

# ADEQ

ARKANSAS  
Department of Environmental Quality

**FEB 10 2016**

Kelley Crouch, Mgr. of Environmental, Energy, & Pulp Tech.  
Domtar A.W. LLC  
285 Highway 71 South  
Ashdown, AR 71822

Dear Ms. Crouch:

The enclosed Permit No. 0287-AOP-R16 is your authority to construct, operate, and maintain the equipment and/or control apparatus as set forth in your application initially received on 8/24/2015.

After considering the facts and requirements of A.C.A. §8-4-101 et seq. as referenced by §8-4-304, and implementing regulations, I have determined that Permit No. 0287-AOP-R16 for the construction and operation of equipment at Domtar A.W. LLC shall be issued and effective on the date specified in the permit, unless a Commission review has been properly requested under Arkansas Department of Pollution Control & Ecology Commission's Administrative Procedures, Regulation 8, within thirty (30) days after service of this decision.

The applicant or permittee and any other person submitting public comments on the record may request an adjudicatory hearing and Commission review of the final permitting decisions as provided under Chapter Six of Regulation No. 8, Administrative Procedures, Arkansas Pollution Control and Ecology Commission. Such a request shall be in the form and manner required by Regulation 8.603, including filing a written Request for Hearing with the APC&E Commission Secretary at 101 E. Capitol Ave., Suite 205, Little Rock, Arkansas 72201. If you have any questions about filing the request, please call the Commission at 501-682-7890.

Sincerely, ..



Stuart Spencer  
Associate Director, Office of Air Quality

Enclosure: Final Permit

## **RESPONSE TO COMMENTS**

**DOMTAR A.W. LLC  
PERMIT #0287-AOP-R16  
AFIN: 41-00002**

On November 22, 2015 and November 25, 2015, the Director of the Arkansas Department of Environmental Quality gave notice of a draft permitting decision for the above referenced facility. During the comment period, written comments on the draft permitting decision were submitted by the Department. The Department's response to these issues follows.

*Note: The following page numbers and condition numbers refer to the draft permit. These references may have changed in the final permit based on changes made during the comment period.*

### **ADEQ Comment #1**

Upon final review of the permit, Specific Condition #232 was discovered to contain an obsolete listing of a source. The draft permit was sent out inadvertently containing emission limits for Fire Pump #6 (SN-52). The purpose of the permit modification was to remove this source. Specific Condition #232 has been revised to reflect the removal of SN-52.

# ADEQ OPERATING AIR PERMIT

Pursuant to the Regulations of the Arkansas Operating Air Permit Program, Regulation 26:

Permit No. : 0287-AOP-R16

IS ISSUED TO:

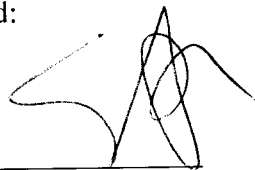
Domtar A.W. LLC  
285 Highway 71 South  
Ashdown, AR 71822  
Little River County  
AFIN: 41-00002

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:

September 6, 2011 AND September 5, 2016

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

Signed:



Stuart Spencer  
Associate Director, Office of Air Quality

**FEB 10 2016**

\_\_\_\_\_  
Date

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### List of Acronyms and Abbreviations

Ark. Code Ann.	Arkansas Code Annotated
AFIN	ADEQ Facility Identification Number
C.F.R.	Code of Federal Regulations
CO	Carbon Monoxide
HAP	Hazardous Air Pollutant
lb/hr	Pound Per Hour
MVAC	Motor Vehicle Air Conditioner
No.	Number
NO <sub>x</sub>	Nitrogen Oxide
PM	Particulate Matter
PM <sub>10</sub>	Particulate Matter Smaller Than Ten 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: Domtar A.W. LLC

AFIN: 41-00002

PERMIT NUMBER: 0287-AOP-R16

FACILITY ADDRESS: 285 Highway 71 South  
Ashdown, AR 71822

MAILING ADDRESS: 285 Highway 71 South  
Ashdown, AR 71822

COUNTY: Little River County

CONTACT NAME: Kelley Crouch

CONTACT POSITION: Mgr. of Environmental, Energy, & Pulp Tech.

TELEPHONE NUMBER: (870) 898-2711

REVIEWING ENGINEER: Charles Hurt, P.E.

