |
| 63.6(i)(1)       | Yes                    |                                                                                                                                                                    |
| 63.6(i)(2)       | Yes                    |                                                                                                                                                                    |
| 63.6(i)(3)       | Yes                    |                                                                                                                                                                    |
| 63.6(i)(4)(i)(A) | Yes                    |                                                                                                                                                                    |
| 63.6(i)(4)(i)(B) | No                     | Dates are specified in §§ 63.1401(e) and 63.1417(d)(1).                                                                                                            |
| 63.6(i)(4)(ii)   | No                     |                                                                                                                                                                    |
| 63.6(i)(5)-(14)  | Yes                    |                                                                                                                                                                    |

| Reference       | Applies to subpart 000 | Explanation                                                                                                                                                                                                                                                                          |
|-----------------|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 63.6(i)(15)     | No                     | [Reserved].                                                                                                                                                                                                                                                                          |
| 63.6(i)(16)     | Yes                    |                                                                                                                                                                                                                                                                                      |
| 63.6(j)         | Yes                    |                                                                                                                                                                                                                                                                                      |
| 63.7(a)(1)      | Yes                    |                                                                                                                                                                                                                                                                                      |
| 63.7(a)(2)      | No                     |                                                                                                                                                                                                                                                                                      |
|                 |                        | § 63.1417(e) specifies the submittal dates of performance test results for all emission points except equipment leaks; for equipment leaks, compliance demonstration results are reported in the Periodic Reports.                                                                   |
| 63.7(a)(3)      | Yes                    |                                                                                                                                                                                                                                                                                      |
| 63.7(b)         | No                     | § 63.1417 specifies notification requirements.                                                                                                                                                                                                                                       |
| 63.7(c)         | No                     |                                                                                                                                                                                                                                                                                      |
| 63.7(d)         | Yes                    |                                                                                                                                                                                                                                                                                      |
| 63.7(e)(1)      | No                     | See § 63.1413(a)(2).                                                                                                                                                                                                                                                                 |
| 63.7(e)(2)      | Yes                    |                                                                                                                                                                                                                                                                                      |
| 63.7(e)(3)      | No                     | Subpart 000 specifies requirements.                                                                                                                                                                                                                                                  |
| 63.7(e)(4)      | Yes                    |                                                                                                                                                                                                                                                                                      |
| 63.7(f)         | Yes                    | Except that if a site specific test plan is not required, the notification deadline in § 63.7(f)(2)(i) shall be 60 days prior to the performance test, and in § 63.7(f)(3), approval or disapproval of the alternative test method shall not be tied to the site specific test plan. |
|                 |                        |                                                                                                                                                                                                                                                                                      |
| 63.7(g)         | Yes                    | Except that the requirements in § 63.1417(e) shall apply instead of the references to the Notification of Compliance Status report in § 63.9(h). In addition, equipment leaks subject to § 63.1410 are not required to conduct performance tests.                                    |
| 63.7(h)         | Yes                    | Except § 63.7(h)(4)(ii) may not be applicable, if the site-specific test plan in § 63.7(c)(2) is not required.                                                                                                                                                                       |
| 63.8(a)(1)      | Yes                    |                                                                                                                                                                                                                                                                                      |
| 63.8(a)(2)      | No                     |                                                                                                                                                                                                                                                                                      |
| 63.8(a)(3)      | No                     | [Reserved].                                                                                                                                                                                                                                                                          |
| 63.8(a)(4)      | Yes                    |                                                                                                                                                                                                                                                                                      |
| 63.8(b)(1)      | Yes                    |                                                                                                                                                                                                                                                                                      |
| 63.8(b)(2)      | No                     | Subpart 000 specifies locations to conduct monitoring.                                                                                                                                                                                                                               |
| 63.8(b)(3)      | Yes                    |                                                                                                                                                                                                                                                                                      |
| 63.8(c)(1)      | Yes                    |                                                                                                                                                                                                                                                                                      |
| 63.8(c)(1)(i)   | No                     |                                                                                                                                                                                                                                                                                      |
| 63.8(c)(1)(ii)  | No                     |                                                                                                                                                                                                                                                                                      |
| 63.8(c)(1)(iii) | No                     |                                                                                                                                                                                                                                                                                      |

| Reference             | Applies to subpart 000 | Explanation                                                                                                                                                                                                            |
|-----------------------|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 63.8(c)(2)            | Yes                    | § 63.1415 specifies monitoring frequency; not applicable to equipment leaks because § 63.1410 does not require continuous monitoring systems.                                                                          |
| 63.8(c)(3)            | Yes                    |                                                                                                                                                                                                                        |
| 63.8(c)(4)            | No                     |                                                                                                                                                                                                                        |
| 63.8(c)(5)-63.8(c)(8) | No                     |                                                                                                                                                                                                                        |
| 63.8(d)               | No                     |                                                                                                                                                                                                                        |
| 63.8(e)               | No                     | Timeframe for submitting request is specified in § 63.1417 (j) or (k); not applicable to equipment leaks because § 63.1410 (through reference to 40 CFR part 63, subpart UU) specifies acceptable alternative methods. |
| 63.8(f)(1)-63.8(f)(3) | Yes                    |                                                                                                                                                                                                                        |
| 63.8(f)(4)(i)         | No                     | Contents of request are specified in § 63.1417(j) or (k).                                                                                                                                                              |
| 63.8(f)(4)(ii)        | No                     |                                                                                                                                                                                                                        |
| 63.8(f)(4)(iii)       | No                     |                                                                                                                                                                                                                        |
| 63.8(f)(5)(i)         | Yes                    |                                                                                                                                                                                                                        |
| 63.8(f)(5)(ii)        | No                     |                                                                                                                                                                                                                        |
| 63.8(f)(5)(iii)       | Yes                    | Subpart 000 does not require continuous emission monitors.                                                                                                                                                             |
| 63.8(f)(6)            | No                     |                                                                                                                                                                                                                        |
| 63.8(g)               | No                     | Data reduction procedures specified in § 63.1416(a) and (h); not applicable to equipment leaks.                                                                                                                        |
| 63.9(a)               | Yes                    |                                                                                                                                                                                                                        |
| 63.9(b)               | No                     | Subpart 000 does not require an initial notification.                                                                                                                                                                  |
| 63.9(c)               | Yes                    |                                                                                                                                                                                                                        |
| 63.9(d)               | Yes                    | § 63.1417 specifies notification deadlines.                                                                                                                                                                            |
| 63.9(e)               | No                     |                                                                                                                                                                                                                        |
| 63.9(f)               | No                     | Subpart 000 does not require opacity and visible emission standards.                                                                                                                                                   |
| 63.9(g)               | No                     |                                                                                                                                                                                                                        |
| 63.9(h)               | No                     | § 63.1417(e) specifies Notification of Compliance Status requirements.                                                                                                                                                 |
| 63.9(i)               | Yes                    |                                                                                                                                                                                                                        |
| 63.9(j)               | Yes                    | For change in major source status only.                                                                                                                                                                                |
| 63.9(k)               | Yes                    |                                                                                                                                                                                                                        |
| 63.10(a)              | Yes                    | Only as specified in § 63.9(j).                                                                                                                                                                                        |
| 63.10(b)(1)           | No                     |                                                                                                                                                                                                                        |
| 63.10(b)(2)           | No                     | § 63.1416(a) specifies record retention requirements.                                                                                                                                                                  |
| 63.10(b)(3)           | No                     |                                                                                                                                                                                                                        |
|                       | No                     | Subpart 000 specifies recordkeeping requirements.                                                                                                                                                                      |
|                       | No                     | § 63.1400(e) requires documentation of sources that are not                                                                                                                                                            |

| Reference   | Applies to subpart 000 | Explanation                                                                                     |
|-------------|------------------------|-------------------------------------------------------------------------------------------------|
| 63.10(c)    | No                     | affected sources.                                                                               |
| 63.10(d)(1) | Yes                    | § 63.1416 specifies recordkeeping requirements.                                                 |
| 63.10(d)(2) | No                     | § 63.1417 specifies performance test reporting requirements; not applicable to equipment leaks. |
| 63.10(d)(3) | No                     | Subpart 000 does not require opacity and visible emission standards.                            |
| 63.10(d)(4) | Yes                    |                                                                                                 |
| 63.10(d)(5) | No                     | See § 63.1417(g) for malfunction reporting requirements.                                        |
| 63.10(e)    | No                     | § 63.1417 specifies reporting requirements.                                                     |
| 63.10(f)    | Yes                    |                                                                                                 |
| 63.11       | Yes                    | Except that instead of § 63.11(b), § 63.1413(g) shall apply.                                    |
| 63.12       | Yes                    |                                                                                                 |
| 63.13-63.15 | Yes                    |                                                                                                 |

[65 FR 3290, Jan. 20, 2000, as amended at 71 FR 20461, Apr. 20, 2006; 79 FR 60934, Oct. 8, 2014; 85 FR 73899, Nov. 19, 2020]

**Table 2 to Subpart 000 of Part 63—Known Organic Hazardous Air Pollutants (HAP) From the Manufacture of Amino/Phenolic Resins**

| Organic HAP                      | CAS Number | Organic HAP subject to cooling tower monitoring requirements in § 63.1409 (Yes/No) |          |
|----------------------------------|------------|------------------------------------------------------------------------------------|----------|
|                                  |            | Column A                                                                           | Column B |
| Acrylamide                       | 79-06-1    | No                                                                                 | No       |
| Aniline                          | 62-53-3    | Yes                                                                                | No       |
| Biphenyl                         | 92-52-4    | Yes                                                                                | Yes      |
| Cresol and cresylic acid (mixed) | 1319-77-3  | Yes                                                                                | No       |
| Cresol and cresylic acid (m-)    | 108-39-4   | Yes                                                                                | No       |
| Cresol and cresylic acid (o-)    | 95-48-7    | Yes                                                                                | No       |
| Cresol and cresylic acid (p-)    | 106-44-5   | Yes                                                                                | No       |

CAS No. = Chemical Abstract Registry Number.

| Organic HAP            | CAS Number | Organic HAP subject to cooling tower monitoring requirements in § 63.1409 (Yes/No) |          |
|------------------------|------------|------------------------------------------------------------------------------------|----------|
|                        |            | Column A                                                                           | Column B |
| Diethanolamine         | 111-42-2   | No                                                                                 | No       |
| Dimethylformamide      | 68-12-2    | No                                                                                 | No       |
| Ethylbenzene           | 100-41-4   | Yes                                                                                | Yes      |
| Ethylene glycol        | 107-21-1   | No                                                                                 | No       |
| Formaldehyde           | 50-00-0    | Yes                                                                                | No       |
| Glycol ethers          | 0          | No                                                                                 | No       |
| Methanol               | 67-56-1    | Yes                                                                                | Yes      |
| Methyl ethyl ketone    | 78-93-3    | Yes                                                                                | Yes      |
| Methyl isobutyl ketone | 108-10-1   | Yes                                                                                | Yes      |
| Naphthalene            | 91-20-3    | Yes                                                                                | Yes      |
| Phenol                 | 108-95-2   | Yes                                                                                | No       |
| Styrene                | 100-42-5   | Yes                                                                                | Yes      |
| Toluene                | 108-88-3   | No                                                                                 | Yes      |
| Xylenes (NOS)          | 1330-20-7  | Yes                                                                                | Yes      |
| Xylene (m-)            | 108-38-3   | Yes                                                                                | Yes      |
| Xylene (o-)            | 95-47-6    | Yes                                                                                | Yes      |
| Xylene (p-)            | 106-42-3   | Yes                                                                                | Yes      |

CAS No. = Chemical Abstract Registry Number.

**Table 3 to Subpart OOO of Part 63—Batch Process Vent Monitoring Requirements**

| Control device        | Parameters to be monitored                    | Frequency/recordkeeping requirements                          |
|-----------------------|-----------------------------------------------|---------------------------------------------------------------|
| Scrubber <sup>a</sup> | pH of scrubber effluent, and                  | Continuous records as specified in § 63.1416(d). <sup>b</sup> |
|                       | Scrubber liquid and gas flow rates            | Continuous records as specified in § 63.1416(d). <sup>b</sup> |
| Absorber <sup>a</sup> | Exit temperature of the absorbing liquid, and | Continuous records as specified in § 63.1416(d). <sup>b</sup> |

<sup>a</sup> Alternatively, these devices may comply with the organic monitoring device provisions listed at the end of this table.

<sup>b</sup> "Continuous records" is defined in § 63.111.

<sup>c</sup> Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

| Control device                                                                                                                                                                                          | Parameters to be monitored                                                                                                   | Frequency/recordkeeping requirements                                                                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Condenser <sup>a</sup>                                                                                                                                                                                  | Exit specific gravity for the absorbing liquid                                                                               | Continuous records as specified in § 63.1416(d). <sup>b</sup>                                                                                                                   |
| Carbon adsorber <sup>a</sup>                                                                                                                                                                            | Exit (product side) temperature                                                                                              | Continuous records as specified in § 63.1416(d). <sup>a</sup>                                                                                                                   |
|                                                                                                                                                                                                         | Total regeneration steam flow or nitrogen flow, or pressure (gauge or absolute) during carbon bed regeneration cycle(s), and | Record the total regeneration steam flow or nitrogen flow, or pressure for each carbon bed regeneration cycle.                                                                  |
|                                                                                                                                                                                                         | Temperature of the carbon bed after regeneration and within 15 minutes of completing any cooling cycle(s)                    | Record the temperature of the carbon bed after each regeneration and within 15 minutes of completing any cooling cycle(s).                                                      |
| Thermal incinerator                                                                                                                                                                                     | Firebox temperature <sup>c</sup>                                                                                             | Continuous records as specified in § 63.1416(d). <sup>b</sup>                                                                                                                   |
| Catalytic incinerator                                                                                                                                                                                   | Temperature upstream and downstream of the catalyst bed                                                                      | Continuous records as specified in § 63.1416(d). <sup>b</sup>                                                                                                                   |
| Boiler or process heater with a design heat input capacity less than 44 megawatts and where the batch process vents or aggregate batch vent streams are not introduced with or used as the primary fuel | Firebox temperature <sup>c</sup>                                                                                             | Continuous records as specified in § 63.1416(d). <sup>b</sup>                                                                                                                   |
| Flare                                                                                                                                                                                                   | Presence of a flame at the pilot light                                                                                       | Hourly records of whether the monitor was continuously operating during batch emission episodes, or portions thereof, selected for control and whether a flame was continuously |

<sup>a</sup> Alternatively, these devices may comply with the organic monitoring device provisions listed at the end of this table.

<sup>b</sup> "Continuous records" is defined in § 63.111.

<sup>c</sup> Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

| Control device                                                                                                                | Parameters to be monitored                                                                                                                           | Frequency/recordkeeping requirements                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| All control devices                                                                                                           | Diversion to the atmosphere from the control device or                                                                                               | present at the pilot light during said periods.<br>Hourly records of whether the flow indicator was operating during batch emission episodes, or portions thereof, selected for control and whether a diversion was detected at any time during said periods as specified in § 63.1416(d). |
| Scrubber, absorber, condenser, and carbon adsorber (as an alternative to the requirements previously presented in this table) | Monthly inspections of sealed valves<br>Concentration level or reading indicated by an organic monitoring device at the outlet of the control device | Records that monthly inspections were performed as specified in § 63.1416(d).<br>Continuous records as specified in § 63.1416(d). <sup>b</sup>                                                                                                                                             |

<sup>a</sup> Alternatively, these devices may comply with the organic monitoring device provisions listed at the end of this table.

<sup>b</sup> "Continuous records" is defined in § 63.111.

<sup>c</sup> Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.

**Table 4 to Subpart 000 of Part 63—Operating Parameter Levels**

| Device    | Parameters to be monitored                                                                  | Established operating parameter(s)                |
|-----------|---------------------------------------------------------------------------------------------|---------------------------------------------------|
| Scrubber  | pH of scrubber effluent; and scrubber liquid and gas flow rates                             | Minimum pH; and minimum liquid/gas ratio          |
| Absorber  | Exit temperature of the absorbing liquid; and exit specific gravity of the absorbing liquid | Maximum temperature; and maximum specific gravity |
| Condenser | Exit temperature                                                                            | Maximum                                           |

<sup>a</sup> 25 to 50 mm (absolute) is a common pressure level obtained by pressure swing absorbers.

<sup>b</sup> Concentration is measured instead of an operating parameter.

| Device                                                                                                 | Parameters to be monitored                                                                                                                                                                                                                    | Established operating parameter(s)                                                       |
|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Carbon absorber                                                                                        | Total regeneration steam or nitrogen flow, or pressure (gauge or absolute) <sup>a</sup> during carbon bed regeneration cycle; and temperature of the carbon bed after regeneration (and within 15 minutes of completing any cooling cycle(s)) | temperature<br>Maximum flow or pressure; and maximum temperature                         |
| Thermal incinerator                                                                                    | Firebox temperature                                                                                                                                                                                                                           | Minimum temperature                                                                      |
| Catalytic incinerator                                                                                  | Temperature upstream and downstream of the catalyst bed                                                                                                                                                                                       | Minimum upstream temperature; and minimum temperature difference across the catalyst bed |
| Boiler or process heater                                                                               | Firebox temperature                                                                                                                                                                                                                           | Minimum temperature                                                                      |
| Other devices (or as an alternate to the requirements previously presented in this table) <sup>b</sup> | Organic HAP concentration level or reading at outlet of device                                                                                                                                                                                | Maximum organic HAP concentration or reading                                             |

<sup>a</sup> 25 to 50 mm (absolute) is a common pressure level obtained by pressure swing absorbers.

<sup>b</sup> Concentration is measured instead of an operating parameter.

**Table 5 to Subpart 000 of Part 63—Reports Required by This Subpart**

| Reference                               | Description of report                       | Due date                                                                                                                                                |
|-----------------------------------------|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| § 63.1400(j) and Subpart A of this part | Refer to Table 1 and Subpart A of this part | Refer to Subpart A of this part.                                                                                                                        |
| 63.1417(d)                              | Precompliance Report                        | Existing affected sources—12 months prior to the compliance date. New affected sources—with application for approval of construction or reconstruction. |

<sup>a</sup> Note that the APPU remains subject to this subpart until the notification under § 63.1400(g)(7) is made.



| Reference      | Description of report                                                                    | Due date                                                                                                                             |
|----------------|------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| 63.1417(e)     | Notification of Compliance Status                                                        | Within 150 days after the compliance date.                                                                                           |
| 63.1417(f)     | Periodic Reports                                                                         | Semiannually, no later than 60 days after the end of each 6-month period. See § 63.1417(f)(1) for the due date for the first report. |
| 63.1417(f)(12) | Quarterly reports upon request of the administrator                                      | No later than 60 days after the end of each quarter.                                                                                 |
| 63.1417(g)     | Start-up, shutdown, and malfunction reports                                              | Semiannually (same schedule as Periodic reports).                                                                                    |
| 63.1417(h)(1)  | Notification of storage vessel inspection                                                | As specified in 40 CFR part 63, subpart WW.                                                                                          |
| 63.1417(h)(2)  | Site-specific test plan                                                                  | 90 days prior to planned date of test.                                                                                               |
| 63.1417(h)(3)  | Notification of planned performance test                                                 | 30 days prior to planned date of test.                                                                                               |
| 63.1417(h)(4)  | Notification of change in primary product                                                | As specified in § 63.1400 (g)(7) or (g)(8).                                                                                          |
| 63.1417(h)(5)  | Notification of added emission points                                                    | 180 days prior to the appropriate compliance date.                                                                                   |
| 63.1417(h)(6)  | Notification that a small control device has been redesignated as a large control device | Within 60 days of the redesignation of control device size.                                                                          |
| 63.1417(h)(7)  | Notification of process change                                                           | Within 60 days after performance test or applicability assessment, whichever is sooner.                                              |
| 63.1417(h)(8)  | Electronic reporting                                                                     | Within 60 days after completing performance test.                                                                                    |

<sup>a</sup> Note that the APPU remains subject to this subpart until the notification under § 63.1400(g)(7) is made.

[65 FR 3290, Jan. 20, 2000, as amended at 79 FR 60935, Oct. 8, 2014]

**Table 6 to Subpart OOO of Part 63—Coefficients for Total Resource Effectiveness<sup>a</sup>**

| Control device basis | Values of coefficients |                       |                        |
|----------------------|------------------------|-----------------------|------------------------|
|                      | A                      | B                     | C                      |
| Flare                | $5.276 \times 10^{-1}$ | $9.98 \times 10^{-2}$ | $2.096 \times 10^{-3}$ |

<sup>a</sup> Use according to procedures outlined in this section.

MJ/scm = MegaJoules per standard cubic meter.

scm/min = Standard cubic meters per minute.

| Control device basis                    | Values of coefficients |                       |                        |
|-----------------------------------------|------------------------|-----------------------|------------------------|
|                                         | A                      | B                     | C                      |
| Thermal Incinerator 0 Percent Recovery  | $4.068 \times 10^{-1}$ | $1.71 \times 10^{-2}$ | $8.664 \times 10^{-3}$ |
| Thermal Incinerator 70 Percent Recovery | $6.868 \times 10^{-1}$ | $3.21 \times 10^{-3}$ | $3.546 \times 10^{-3}$ |

<sup>a</sup> Use according to procedures outlined in this section.

MJ/scm = MegaJoules per standard cubic meter.

scm/min = Standard cubic meters per minute.

## **Appendix H**

40 C.F.R. § 61 Subpart FF – *National Emission Standards for Benzene Waste Operations*



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This content is from the eCFR and is authoritative but unofficial.

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## 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 m<sup>3</sup> (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 m<sup>3</sup> (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  $\pm 1$  percent of the temperature being monitored in  $^{\circ}\text{C}$  or  $\pm 0.5$   $^{\circ}\text{C}$ , 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  $\pm 1$  percent of the temperature being monitored in  $^{\circ}\text{C}$  or  $\pm 0.5$   $^{\circ}\text{C}$ , 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 ( $150 \times 10^6$  BTU/hr), a temperature monitoring device equipped with a continuous recorder. The device shall have an accuracy of  $\pm 1$  percent of the temperature being monitored in  $^{\circ}\text{C}$  or  $\pm 0.5$   $^{\circ}\text{C}$ , 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 ( $150 \times 10^6$  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  $\pm 1$  percent of the temperature being monitored in  $^{\circ}\text{C}$  or  $\pm 0.5$   $^{\circ}\text{C}$ , 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/m<sup>3</sup> (lb/ft<sup>3</sup>).

$V_i$  = Average volume flow rate of waste entering the treatment process during each run  $i$ , m<sup>3</sup>/hr (ft<sup>3</sup>/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/m<sup>3</sup> (lb/ft<sup>3</sup>).

$V_i$  = Average volume flow rate of waste exiting the treatment process during each run  $i$ , m<sup>3</sup>/hr (ft<sup>3</sup>/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/m<sup>3</sup> (lb/ft<sup>3</sup>).

$V_i$  = Average volume flow rate of waste entering the combustion unit during each run  $i$ , m<sup>3</sup>/hr (ft<sup>3</sup>/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<sub>b</sub> = Mass flow rate of benzene entering the combustion unit, kg/hr (lb/hr).

E<sub>a</sub> = 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:

$$M_{aj} = \frac{K_1 V_{aj}}{10^6} \left( \sum_{i=1}^n C_{ai} MW_i \right)$$


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$$M_{bj} = \frac{K_1 V_{bj}}{10^6} \left( \sum_{i=1}^n C_{bi} MW_i \right)$$

$M_{aj}$  = 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,  $m^3$  ( $ft^3$ ).

$V_{bj}$  = Volume of vent stream exiting the control device during run j, at standard conditions,  $m^3$  ( $ft^3$ ).

$C_{ai}$  = 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/ft<sup>3</sup>)

$10^{-6}$  = 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<sub>b</sub> = Mass flow rate of organics or benzene entering the control device, kg/hr (lb/hr).

E<sub>a</sub> = 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 ( $150 \times 10^6$  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 ( $150 \times 10^6$  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 × 10<sup>6</sup> 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]

## **Appendix I**

40 C.F.R. § 63 Subpart ZZZZ – *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE)*



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This content is from the eCFR and is authoritative but unofficial.

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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 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?

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**§ 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  
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HP Located at a Major Source of HAP Emissions, Existing CI  
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**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

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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 (CO<sub>2</sub>). If pollutant concentrations are to be corrected to 15 percent oxygen and CO<sub>2</sub> concentration is measured in lieu of oxygen concentration measurement, a CO<sub>2</sub> correction factor is needed. Calculate the CO<sub>2</sub> correction factor as described in paragraphs (e)(2)(i) through (iii) of this section.

- (i) Calculate the fuel-specific F<sub>O</sub> 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<sub>O</sub> = Fuel factor based on the ratio of oxygen volume to the ultimate CO<sub>2</sub> volume produced by the fuel at zero percent excess air.

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

F<sub>d</sub> = Ratio of the volume of dry effluent gas to the gross calorific value of the fuel from Method 19, dsm<sup>3</sup>/J (dscf/10<sup>6</sup> Btu).

F<sub>C</sub> = Ratio of the volume of CO<sub>2</sub> produced to the gross calorific value of the fuel from Method 19, dsm<sup>3</sup>/J (dscf/10<sup>6</sup> Btu)

- (ii) Calculate the CO<sub>2</sub> correction factor for correcting measurement data to 15 percent O<sub>2</sub>, as follows:

$$X_{CO2} = \frac{5.9}{F_O} \quad (Eq. 3)$$

Where:

X<sub>CO2</sub> = CO<sub>2</sub> correction factor, percent.

5.9 = 20.9 percent O<sub>2</sub>—15 percent O<sub>2</sub>, the defined O<sub>2</sub> correction value, percent.

- (iii) Calculate the CO, THC, and formaldehyde gas concentrations adjusted to 15 percent O<sub>2</sub> using CO<sub>2</sub> as follows:

$$C_{adj} = C_d \frac{X_{CO2}}{\%CO_2} \quad (Eq. 4)$$

Where:

C<sub>adj</sub> = Calculated concentration of CO, THC, or formaldehyde adjusted to 15 percent O<sub>2</sub>.

C<sub>d</sub> = Measured concentration of CO, THC, or formaldehyde, uncorrected.

$X_{CO_2}$  = CO<sub>2</sub> correction factor, percent.

%CO<sub>2</sub> = Measured CO<sub>2</sub> 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 O<sub>2</sub> or CO<sub>2</sub> 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 CO<sub>2</sub> 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 O<sub>2</sub> using one of the O<sub>2</sub> measurement methods specified in Table 4 of this subpart. Measurements to determine O<sub>2</sub> 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 O<sub>2</sub> 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 O<sub>2</sub> using one of the O<sub>2</sub> measurement methods specified in Table 4 of this subpart. Measurements to determine O<sub>2</sub> 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 O<sub>2</sub> 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](mailto: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](mailto: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 CO<sub>2</sub>.

**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 CO<sub>2</sub>.

**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<sub>x</sub>) control device for rich burn engines that, in a two-step reaction, promotes the conversion of excess oxygen, NO<sub>x</sub>, CO, and volatile organic compounds (VOC) into CO<sub>2</sub>, 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 C<sub>3</sub>H<sub>8</sub>.

*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<sub>x</sub> (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 PPPPP 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 .<br>..        | 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. <sup>1</sup> |

<sup>1</sup> 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 <sub>2</sub> |                                          |

<sup>1</sup> 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<br>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 <sub>2</sub> 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<br>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. <sup>1</sup> |
| 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<br>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.                                                                                                                                                                                                                                                                                                                                                                                      |

<sup>1</sup> 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 <sub>2</sub> and not using NSCR. |                                                                                          |

<sup>1</sup> 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<br>b. Limit concentration of formaldehyde in the stationary RICE exhaust to 12 ppmvd or less at 15 percent O <sub>2</sub> . 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 <sub>2</sub> 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. <sup>1</sup> |
| 2. 4SLB stationary RICE | a. Reduce CO emissions by 93 percent or more; or<br>b. Limit concentration of formaldehyde in the stationary RICE exhaust to 14 ppmvd or less at 15 percent O <sub>2</sub>                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                   |
| 3. CI stationary RICE   | a. Reduce CO emissions by 70 percent or more; or                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                   |

<sup>1</sup> 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 <sub>2</sub> |                                          |

<sup>1</sup> 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<br>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. <sup>1</sup> |
| 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                                                                                                                                                                                                                                                                                                                                                   |

<sup>1</sup> 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 . . .                                                                                                                                                                                                                                                                                                      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>oxidation catalyst</p> <p>3. New and reconstructed 2SLB and CI stationary RICE &gt;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 &gt;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 &gt;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.</p> | <p>a. water from the pressure drop across the catalyst that was measured during the initial performance test; and</p> <p>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.<sup>1</sup></p> <p>Comply with any operating limitations approved by the Administrator.</p> |

<sup>1</sup> 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 <sup>1</sup> | <p>a. Change oil and filter every 500 hours of operation or within 1 year + 30 days of the previous change, whichever comes first <sup>2</sup>.</p> <p>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;</p> <p>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 <sup>3</sup></p> | 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. <sup>3</sup> |

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> 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       | <p>a. Change oil and filter every 1,000 hours of operation or within 1 year + 30 days of the previous change, whichever comes first <sup>2</sup>.</p> <p>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;</p> <p>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 <sup>3</sup></p> |                                          |
| 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 <sub>2</sub>                                                                                                                                                                                                                                                                                                                                                                                                        |                                          |
| 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 <sub>2</sub> ; or                                                                                                                                                                                                                                                                                                                                                                                                 |                                          |

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> 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 . . . |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| <p>5. Non-Emergency, non-black start stationary CI RICE &gt;500 HP</p> <p>6. Emergency stationary SI RICE and black start stationary SI RICE.<sup>1</sup></p> | <p>b. Reduce CO emissions by 70 percent or more</p> <p>a. Limit concentration of CO in the stationary RICE exhaust to 23 ppmvd or less at 15 percent O<sub>2</sub>; or</p> <p>b. Reduce CO emissions by 70 percent or more</p> <p>a. Change oil and filter every 500 hours of operation or within 1 year + 30 days of the previous change, whichever comes first;<sup>2</sup></p> <p>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;</p> <p>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<sup>3</sup></p> |                                          |

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> 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 | <p>a. Change oil and filter every 1,440 hours of operation or within 1 year + 30 days of the previous change, whichever comes first;<sup>2</sup></p> <p>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</p> <p>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<sup>3</sup></p> |                                          |
| 8. Non-Emergency, non-black start 2SLB stationary SI RICE <100 HP                              | <p>a. Change oil and filter every 4,320 hours of operation or within 1 year + 30 days of the previous change, whichever comes first;<sup>2</sup></p> <p>b. Inspect spark plugs every 4,320 hours of</p>                                                                                                                                                                                                                                                                                                          |                                          |

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> 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;<br>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 <sup>3</sup> |                                          |
| 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 <sub>2</sub>                                                                                                                                                                                             |                                          |
| 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 <sub>2</sub>                                                                                                                                                                                              |                                          |
| 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 <sub>2</sub>                                                                                                                                                                                  |                                          |
| 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                                                                                                                                                                                                                               |                                          |

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> 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 <sub>2</sub>                                               |                                          |

<sup>1</sup> *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.*

<sup>2</sup> *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.*

<sup>3</sup> *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 | <p>a. Change oil and filter every 1,000 hours of operation or within 1 year + 30 days of the previous change, whichever comes first;<sup>1</sup></p> <p>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;</p> <p>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</p> | 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. |

<sup>1</sup> 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.

<sup>2</sup> 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 <sub>2</sub> ; 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 <sub>2</sub> ; or                                    |                                          |
|                                                                                  | b. Reduce CO emissions by 70 percent or more                                                                                                 |                                          |
| 4. Emergency stationary CI RICE and black start stationary CI RICE. <sup>2</sup> | a. Change oil and filter every 500 hours of operation or within 1 year + 30 days of the previous change, whichever comes first; <sup>1</sup> |                                          |
|                                                                                  | b. Inspect air cleaner every 1,000 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes                 |                                          |

<sup>1</sup> 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.

<sup>2</sup> 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 . . . |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| <p>5. Emergency stationary SI RICE; black start stationary SI RICE; non-emergency, non-black start 4SLB stationary RICE &gt;500 HP that operate 24 hours or less per calendar year; non-emergency, non-black start 4SRB stationary RICE &gt;500 HP that operate 24 hours or less per calendar year.<sup>2</sup></p> | <p>first, and replace as necessary; and</p> <p>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</p> <p>a. Change oil and filter every 500 hours of operation or within 1 year + 30 days of the previous change, whichever comes first;<sup>1</sup></p> <p>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</p> <p>c. Inspect all hoses and belts every 500 hours of operation or</p> |                                          |

<sup>1</sup> 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.

<sup>2</sup> 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 | <p>within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary</p> <p>a. Change oil and filter every 4,320 hours of operation or within 1 year + 30 days of the previous change, whichever comes first;<sup>1</sup></p> <p>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</p> <p>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</p> |                                          |

<sup>1</sup> 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.

<sup>2</sup> 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<br>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; <sup>1</sup><br>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<br>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<br>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                                                                                                                                                                                                                                                                                                                                                                                          |                                          |

<sup>1</sup> 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.

<sup>2</sup> 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 . . . |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| <p>9. Non-emergency, non-black start 4SLB stationary RICE &gt;500 HP that are not remote stationary RICE and that operate more than 24 hours per calendar year</p> <p>10. Non-emergency, non-black start 4SRB stationary RICE ≤500 HP</p> | <p>change, whichever comes first;<sup>1</sup></p> <p>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</p> <p>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</p> <p>Install an oxidation catalyst to reduce HAP emissions from the stationary RICE</p> <p>a. Change oil and filter every 1,440 hours of operation or within 1 year + 30 days of the previous</p> |                                          |

<sup>1</sup> 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.

<sup>2</sup> 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<br>4SRB remote stationary RICE >500 HP | <p>change, whichever comes first;<sup>1</sup></p> <p>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</p> <p>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</p> <p>a. Change oil and filter every 2,160 hours of operation or within 1 year + 30 days of the previous change, whichever comes first;<sup>1</sup></p> <p>b. Inspect spark plugs every 2,160 hours of operation or</p> |                                          |

<sup>1</sup> 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.

<sup>2</sup> 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 . . . |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| <p>12. Non-emergency, non-black start 4SRB stationary RICE &gt;500 HP that are not remote stationary RICE and that operate more than 24 hours per calendar year</p> <p>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</p> | <p>within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary; and</p> <p>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</p> <p>Install NSCR to reduce HAP emissions from the stationary RICE</p> <p>a. Change oil and filter every 1,440 hours of operation or within 1 year + 30 days of the previous change, whichever comes first;<sup>1</sup></p> <p>b. Inspect spark plugs every 1,440 hours of operation or</p> |                                          |

<sup>1</sup> 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.

<sup>2</sup> 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 . . . |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
|                | <p>within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary; and</p> <p>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</p> |                                          |

<sup>1</sup> 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.

<sup>2</sup> 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. <sup>1</sup>                           |
| 2. 4SRB stationary RICE $\geq$ 5,000 HP located at major sources                                                                                                                                                                              | Reduce formaldehyde emissions                                          | Conduct subsequent performance tests semiannually. <sup>1</sup>                           |
| 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. <sup>1</sup>                           |
| 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. |

<sup>1</sup> 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                  | <p>i. Select the sampling port location and the number/ location of traverse points at the inlet and outlet of the control device; and</p> <p>ii. Measure the O<sub>2</sub> at the inlet and outlet of the control device; and</p> | <p>(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A-2, or ASTM D6522-00 (Reapproved 2005)<sup>1 3</sup> (heated probe not necessary)</p> | <p>(a) For CO, O<sub>2</sub>, and moisture measurement, ducts ≤6 inches in diameter may be sampled at a single point located at the duct centroid and ducts &gt;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 &gt;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.</p> <p>(b) Measurements to determine O<sub>2</sub> must be made at the same time as the measurements for CO concentration.</p> |

<sup>1</sup> You may also use methods 3A and 10 as options to ASTM-D6522-00 (2005).

<sup>2</sup> 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.

<sup>3</sup> Incorporated by reference, see § 63.14.

| For each .<br>..              | Complying<br>with the<br>requirement<br>to ...   | You must ...                                                                                                                                                                        | Using ...                                                                                                                                                       | According to the following<br>requirements ...                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2. 4SRB<br>stationary<br>RICE | a. Reduce<br>formaldehyde<br>or THC<br>emissions | iii. Measure<br>the CO at the<br>inlet and the<br>outlet of the<br>control device;<br>and                                                                                           | (2) ASTM<br>D6522-00<br>(Reapproved<br>2005) <sup>1 2 3</sup><br>(heated<br>probe not<br>necessary)<br>or method<br>10 of 40<br>CFR part 60,<br>appendix<br>A-4 | (c) The CO concentration must be at 15<br>percent O <sub>2</sub> , dry basis.                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                               |                                                  | iv. Measure<br>moisture<br>content at the<br>inlet and outlet<br>of the control<br>device as<br>needed to<br>determine CO<br>and O <sub>2</sub><br>concentrations<br>on a dry basis | (3) Method<br>4 of 40 CFR<br>part 60,<br>appendix<br>A-3, or<br>method 320<br>of 40 CFR<br>part 63,<br>appendix A,<br>or ASTM<br>D6348-03 <sup>1</sup><br>3     | (d) Measurements to determine<br>moisture content must be made at the<br>same time and location as the<br>measurements for CO concentration.                                                                                                                                                                                                                                                                                                                                                             |
|                               |                                                  | i. Select the<br>sampling port<br>location and<br>the number/<br>location of<br>traverse points<br>at the inlet and<br>outlet of the<br>control device;<br>and                      |                                                                                                                                                                 | (a) For formaldehyde, THC, O <sub>2</sub> , and<br>moisture measurement, ducts ≤6<br>inches in diameter may be sampled at a<br>single point located at the duct centroid<br>and ducts >6 and ≤12 inches in<br>diameter may be sampled at 3 traverse<br>points located at 16.7, 50.0, and 83.3%<br>of the measurement line ('3-point long<br>line'). If the duct is >12 inches in<br>diameter <i>and</i> the sampling port<br>location meets the two and half-<br>diameter criterion of section 11.1.1 of |

<sup>1</sup> You may also use methods 3A and 10 as options to ASTM-D6522-00 (2005).

<sup>2</sup> 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.

<sup>3</sup> Incorporated by reference, see § 63.14.

| For each .<br>.. | Complying<br>with the<br>requirement<br>to ... | You must ...                                                                                                                                                                                                                                                                                                  | Using ...                                                                                                                                                                                                                                                                                                              | According to the following<br>requirements ...                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                  |                                                | <p>ii. Measure O<sub>2</sub> at the inlet and outlet of the control device; and</p> <p>iii. Measure moisture content at the inlet and outlet of the control device as needed to determine formaldehyde or THC and O<sub>2</sub> concentrations on a dry basis; and</p> <p>iv. If demonstrating compliance</p> | <p>(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A-2, or ASTM D6522-00 (Reapproved 2005)<sup>1 3</sup> (heated probe not necessary)</p> <p>(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<sup>1 3</sup></p> <p>(3) Method 320 or 323 of 40 CFR</p> | <p>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.</p> <p>(b) Measurements to determine O<sub>2</sub> concentration must be made at the same time as the measurements for formaldehyde or THC concentration.</p> <p>(c) Measurements to determine moisture content must be made at the same time and location as the measurements for formaldehyde or THC concentration.</p> <p>(d) Formaldehyde concentration must be at 15 percent O<sub>2</sub>, dry basis. Results of this test consist of the average of the</p> |

<sup>1</sup> You may also use methods 3A and 10 as options to ASTM-D6522-00 (2005).

<sup>2</sup> 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.

<sup>3</sup> Incorporated by reference, see § 63.14.

| For each .<br>..         | Complying<br>with the<br>requirement<br>to ...                     | You must ...                                                                                                                             | Using ...                                                                                                                                                                                             | According to the following<br>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, <sup>1 3</sup> 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 <sub>2</sub> , dry basis. Results of this test consist of the average of the three 1-hour or longer runs.                                                                             |
| 3.<br>Stationary<br>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 <sub>2</sub> , 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 |

<sup>1</sup> You may also use methods 3A and 10 as options to ASTM-D6522-00 (2005).

<sup>2</sup> 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.

<sup>3</sup> 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 <sub>2</sub> 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) <sup>1 3</sup> (heated probe not necessary) | (b) Measurements to determine O <sub>2</sub> 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.                                                                                                                                                                                                                                                                                                                                                                                                                         |

<sup>1</sup> You may also use methods 3A and 10 as options to ASTM-D6522-00 (2005).

<sup>2</sup> 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.

<sup>3</sup> Incorporated by reference, see § 63.14.

| For each . . | Complying with the requirement to . . . | You must . . .                                                                                                                                                                                                                          | Using . . .                                                                                                                                                                                                                                                                                                                                                                                        | According to the following requirements . . .                                                                                                                                                                                                                                                                                     |
|--------------|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              |                                         | <p>needed to determine formaldehyde or CO and O<sub>2</sub> concentrations on a dry basis; and</p> <p>iv. Measure formaldehyde at the exhaust of the stationary RICE; or</p> <p>v. Measure CO at the exhaust of the stationary RICE</p> | <p>appendix A, or ASTM D6348-03<sup>1 3</sup></p> <p>(3) Method 320 or 323 of 40 CFR part 63, appendix A; or ASTM D6348-03,<sup>1 3</sup> 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</p> <p>(4) Method 10 of 40 CFR part 60, appendix A-4, ASTM D6522-00 (2005),<sup>1 3</sup> method 320</p> | <p>(d) Formaldehyde concentration must be at 15 percent O<sub>2</sub>, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.</p> <p>(e) CO concentration must be at 15 percent O<sub>2</sub>, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.</p> |

<sup>2</sup> 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.

<sup>3</sup> 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 <sup>1</sup> <sub>3</sub> |                                               |

<sup>1</sup> You may also use methods 3A and 10 as options to ASTM-D6522-00 (2005).

<sup>2</sup> 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.

<sup>3</sup> 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<br>ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b); and<br>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<br><br>ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b); and<br>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<br>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<br>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<br>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<br>iii. You have recorded the approved                                                                       |

| For each . . .                                                                                                                                                                                                                                                                                                                                                                           | Complying with the requirement to . . .                   | You have demonstrated initial compliance if . . .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>5. New or reconstructed non-emergency 2SLB stationary RICE &gt;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 &gt;500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE &gt;500 HP located at an area source of HAP</p> | <p>a. Reduce CO emissions, and using a CEMS</p>           | <p>operating parameters (if any) during the initial performance test.</p> <p>i. You have installed a CEMS to continuously monitor CO and either O<sub>2</sub> or CO<sub>2</sub> at both the inlet and outlet of the oxidation catalyst according to the requirements in § 63.6625(a); and</p> <p>ii. You have conducted a performance evaluation of your CEMS using PS 3 and 4A of 40 CFR part 60, appendix B; and</p> <p>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.</p> |
| <p>6. Non-emergency stationary CI RICE &gt;500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE &gt;500 HP located at an area source of HAP</p>                                                                                                                                                                                                        | <p>a. Limit the concentration of CO, and using a CEMS</p> | <p>i. You have installed a CEMS to continuously monitor CO and either O<sub>2</sub> or CO<sub>2</sub> at the outlet of the oxidation catalyst according to the requirements in § 63.6625(a); and</p> <p>ii. You have conducted a performance evaluation of your CEMS using PS 3 and 4A of 40 CFR part 60, appendix B; and</p> <p>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.</p>                                                                                       |
| <p>7. Non-emergency 4SRB stationary RICE &gt;500 HP located at a major source of HAP</p>                                                                                                                                                                                                                                                                                                 | <p>a. Reduce formaldehyde</p>                             | <p>i. The average reduction of emissions of formaldehyde</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

| 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<br>ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b); and<br>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<br>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<br>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 <sub>2</sub> , 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                                                                  | <p>ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b); and</p> <p>iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.</p>                                                                                                                                                                                                                   |
| 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 | <p>i. The average formaldehyde concentration, corrected to 15 percent O<sub>2</sub>, dry basis, from the three test runs is less than or equal to the formaldehyde emission limitation; and</p> <p>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</p> <p>iii. You have recorded the approved operating parameters (if any) during the initial performance test.</p> |
| 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 <sub>2</sub> , 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 . . .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>that are operated more than 24 hours per calendar year</p> <p>14. Existing non-emergency 4SRB stationary RICE &gt;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</p> | <p>a. Install NSCR</p>                  | <p>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<sub>2</sub>;</p> <p>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.</p> <p>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<sub>2</sub>, or the average reduction of emissions of THC is 30 percent or more;</p> <p>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.</p> |

[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 <sup>a</sup> ; and<br>ii. Collecting the catalyst inlet temperature data according to § 63.6625(b); and<br>iii. Reducing these data to 4-hour rolling averages; and<br>iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and<br>v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure |

<sup>a</sup> 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 . . .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>2. New or reconstructed non-emergency 2SLB stationary RICE &gt;500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE <math>\geq</math>250 HP located at a major source of HAP, and new or reconstructed non-emergency CI stationary RICE &gt;500 HP located at a major source of HAP</p> | <p>a. Reduce CO emissions and not using an oxidation catalyst, and using a CPMS</p> | <p>drop across the catalyst is within the operating limitation established during the performance test.</p> <p>i. Conducting semiannual performance tests for CO to demonstrate that the required CO percent reduction is achieved <sup>a</sup>; and</p> <p>ii. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and</p> <p>iii. Reducing these data to 4-hour rolling averages; and</p> <p>iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.</p> |
| <p>3. New or reconstructed non-emergency 2SLB stationary RICE &gt;500 HP located at a major source of HAP, new or</p>                                                                                                                                                                                                                  | <p>a. Reduce CO emissions or</p>                                                    | <p>i. Collecting the monitoring data</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

<sup>a</sup> 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 ≥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<br>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<br>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. |

<sup>a</sup> 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<br>ii. Reducing these data to 4-hour rolling averages; and<br>iii. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and<br>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<br>ii. Reducing these                                                                                                                                                                                                                                                                                                                                                                   |

<sup>a</sup> 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<br>iii. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.<br>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. <sup>a</sup> |
| 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                                                                                                                                                                                                                                                                                                                                                                                                            |

<sup>a</sup> 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 . . .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                           | RICE exhaust and using oxidation catalyst or NSCR | emissions remain at or below the formaldehyde concentration limit <sup>a</sup> ; and<br>ii. Collecting the catalyst inlet temperature data according to § 63.6625(b); and<br>iii. Reducing these data to 4-hour rolling averages; and<br>iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and<br>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. |
| 8. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP and new or reconstructed                                                                                                                                                                                                                                                                                                   | a. Limit the concentration                        | i. Conducting semiannual                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <sup>a</sup> 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 . . .                                                                                                                                                                                                                                                                                                                                                                                                                |
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| 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 <sup>a</sup> ; and<br>ii. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and<br>iii. Reducing these data to 4-hour rolling averages; and<br>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 $\leq 500$ 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 $\leq 300$ 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                                                                                                                                                                                                                                                                                                                                        |

<sup>a</sup> 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 . . .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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| <p>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 &gt;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 &gt;500 HP located at an area source of HAP that are remote stationary RICE</p> <p>10. Existing stationary CI RICE &gt;500 HP that are not limited use stationary RICE</p> | <p>a. Reduce CO emissions, or limit the concentration of CO in the stationary RICE exhaust, and using oxidation catalyst</p> | <p>instructions; or</p> <p>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.</p> <p>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</p> |

<sup>a</sup> 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 . . .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>11. Existing stationary CI RICE &gt;500 HP that are not limited use stationary RICE</p> | <p>a. Reduce CO emissions, or limit the concentration of CO in the stationary RICE exhaust,</p> | <p>ii. Collecting the catalyst inlet temperature data according to § 63.6625(b); and<br/> iii. Reducing these data to 4-hour rolling averages; and<br/> iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and<br/> 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.<br/> i. Conducting performance tests every 8,760 hours or 3 years, whichever comes first, for CO or formaldehyde, as</p> |

<sup>a</sup> 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<br>ii. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and<br>iii. Reducing these data to 4-hour rolling averages; and<br>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,                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

<sup>a</sup> 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 . . .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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|                | of CO in the stationary RICE exhaust, and using an oxidation catalyst | <p>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</p> <p>ii. Collecting the catalyst inlet temperature data according to § 63.6625(b); and</p> <p>iii. Reducing these data to 4-hour rolling averages; and</p> <p>iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and</p> <p>v. Measuring the pressure drop across the catalyst once per month and</p> |

<sup>a</sup> 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 | <p>demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.</p> <p>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</p> <p>ii. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and</p> <p>iii. Reducing these data to 4-hour</p> |

<sup>a</sup> 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 . . .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>14. Existing non-emergency 4SLB stationary RICE &gt;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</p> | <p>a. Install an oxidation catalyst</p> | <p>rolling averages; and</p> <p>iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.</p> <p>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 O<sub>2</sub>; and either</p> <p>ii. Collecting the catalyst inlet temperature data according to § 63.6625(b), reducing these data to 4-hour rolling averages;</p> |

<sup>a</sup> 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 . . .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>15. Existing non-emergency 4SRB stationary RICE &gt;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</p> | <p>a. Install NSCR</p>                  | <p>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</p> <p>iii. Immediately shutting down the engine if the catalyst inlet temperature exceeds 1350 °F.</p> <p>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 O<sub>2</sub>, or the average reduction of emissions of THC is 30 percent or more; and either</p> |

<sup>a</sup> 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 . . .                                                                                                                                                                                                                                                                                                                                                                    |
|----------------|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                |                                         | <p>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</p> <p>iii. Immediately shutting down the engine if the catalyst inlet temperature exceeds 1250 °F.</p> |

<sup>a</sup> 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       | <p>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</p> <p>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</p> <p>c. If you had a malfunction during the reporting period, the information in § 63.6650(c)(4)</p> | <p>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.</p> <p>i. Semiannually according to the requirements in § 63.6650(b) and (i).</p> <p>i. Semiannually according to the requirements in § 63.6650(b) and (i).</p> |

| 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                  | <p>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</p> <p>b. The operating limits provided in your federally enforceable permit, and any deviations from these limits; and</p> <p>c. Any problems or errors suspected with the meters</p> | <p>i. Annually, according to the requirements in § 63.6650.</p> <p>i. See item 2.a.i.</p> <p>i. See item 2.a.i.</p> |
| 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                | Subpart ZZZZ does not contain opacity or visible emission standards. |
| § 63.6(h)                   | Opacity and visible emission standards                                            | No                 |                                                                      |
| § 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.<br>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.<br>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<br>Notification of special compliance requirements for new sources | Yes                | specified in § 63.6645.<br>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.<br>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.<br>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 (O<sub>2</sub>) 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 (O<sub>2</sub>).

| 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 <sub>2</sub> ) | 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 O<sub>2</sub>, 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 O<sub>2</sub> 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 O<sub>2</sub> 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 O<sub>2</sub> 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 NO<sub>2</sub> 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 O<sub>2</sub> 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 O<sub>2</sub>; 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 O<sub>2</sub>. Use CO calibration gases with labeled concentration values certified by the manufacturer to be within  $\pm 5$  percent of the label value. Dry ambient air (20.9 percent O<sub>2</sub>) is acceptable for calibration of the O<sub>2</sub> cell. If needed, any lower percentage O<sub>2</sub> calibration gas must be a mixture of O<sub>2</sub> 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 O<sub>2</sub> Calibration Gas Concentration.**
- Select an O<sub>2</sub> 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 O<sub>2</sub>. When the average exhaust gas O<sub>2</sub> readings are above 6 percent, you may use dry ambient air (20.9 percent O<sub>2</sub>) for the up-scale O<sub>2</sub> 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., CO<sub>2</sub>).

## 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 O<sub>2</sub> concentrations.

- 8.3 EC Cell Rate.** Maintain the EC cell sample flow rate so that it does not vary by more than  $\pm 10$  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  $\pm 3$  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 O<sub>2</sub> 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  $\pm 3$  percent of the up-scale gas value or  $\pm 1$  ppm, whichever is less restrictive, for the CO channel and less than or equal to  $\pm 0.3$  percent O<sub>2</sub> for the O<sub>2</sub> 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  $\pm 5$  percent or  $\pm 1$  ppm for CO or  $\pm 0.5$  percent O<sub>2</sub>, 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  $\pm 2$  percent or  $\pm 1$  ppm for CO or  $\pm 0.5$  percent O<sub>2</sub>, 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 O<sub>2</sub> 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  $\pm 2$  percent, or  $\pm 1$  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  $\pm 2$  percent or  $\pm 1$  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 NO<sub>2</sub> gas standards that are generally recognized as representative of diesel-fueled engine NO and NO<sub>2</sub> 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 NO<sub>2</sub> interference response should be less than or equal to  $\pm 5$  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 <sub>2</sub> | CO | O <sub>2</sub> | CO | O <sub>2</sub> | CO | O <sub>2</sub> | CO |      |           |            |
| Sample Cond. |                |    |                |    |                |    |                |    |      |           |            |
| Phase        |                |    |                |    |                |    |                |    |      |           |            |
| "            |                |    |                |    |                |    |                |    |      |           |            |
| "            |                |    |                |    |                |    |                |    |      |           |            |
| "            |                |    |                |    |                |    |                |    |      |           |            |
| "            |                |    |                |    |                |    |                |    |      |           |            |
| Measurement  |                |    |                |    |                |    |                |    |      |           |            |
| Data Phase   |                |    |                |    |                |    |                |    |      |           |            |
| "            |                |    |                |    |                |    |                |    |      |           |            |
| "            |                |    |                |    |                |    |                |    |      |           |            |
| "            |                |    |                |    |                |    |                |    |      |           |            |
| "            |                |    |                |    |                |    |                |    |      |           |            |
| "            |                |    |                |    |                |    |                |    |      |           |            |
| "            |                |    |                |    |                |    |                |    |      |           |            |
| "            |                |    |                |    |                |    |                |    |      |           |            |
| "            |                |    |                |    |                |    |                |    |      |           |            |
| Mean         |                |    |                |    |                |    |                |    |      |           |            |
| Refresh      |                |    |                |    |                |    |                |    |      |           |            |
| Phase        |                |    |                |    |                |    |                |    |      |           |            |
| "            |                |    |                |    |                |    |                |    |      |           |            |
| "            |                |    |                |    |                |    |                |    |      |           |            |
| "            |                |    |                |    |                |    |                |    |      |           |            |
| "            |                |    |                |    |                |    |                |    |      |           |            |

[78 FR 6721, Jan. 30, 2013]

## **Appendix J**

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*





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This content is from the eCFR and is authoritative but unofficial.

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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 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 <sup>c</sup>

**Table 2 to Subpart DDDDD of Part 63**

Emission Limits for Existing Boilers and Process Heaters <sup>d</sup>

**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 <sup>a b</sup>

**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 <sup>c</sup>

**Table 15 to Subpart DDDDD of Part 63**

Alternative Emission Limits for Existing Boilers and Process  
Heaters <sup>d</sup>

**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<sub>adj</sub>, 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 (O<sub>2</sub>) (or carbon dioxide (CO<sub>2</sub>)) according to the procedures in paragraphs (a)(1) through (6) of this section.
  - (1) Install the CO CEMS including an O<sub>2</sub> (or CO<sub>2</sub>) analyzer by the compliance date specified in § 63.7495. The CO and O<sub>2</sub> (or CO<sub>2</sub>) 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 CO<sub>2</sub> analyzer as the diluent monitor. If a CO<sub>2</sub> 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 O<sub>2</sub> using the measured CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> is used to correct CO emissions and CO<sub>2</sub> 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 O<sub>2</sub> 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 O<sub>2</sub> 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 CO<sub>2</sub>) CEMS operation (sampling, analyzing, and data recording) for each successive 15-minute period. Collect CO and oxygen (or CO<sub>2</sub>) data concurrently. Collect at least four CO and oxygen (or CO<sub>2</sub>) 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 CO<sub>2</sub> 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 (SO<sub>2</sub>) 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 SO<sub>2</sub> 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 SO<sub>2</sub> CEMS must be installed by the compliance date specified in § 63.7495.
  - (2) For on-going quality assurance (QA), the SO<sub>2</sub> 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 SO<sub>2</sub> 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 SO<sub>2</sub> data, you must operate the SO<sub>2</sub> 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 SO<sub>2</sub> 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 SO<sub>2</sub> concentration values in the emissions calculations; do not apply bias adjustment factors to the part 75 SO<sub>2</sub> 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 milliamperes.
      - (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 SO<sub>2</sub> CEMS is to install and operate the SO<sub>2</sub> according to the requirements in § 63.7525(m) establish a maximum SO<sub>2</sub> emission rate equal to the highest hourly average SO<sub>2</sub> 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 SO<sub>2</sub> 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 SO<sub>2</sub> 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 SO<sub>2</sub> operating limit by collecting the maximum hourly SO<sub>2</sub> emission rate on the SO<sub>2</sub> CEMS during the paired 3-run test for HCl. The maximum SO<sub>2</sub> operating limit is equal to the highest hourly average SO<sub>2</sub> 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<sub>x</sub> 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, SO<sub>2</sub>, 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 C<sub>3</sub>H<sub>8</sub>.

**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 <sup>c</sup>

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 <sup>c</sup>**  
**[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 <sup>a</sup> lb per MMBtu of heat input                                                       | 2.9E-04 <sup>a</sup> lb per MMBtu of steam output or 2.7E-03 <sup>a</sup> 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 <sup>a</sup> lb per MMBtu                                                                     | 8.7E-07 <sup>a</sup> lb per                                                                                              | For M29, collect a                                                                              |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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.

<sup>d</sup> An owner or operator may determine compliance with the carbon monoxide emissions limit using CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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 <sup>a</sup> 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 <sup>b</sup> 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                                                                                                                                      |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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.

<sup>d</sup> An owner or operator may determine compliance with the carbon monoxide emissions limit using CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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, <sup>d</sup> 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 <sup>d</sup> , 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         |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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.

<sup>d</sup> An owner or operator may determine compliance with the carbon monoxide emissions limit using CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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, <sup>d</sup> 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, <sup>d</sup> 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.   |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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.

<sup>d</sup> An owner or operator may determine compliance with the carbon monoxide emissions limit using CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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, <sup>d</sup> 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. |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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.

<sup>d</sup> An owner or operator may determine compliance with the carbon monoxide emissions limit using CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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.          |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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.

<sup>d</sup> An owner or operator may determine compliance with the carbon monoxide emissions limit using CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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, <sup>d</sup> 30-day rolling average)<br>4.1E-03 lb per MMBtu of heat input; or (8.4E-06 <sup>a</sup> lb per MMBtu of heat input) | output or 1.5 lb per MWh; 3-run average<br>5.0E-03 lb per MMBtu of steam output or 5.8E-02 lb per MWh; or (1.1E-05 <sup>a</sup> lb per MMBtu of steam output or 1.2E-04 <sup>a</sup> 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.          |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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.

<sup>d</sup> An owner or operator may determine compliance with the carbon monoxide emissions limit using CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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, <sup>d</sup> 10-day rolling average)<br>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<br><br>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.          |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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.

<sup>d</sup> An owner or operator may determine compliance with the carbon monoxide emissions limit using CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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, <sup>d</sup> 10-day rolling average)<br>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<br>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.          |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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.

<sup>d</sup> An owner or operator may determine compliance with the carbon monoxide emissions limit using CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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<br><br>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<br><br>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.          |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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.

<sup>d</sup> An owner or operator may determine compliance with the carbon monoxide emissions limit using CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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 <sup>d</sup> , 30-day rolling average)<br>2.6E-02 lb per MMBtu of heat input; or (4.4E-04 lb per MMBtu of heat input) | average<br>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 <sup>a</sup> lb per MMBtu of heat input                                                                                                                           | 1.7E-04 <sup>a</sup> lb per MMBtu of steam output or 2.1E-03 <sup>a</sup> lb per MWh                                                   | For M26A: Collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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.

<sup>d</sup> An owner or operator may determine compliance with the carbon monoxide emissions limit using CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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 <sup>a</sup> lb per MMBtu of heat input                                                       | 5.3E-07 <sup>a</sup> lb per MMBtu of steam output or 6.7E-06 <sup>a</sup> lb per MWh                                     | per run.<br>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 <sup>b</sup> 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 <sup>a</sup>                                          | 2.1E-03 lb per MMBtu of steam                                                                                            | Collect a minimum of 3 dscm per run.                                                                                                                                                      |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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.

<sup>d</sup> An owner or operator may determine compliance with the carbon monoxide emissions limit using CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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 <sup>a</sup> lb per MMBtu of steam output or 8.5E-5 <sup>a</sup> 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 <sup>a</sup> lb per MMBtu of heat input; or (2.9E-05 lb per MMBtu of heat input)              | 1.2E-03 <sup>a</sup> lb per MMBtu of steam output or 1.6E-02 <sup>a</sup> lb per MWh; or (3.2E-05 lb per MMBtu of steam  | Collect a minimum of 3 dscm per run. |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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.

<sup>d</sup> An owner or operator may determine compliance with the carbon monoxide emissions limit using CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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)<br>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. |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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.

<sup>d</sup> An owner or operator may determine compliance with the carbon monoxide emissions limit using CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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)<br>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 |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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.

<sup>d</sup> An owner or operator may determine compliance with the carbon monoxide emissions limit using CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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 <sup>b</sup> collect a minimum of 3 dscm. Collect a minimum of 3 dscm per run. |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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.

<sup>d</sup> An owner or operator may determine compliance with the carbon monoxide emissions limit using CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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 |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> An owner or operator may determine compliance with the carbon monoxide emissions limit be determined using CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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).

<sup>d</sup> 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 <sup>b</sup> 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, <sup>c</sup> 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                                                                |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> An owner or operator may determine compliance with the carbon monoxide emissions limit be determined using CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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).

<sup>d</sup> 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, <sup>c</sup> 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, <sup>c</sup> 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.                                     |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> An owner or operator may determine compliance with the carbon monoxide emissions limit be determined using CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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).

<sup>d</sup> 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, <sup>c</sup> 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, <sup>c</sup> 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.                            |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> An owner or operator may determine compliance with the carbon monoxide emissions limit be determined using CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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).

<sup>d</sup> 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)<br>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.                                     |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> An owner or operator may determine compliance with the carbon monoxide emissions limit be determined using CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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).

<sup>d</sup> 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, <sup>c</sup> 30-day rolling average)<br>7.4E-03 lb per MMBtu of heat input; or (6.4E-05 lb per MMBtu of heat input) | per MWh; 3-run average<br><br>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.                                     |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> An owner or operator may determine compliance with the carbon monoxide emissions limit be determined using CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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).

<sup>d</sup> 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, <sup>c</sup> 10-day rolling average)<br>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, <sup>c</sup> 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                                          |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> An owner or operator may determine compliance with the carbon monoxide emissions limit be determined using CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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).

<sup>d</sup> 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.                            |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> An owner or operator may determine compliance with the carbon monoxide emissions limit be determined using CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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).

<sup>d</sup> 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, <sup>c</sup> 30-day rolling average) | output or 8.1E-02 lb per MWh)<br>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                                             |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> An owner or operator may determine compliance with the carbon monoxide emissions limit be determined using CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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).

<sup>d</sup> 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. Mercury                         | heat input<br><br>7.3E-07 lb per MMBtu of heat input                                                  | MMBtu of steam output or 1.6E-02 lb per MWh<br><br>8.8E-07 lb per MMBtu of steam output or 1.1E-05 lb per MWh         | minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.<br><br>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 <sup>b</sup> 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.                                                                                                                                                                                                                             |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> An owner or operator may determine compliance with the carbon monoxide emissions limit be determined using CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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).

<sup>d</sup> 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.<br><br>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                                                   |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> An owner or operator may determine compliance with the carbon monoxide emissions limit be determined using CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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).

<sup>d</sup> 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                                             |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> An owner or operator may determine compliance with the carbon monoxide emissions limit be determined using CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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).

<sup>d</sup> 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 . . .                                                                                                               |
|---------------------------------------------------------------|------------------------------------|-------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                               |                                    | 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.<br>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 <sup>b</sup> collect a minimum of 2 dscm. |
|                                                               | d.<br>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.                                                                                                                                          |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> An owner or operator may determine compliance with the carbon monoxide emissions limit be determined using CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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).

<sup>d</sup> 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)                                                                                                           |                                                                 |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> An owner or operator may determine compliance with the carbon monoxide emissions limit be determined using CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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).

<sup>d</sup> 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                                                                                                                                                                                                                                                                                                 |
| <sup>a</sup> 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 | <p>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:</p> <ul style="list-style-type: none"> <li>a. A visual inspection of the boiler or process heater system.</li> <li>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.</li> <li>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.</li> <li>d. A review of available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage.</li> <li>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.</li> <li>f. A list of cost-effective energy conservation measures that are within the facility's control.</li> <li>g. A list of the energy savings potential of the energy conservation measures identified.</li> <li>h. A comprehensive report detailing the ways to improve</li> </ul> |

<sup>a</sup> 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 . . .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>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</p> | <p>efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments.</p> <p>a. You must operate all CMS during startup.</p> <p>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.</p> <p>c. You have the option of complying using either of the following work practice standards.</p> <p>(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</p> <p>(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 <sup>a</sup>. 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).</p> |

<sup>a</sup> 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 . . .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>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</p> | <p>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.</p> <p>You must operate all CMS during shutdown.</p> <p>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.</p> <p>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.</p> <p>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.</p> |

<sup>a</sup> 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 <sup>a</sup> 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                                                                                                                                                        | <p>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</p> <p>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.</p> |
| 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).                                                                                      |
| <sup>a</sup> 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                                                                                                                                       | <p>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.</p> <p>Maintain the minimum sorbent or carbon injection rate as defined in § 63.7575 of this subpart.</p>         |
| 6. Any other add-on air pollution control type on a boiler or process heater not using a PM CPMS                                                                                                                                         | <p>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).</p>                                                                                                                               |
| 7. Performance testing                                                                                                                                                                                                                   | <p>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.</p>                                                                                                                                                                                                                              |
| 8. Oxygen analyzer system                                                                                                                                                                                                                | <p>For boilers and process heaters subject to a CO emission limit that demonstrate compliance with an O<sub>2</sub> 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).</p> |
| 9. SO <sub>2</sub> CEMS                                                                                                                                                                                                                  | <p>For boilers or process heaters subject to an HCl emission limit that demonstrate compliance with an SO<sub>2</sub> CEMS, maintain the 30-day rolling average SO<sub>2</sub> emission rate at or below the highest hourly average SO<sub>2</sub> concentration</p>                                                                                                                                                                                                                                                 |
| <p><sup>a</sup> 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.</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

|                                                                                                                                                                                                                                   |                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| 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.                                                                                                                                                                |                                           |
| <sup>a</sup> 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                                                | <p>a. Select sampling ports location and the number of traverse points</p> <p>b. Determine velocity and volumetric flow-rate of the stack gas</p> <p>c. Determine oxygen or carbon dioxide concentration of the stack gas</p> <p>d. Measure the moisture content of the stack gas</p> <p>e. Measure the PM emission</p> | <p>Method 1 at 40 CFR part 60, appendix A-1 of this chapter.</p> <p>Method 2, 2F, or 2G at 40 CFR part 60, appendix A-1 or A-2 to part 60 of this chapter.</p> <p>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.<sup>a</sup></p> <p>Method 4 at 40 CFR part 60, appendix A-3 of this chapter.</p> <p>Method 5 or 17 (positive pressure fabric filters must use Method 5D) at 40 CFR part 60, appendix A-3 or A-6 of</p> |

<sup>a</sup> Incorporated by reference, see § 63.14.

| To conduct a performance test for the following pollutant . . . | You must. . .                                                        | Using, as appropriate . . .                                                                                |
|-----------------------------------------------------------------|----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| 2. TSM                                                          | concentration                                                        | 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. <sup>a</sup> |
|                                                                 | d. Measure the moisture content of the stack gas                     | Method 4 at 40 CFR part 60, appendix A-3 of this chapter.                                                  |
| 3. Hydrogen chloride                                            | e. Measure the TSM emission concentration                            | Method 29 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-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-2 of this chapter, or ANSI/ASME PTC 19.10-1981. <sup>a</sup> |
|                                                                 | d. Measure the moisture content of                                   | Method 4 at 40 CFR part 60, appendix A-3 of this chapter.                                                  |

<sup>a</sup> 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. <sup>a</sup>                                                                                   |
| 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. <sup>a</sup> |
|                                                                 | 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. <sup>a</sup>                                               |

<sup>a</sup> 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. |

<sup>a</sup> 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 <sup>a</sup> , or ASTM D7430 <sup>a</sup> , or ASTM D6883 <sup>a</sup> , or ASTM D2234/D2234M <sup>a</sup> (for coal) or EPA 1631 or EPA 1631E or ASTM D6323 <sup>a</sup> (for solid), or EPA 821-R-01-013 (for liquid or solid), or ASTM D4177 <sup>a</sup> (for liquid), or ASTM D4057 <sup>a</sup> (for liquid), or equivalent. |
|                                                              | b. Composite fuel samples                  | Procedure in § 63.7521(d) or equivalent.                                                                                                                                                                                                                                                                                                                                   |
|                                                              | c. Prepare composited fuel samples         | EPA SW-846-3050B <sup>a</sup> (for solid samples), ASTM D2013/D2013M <sup>a</sup> (for coal), ASTM D5198 <sup>a</sup> (for biomass), or EPA 3050 <sup>a</sup> (for solid fuel), or EPA 821-R-01-013 <sup>a</sup> (for liquid or solid), or equivalent.                                                                                                                     |
|                                                              | d. Determine heat content of the fuel type | ASTM D5865 <sup>a</sup> (for coal) or ASTM E711 <sup>a</sup> (for biomass), or ASTM D5864 <sup>a</sup> for liquids and other solids, or ASTM D240 <sup>a</sup> or equivalent.                                                                                                                                                                                              |

<sup>a</sup> 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 <sup>a</sup> , ASTM E871 <sup>a</sup> , or ASTM D5864 <sup>a</sup> , or ASTM D240 <sup>a</sup> , or ASTM D95 <sup>a</sup> (for liquid fuels), or ASTM D4006 <sup>a</sup> (for liquid fuels), or equivalent.                                                                                                   |
|                                                              | f. Measure mercury concentration in fuel sample                                    | ASTM D6722 <sup>a</sup> (for coal), EPA SW-846-7471B <sup>a</sup> or EPA 1631 or EPA 1631E <sup>a</sup> (for solid samples), or EPA SW-846-7470A <sup>a</sup> or EPA SW-846-7471B <sup>a</sup> (for liquid samples), or EPA 821-R-01-013 <sup>a</sup> (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 <sup>a</sup> , or ASTM D7430 <sup>a</sup> , or ASTM D6883 <sup>a</sup> , or ASTM D2234/D2234M <sup>a</sup> (for coal) or ASTM D6323 <sup>a</sup> (for coal or biomass), ASTM D4177 <sup>a</sup> (for liquid fuels) or ASTM D4057 <sup>a</sup> (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 <sup>a</sup> (for solid samples), ASTM D2013/D2013M <sup>a</sup> (for coal), or ASTM D5198 <sup>a</sup> (for biomass), or EPA 3050 <sup>a</sup> or equivalent.                                                                                                                                          |
|                                                              | d. Determine heat content of the fuel type                                         | ASTM D5865 <sup>a</sup> (for coal) or ASTM E711 <sup>a</sup> (for biomass), ASTM D5864 <sup>a</sup> , ASTM D240 <sup>a</sup> or equivalent.                                                                                                                                                                              |
|                                                              | e. Determine moisture content of the fuel type                                     | ASTM D3173 <sup>a</sup> or ASTM E871 <sup>a</sup> , or D5864 <sup>a</sup> , or ASTM D240 <sup>a</sup> , or ASTM D95 <sup>a</sup> (for liquid fuels), or ASTM D4006 <sup>a</sup> (for liquid fuels), or equivalent.                                                                                                       |
|                                                              | f. Measure chlorine concentration in fuel sample                                   | EPA SW-846-9250 <sup>a</sup> , ASTM D6721 <sup>a</sup> , ASTM D4208 <sup>a</sup> (for coal), or EPA SW-846-5050 <sup>a</sup> or ASTM E776 <sup>a</sup> (for solid fuel), or EPA SW-846-9056 <sup>a</sup> or SW-846-9076 <sup>a</sup> (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 <sup>a</sup> , ASTM D6350 <sup>a</sup> , ISO 6978-1:2003(E) <sup>a</sup> , or ISO 6978-2:2003(E) <sup>a</sup> , or EPA-1631 <sup>a</sup> or                                                                                              |

<sup>a</sup> Incorporated by reference, see § 63.14.

| To conduct a fuel analysis for the following pollutant . . . | You must . . .                                                                                                                     | Using . . .                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| for other gas<br>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 <sup>a</sup> or equivalent.                                                                                                                     |
| 4. TSM                                                       | a. Collect fuel samples                                                                                                            | Procedure in § 63.7521(c) or ASTM D5192 <sup>a</sup> , or ASTM D7430 <sup>a</sup> , or ASTM D6883 <sup>a</sup> , or ASTM D2234/D2234M <sup>a</sup> (for coal) or ASTM D6323 <sup>a</sup> (for coal or biomass), or ASTM D4177 <sup>a</sup> , (for liquid fuels), or ASTM D4057 <sup>a</sup> (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 <sup>a</sup> (for solid samples), ASTM D2013/D2013M <sup>a</sup> (for coal), ASTM D5198 <sup>a</sup> or TAPPI T266 <sup>a</sup> (for biomass), or EPA 3050 <sup>a</sup> or equivalent.                                                                                                                                      |
|                                                              | d. Determine heat content of the fuel type                                                                                         | ASTM D5865 <sup>a</sup> (for coal) or ASTM E711 <sup>a</sup> (for biomass), or ASTM D5864 <sup>a</sup> for liquids and other solids, or ASTM D240 <sup>a</sup> or equivalent.                                                                                                                                                                |
|                                                              | e. Determine moisture content of the fuel type                                                                                     | ASTM D3173 <sup>a</sup> or ASTM E871 <sup>a</sup> , or D5864 <sup>a</sup> , or ASTM D240 <sup>a</sup> , or ASTM D95 <sup>a</sup> (for liquid fuels), or ASTM D4006 <sup>a</sup> (for liquid fuels), or ASTM D4177 <sup>a</sup> (for liquid fuels) or ASTM D4057 <sup>a</sup> (for liquid fuels), or equivalent.                              |
|                                                              | f. Measure TSM concentration in fuel sample                                                                                        | ASTM D3683 <sup>a</sup> , or ASTM D4606 <sup>a</sup> , or ASTM D6357 <sup>a</sup> or EPA 200.8 <sup>a</sup> or EPA SW-846-6020 <sup>a</sup> , or EPA SW-846-6020A <sup>a</sup> , or EPA SW-846-6010C <sup>a</sup> , EPA 7060 <sup>a</sup> or EPA 7060A <sup>a</sup> (for arsenic only), or EPA SW-846-7740 <sup>a</sup> (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.                                                                                                                                                                                                                                                                                               |

<sup>a</sup> Incorporated by reference, see § 63.14.

[83 FR 56725, Nov. 14, 2018]

## Table 7 to Subpart DDDDD of Part 63—Establishing Operating Limits<sup>ab</sup>

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<sup>a b</sup>**

| 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. 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                                                           | (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.<br>(a) You must collect secondary voltage and secondary amperage for each ESP cell and calculate total secondary electric power input data every 15 |

<sup>a</sup> Operating limits must be confirmed or reestablished during performance tests.

<sup>b</sup> 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 | <p>(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.</p> <p>(a) You must collect opacity readings every 15 minutes during the entire period of the performance tests.</p> <p>(b) Determine the average hourly opacity reading by computing the hourly averages using all of the 15-minute readings taken during each performance test.</p> <p>(c) Determine the highest hourly average opacity reading measured during the test run demonstrating compliance with the PM (or</p> |

<sup>a</sup> Operating limits must be confirmed or reestablished during performance tests.

<sup>b</sup> 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.<br>(a) You must collect pH and liquid flow-rate data every 15 minutes during the entire period of the performance tests.<br><br>(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.<br><br>(b) Determine the hourly average sorbent injection rate by computing the hourly averages using all of                                                                                           |

<sup>a</sup> Operating limits must be confirmed or reestablished during performance tests.

<sup>b</sup> 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.<br>(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 <sub>2</sub> emission rate | i. Establish a site-specific maximum SO <sub>2</sub> emission rate operating limit according to § 63.7530(b) | (1) Data from SO <sub>2</sub> CEMS and the HCl performance test | (a) You must collect the SO <sub>2</sub> emissions data according to § 63.7525(m) during the most recent HCl performance tests.<br><br>(b) The maximum SO <sub>2</sub> emission rate is equal to the highest hourly average SO <sub>2</sub> 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.                                                                                                                                                                                                                                               |

<sup>a</sup> Operating limits must be confirmed or reestablished during performance tests.

<sup>b</sup> 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)<br>.....                                                                            | 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.<br>(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)<br>..... | (1) Data from the oxygen analyzer system specified in § 63.7525(a)<br>..... | (a) You must collect oxygen data every 15 minutes during the entire period of the performance tests.<br><br>(b) Determine the hourly average oxygen concentration by computing the hourly                                                                                                                                                                                                                                                                            |

<sup>a</sup> Operating limits must be confirmed or reestablished during performance tests.

<sup>b</sup> 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 | <p>averages using all of the 15-minute readings taken during each performance test.</p> <p>(c) Determine the lowest hourly average established during the performance test as your minimum operating limit.</p> <p>(a) You must collect operating load or steam generation data every 15 minutes during the entire period of the performance test.</p> <p>(b) Determine the average operating load by computing the hourly averages using all of the 15-minute readings taken during each performance test.</p> <p>(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.</p> |

<sup>a</sup> Operating limits must be confirmed or reestablished during performance tests.

<sup>b</sup> 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                                                                       | <p>a. Collecting the opacity monitoring system data according to § 63.7525(c) and § 63.7535; and</p> <p>b. Reducing the opacity monitoring data to 6-minute averages; and</p> <p>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.</p> |
| 2. PM CPMS                                                                       | <p>a. Collecting the PM CPMS output data according to § 63.7525;</p> <p>b. Reducing the data to 30-day rolling averages; and</p> <p>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).</p>                                                                                                                  |
| 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                               | <p>a. Collecting the pressure drop and liquid flow rate monitoring system data according to §§ 63.7525 and 63.7535; and</p> <p>b. Reducing the data to 30-day rolling averages; and</p> <p>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).</p>                                               |
| 5. Wet Scrubber pH                                                               | <p>a. Collecting the pH monitoring system data according to §§ 63.7525 and 63.7535; and</p> <p>b. Reducing the data to 30-day rolling averages; and</p> <p>c. Maintaining the 30-day rolling average pH at or above the operating limit established during the performance test according to § 63.7530(b).</p>                                                                                                                |
| 6. Dry Scrubber Sorbent or Carbon Injection Rate                                 | <p>a. Collecting the sorbent or carbon injection rate monitoring system data for the dry scrubber according to §§ 63.7525 and 63.7535; and</p> <p>b. Reducing the data to 30-day rolling averages; and</p> <p>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.</p>                                                |

| 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             | <p>a. Collecting the total secondary electric power input monitoring system data for the electrostatic precipitator according to §§ 63.7525 and 63.7535; and</p> <p>b. Reducing the data to 30-day rolling averages; and</p> <p>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).</p>                                                                                                                |
| 8. Emission limits using fuel analysis                                         | <p>a. Conduct monthly fuel analysis for HCl or mercury or TSM according to Table 6 to this subpart; and</p> <p>b. Reduce the data to 12-month rolling averages; and</p> <p>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.</p> <p>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.</p> |
| 9. Oxygen content                                                              | <p>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).</p> <p>b. Reducing the data to 30-day rolling averages; and</p> <p>c. Maintain the 30-day rolling average oxygen content at or above the lowest hourly average oxygen level measured during the CO performance test.</p>                                   |
| 10. Boiler or process heater operating load                                    | <p>a. Collecting operating load data or steam generation data every 15 minutes.</p> <p>b. Reducing the data to 30-day rolling averages; and</p> <p>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).</p>                                                                                                                                                                 |
| 11. SO <sub>2</sub> emissions using SO <sub>2</sub> CEMS                       | <p>a. Collecting the SO<sub>2</sub> CEMS output data according to § 63.7525;</p> <p>b. Reducing the data to 30-day rolling averages; and</p> <p>c. Maintaining the 30-day rolling average SO<sub>2</sub> CEMS emission rate to a level at or below the highest hourly SO<sub>2</sub> rate measured during the HCl performance test according to § 63.7530.</p>                                                                                                                                                                        |

## 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.<br>Compliance report | <p>a. Information required in § 63.7550(c)(1) through (5); and</p> <p>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</p> <p>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</p> <p>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)</p> | 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).<br>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),<br>(b)(2), (c)(3)-(4), (d), 63.6(b)(6),<br>(c)(3), (c)(4), (d), (e)(2),<br>(e)(3)(ii), (h)(3), (h)(5)(iv),<br>63.8(a)(3), 63.9(b)(3), (h)(4),<br>63.10(c)(2)-(4), (c)(9). | Availability of<br>Information,<br>Performance Track<br>Provisions<br><br>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 |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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 <sup>a</sup> lb per MMBtu of heat input                                                                  | minimum of 120 liters per run.<br>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 <sup>b</sup> 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 <sup>b</sup> 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.                                                                                                                                                                                     |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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)<br><br>a. CO (or CEMS).      | average; or (320 ppm by volume on a dry basis corrected to 3 percent oxygen, <sup>c</sup> 30-day rolling average)<br><br>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, <sup>c</sup> 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, <sup>c</sup> 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.                                     |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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, <sup>c</sup> 30-day rolling average)<br>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, <sup>c</sup> 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.                                     |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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, <sup>c</sup> 30-day rolling average)                                                    |                                                                 |
| 12. 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 <sup>a</sup> 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 <sup>c</sup> 10-day rolling average) | 1 hr minimum sampling time.                                     |
| 13. Dutch Ovens/Pile burners designed to burn biomass/bio-based solids | 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.                            |
|                                                                        | a. CO (or CEMS)                    | 1,010 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run                                                                                                                    | 1 hr minimum sampling time.                                     |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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 <sup>c</sup> 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, <sup>c</sup> 30-day rolling average) | Collect a minimum of 3                                          |
|                                                                              | b.                                 | 2.6E-02 lb per MMBtu of                                                                                                                                                                   |                                                                 |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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)<br>a. HCl   | heat input; or (4.4E-04 lb per MMBtu of heat input)<br>4.4E-04 lb per MMBtu of heat input                        | dscm per run<br>For M26A: Collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run                                                               |
|                                                               | b. Mercury.                        | 4.8E-07 <sup>a</sup> 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 <sup>b</sup> collect a minimum of 4 dscm. |
| 17. 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                                    | 1 hr minimum sampling time.                                                                                                                                                   |
|                                                               | b. Filterable PM (or TSM)          | 1.3E-02 lb per MMBtu of heat input; or (7.5E-05 lb per MMBtu of heat input)                                      | 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                                                                                                                                                         |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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 <sup>a</sup> 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                                                                               |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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 <sup>b</sup> 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.                                                                                                                       |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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 <sup>a</sup> 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 <sup>b</sup> 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, <sup>c</sup> 30-day rolling average) | 1 hr minimum sampling time.                                                                                                                                                   |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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, <sup>c</sup> 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, <sup>c</sup> 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, <sup>c</sup> 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, <sup>c</sup> 30-day rolling average) | 1 hr minimum sampling time.                                     |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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, <sup>c</sup> 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 <sup>a</sup> 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.                                     |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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, <sup>c</sup> 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, <sup>c</sup> 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.                            |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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, <sup>c</sup> 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 <sup>a</sup> 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 <sup>b</sup> 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                                                                                                                                                   |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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 <sup>a</sup> 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                                  |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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.<br>Mercury                      | input<br><br>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 <sup>b</sup> collect a minimum of 3 dscm. |
|                                                               | d.<br>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.                                                                                                                                                                                                            |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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 <sup>a</sup> 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 <sup>b</sup> 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, <sup>c</sup> 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.                                                                                                                                          |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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, <sup>c</sup> 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, <sup>c</sup> 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, <sup>c</sup> 30-day rolling          | 1 hr minimum sampling time.                                     |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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, <sup>c</sup> 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.                            |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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, <sup>c</sup> 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 <sup>a</sup> 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, <sup>c</sup> 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.                                     |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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/<br>bio-based solids                                                            |                                    | 3 percent oxygen, <sup>c</sup> 10-day rolling average)                                                                                                                                                   |                                                                 |
|                                                                                              | b.<br>Filterable<br>PM (or<br>TSM) | 3.6E-02 lb per MMBtu of heat input;<br>or (3.9E-05 lb per MMBtu of heat<br>input)                                                                                                                        | Collect a minimum of 2 dscm<br>per run.                         |
| 11. Fuel cell<br>units designed<br>to burn<br>biomass/bio-<br>based solids                   | a. CO                              | 910 ppm by volume on a dry basis<br>corrected to 3 percent oxygen                                                                                                                                        | 1 hr minimum sampling time.                                     |
|                                                                                              | b.<br>Filterable<br>PM (or<br>TSM) | 2.0E-02 lb per MMBtu of heat input;<br>or (2.9E-05 lb per MMBtu of heat<br>input)                                                                                                                        | Collect a minimum of 2 dscm<br>per run.                         |
| 12. Hybrid<br>suspension<br>grate boiler<br>designed to<br>burn biomass/<br>bio-based solids | a. CO (or<br>CEMS)                 | 1,500 ppm by volume on a dry<br>basis corrected to 3 percent<br>oxygen, 3-run average; or (900 ppm<br>by volume on a dry basis corrected<br>to 3 percent oxygen, <sup>c</sup> 30-day rolling<br>average) | 1 hr minimum sampling time.                                     |
|                                                                                              | b.<br>Filterable<br>PM (or<br>TSM) | 2.6E-02 lb per MMBtu of heat input;<br>or (4.4E-04 lb per MMBtu of heat<br>input)                                                                                                                        | Collect a minimum of 3 dscm<br>per run.                         |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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 <sup>a</sup> 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 <sup>b</sup> 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, <sup>c</sup> 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 <sup>a</sup> 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, <sup>c</sup> 1-day block average).     | 1 hr minimum sampling time.                                                                                                                                                   |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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 <sup>a</sup> 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, <sup>c</sup> 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                |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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.<br>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 <sup>b</sup> collect a minimum of 3 dscm. Collect a minimum of 3 dscm per run. |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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 <sup>c</sup>

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 <sup>a</sup> lb per MMBtu of heat input                                                       | 8.7E-07 <sup>a</sup> lb per MMBtu of steam                                                                               | For M29, collect a minimum of 4 dscm per                                                        |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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.

<sup>d</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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 <sup>a</sup> lb per MWh<br><br>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 <sup>b</sup> 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.                                                                                                                                               |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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.

<sup>d</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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, <sup>d</sup> 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, <sup>d</sup> 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.                                     |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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.

<sup>d</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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, <sup>d</sup> 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, <sup>d</sup> 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                                           |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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.

<sup>d</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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, <sup>d</sup> 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                                           |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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.

<sup>d</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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<br><br>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<br><br>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.<br><br>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.                                     |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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.

<sup>d</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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, <sup>d</sup> 30-day rolling average)<br>9.8E-03 lb per MMBtu of heat input; or (8.3E-05 <sup>a</sup> lb per MMBtu of heat input) | per MWh; 3-run average<br><br>1.2E-02 lb per MMBtu of steam output or 0.14 lb per MWh; or (1.1E-04 <sup>a</sup> lb per MMBtu of steam output or 1.2E-03 <sup>a</sup> 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.                                     |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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.

<sup>d</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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, <sup>d</sup> 10-day rolling average)<br>3.0E-02 lb per MMBtu of heat input; or (6.5E-03 lb per MMBtu of heat input) | 3-run average<br>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.                                     |

<sup>a</sup> 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.

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<sup>c</sup> 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.

<sup>d</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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, <sup>d</sup> 10-day rolling average)<br>3.2E-03 lb per MMBtu of heat input; or (3.9E-05 lb per MMBtu of heat input) | per MWh; 3-run average<br>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.                                     |

<sup>a</sup> 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.

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<sup>c</sup> 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.

<sup>d</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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<br>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.                                     |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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.

<sup>d</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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, <sup>d</sup> 30-day rolling average)<br>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. |

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<sup>c</sup> 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.

<sup>d</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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 <sup>a</sup> lb per MMBtu of heat input                                                       | 5.3E-07 <sup>a</sup> lb per MMBtu of steam output or 6.7E-06 <sup>a</sup> 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 <sup>b</sup> 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 <sup>a</sup> 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.                                                                                                                                          |

<sup>a</sup> 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.

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| 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 <sup>a</sup> lb per MMBtu of steam output or 1.1E-03 <sup>a</sup> 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 <sup>a</sup> lb per MMBtu of heat input; or (2.9E-05 lb per MMBtu of heat input)              | 1.2E-03 <sup>a</sup> lb per MMBtu of steam output or 1.6E-02 <sup>a</sup> 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.                            |

<sup>a</sup> 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.

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| 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)<br>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.                            |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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.

<sup>d</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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 <sup>b</sup> collect a |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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.

<sup>d</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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.<br>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.<br>Collect a minimum of 3 dscm per run.      |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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.

<sup>d</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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<sup>d</sup>

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 |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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).

<sup>d</sup> 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 <sup>b</sup> 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, <sup>c</sup> 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                                                                |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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).

<sup>d</sup> 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, <sup>c</sup> 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, <sup>c</sup> 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.                                     |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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).

<sup>d</sup> 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, <sup>c</sup> 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, <sup>c</sup> 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.                            |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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).

<sup>d</sup> 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)<br>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.                                     |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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).

<sup>d</sup> 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, <sup>c</sup> 30-day rolling average)<br>1.1E-01 lb per MMBtu of heat input; or (1.2E-03 lb per MMBtu of heat input) | per MWh; 3-run average<br><br>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.                                     |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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).

<sup>d</sup> 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, <sup>c</sup> 10-day rolling average)<br>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, <sup>c</sup> 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                                          |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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).

<sup>d</sup> 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.                            |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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).

<sup>d</sup> 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, <sup>c</sup> 30-day rolling average) | output or 8.1E-02 lb per MWh)<br>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                                             |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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).

<sup>d</sup> 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<br><br>2.0E-06 lb per MMBtu of heat input                                                  | MMBtu of steam output or 1.6E-02 lb per MWh<br><br>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.<br><br>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 <sup>b</sup> 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.                                                                                                                                                                                                                             |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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).

<sup>d</sup> 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.<br><br>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                                                   |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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).

<sup>d</sup> 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                                             |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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).

<sup>d</sup> 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 <sup>b</sup> 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.                                                                                                                                      |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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).

<sup>d</sup> 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)                                                                                                           |                                                                 |

<sup>a</sup> 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.

<sup>b</sup> Incorporated by reference, see § 63.14.

<sup>c</sup> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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).

<sup>d</sup> 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.

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