UTM North South (Y): Zone 15: 3722982.16 m

UTM East West (X): Zone 15: 396805.35 m



## **SECTION II: INTRODUCTION**

### **Summary of Permit Activity**

Domtar A.W. LLC. –Ashdown Mill (AFIN: 41-00002) operates a paper mill located at 285 Highway 71 South in Ashdown, Arkansas 71822. Domtar submitted an application to permit a new fire water pump engine (SN-58) in order to replace the existing engine (SN-52). SN-47 (an existing package boiler) and SN-52 were removed. Overall, permitted emissions decreased by 9.6 tpy PM/PM<sub>10</sub>, 39.0 tpy SO<sub>2</sub>, 1.3 tpy VOC, 20.8 tpy CO, 40.3 tpy NO<sub>x</sub>, and 0.78 tpy Lead.

### **Process Description**

Wood yards No. 2 and No. 3 process wood chips daily. These chips are fed to the 1A digesters, the 1B digesters, or the Kamyr continuous digester. The 1A digesters produce unbleached hardwood and the 1B digesters produce unbleached hardwood or softwood.

The No. 2 Pulp Mill uses a continuous Kamyr digester to produce unbleached softwood pulp. Brown stock washers wash the pulp and send the pulp to the oxygen delignification system. The oxygen delignification system (O<sub>2</sub> Delig) uses elemental oxygen and oxidized white liquor to break down the lignin in the softwood pulp before the pulp gets to the bleach plant.

The 1A, 1B, and No. 2 Bleach Plants receive pulp from the 1A, 1B, and No. 2 pulp mills, respectively. The bleach plants primarily use chlorine dioxide to bleach the pulp until it is suitable for making quality paper or pulp. The 1A and 1B bleach plants processes approximately the same amounts of bleached pulp per day. The No. 2 Bleach Plant produces slightly more than 1A or 1B individually per day. The bleached pulp is sent to the pulp dryer or to one of four paper machines.

The pulp dryer produces either softwood or hardwood market pulp. This pulp is used internally to make paper grades or sold to external customers. Paper tonnage also includes fillers used to develop brightness, opaque finish, and other quality metrics in the finished product. The paper from the machines is either sold in roll form or sent to the converting operations. In converting, the paper rolls are processed into 8 x 11" sheets (or other sizes), stacked into reams, and packed into cartons for shipment to outside customers.

### **Power and Chemical Recovery**

Black liquor is a byproduct of cooking the chips in all three pulping lines. The evaporators evaporate water to concentrate the solids in the black liquor (called weak black liquor due to its relatively low dissolved solids content). The two recovery boilers burn concentrated black liquor solids.

The molten liquor from the bottom of the recovery boilers is mixed in the dissolving tank with weak wash from the recausticizing area to form green liquor. The green liquor is clarified and mixed with hot lime (CaO) from the two lime kilns in one of two slakers. The liquor and lime

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react to form calcium carbonate ( $\text{CaCO}_3$ ) and sodium hydroxide ( $\text{NaOH}$ ). The  $\text{NaOH}$  is the primary constituent of white liquor, the chemical used to cook chips in each hardwood and softwood digester. The  $\text{CaCO}_3$  is sent to the lime kilns where it is calcined, driving off the  $\text{CO}_2$  to form  $\text{CaO}$  to be used in the slaker again.

Dregs from the green liquor clarifier are washed in order to recover any remaining inorganics that can be used in the chemical recovery process. After washing, the dregs are sent to the lime waste landfill. Grits from the slaker (gravel, hard-burned lime, etc.) are disposed of in the lime waste landfill as well.

Fiber not used on the paper machines is sent to the wastewater treatment plant. This fiber is recovered in three wastewater clarifiers and is dewatered using one of three screw presses. The dried fiber (sludge or wastewater treatment plant residual) is sent to an on-site landfill for disposal.

Three power boilers are used in conjunction with the recovery boilers to produce steam used for power generation. The No. 1, 2 and 3 Power Boilers burn combinations of fuel (e.g. bark, natural gas, coal, fuel oil, etc.), to provide steam to meet mill demands.

### Wastewater Treatment System

The mill's process sewers flow to an effluent lift pit and is then pumped to a splitter box. The effluent is then sent to one of three effluent clarifiers for removal of primary sludge. The sludge slurry is sent to the screw presses and the supernatant goes back to the splitter box. The effluent goes through one of the two pre-settling ponds before it enters the first aeration pond. After extensive aeration using surface and sub-surface aerators, the effluent flows to the second aeration pond for further treatment of the effluent. After the aeration zones, a quiescent stabilization pond retains the effluent for about three weeks before it is discharged to the Red River. Approximately 55 million gallons of process effluent are discharged each day.

### Auxiliary Processes Description

Several auxiliary operations are necessary to maintain the facility. These include steam production for power generation, water, electricity, compressed air, precipitated calcium carbonate for the paper machines, treatment of wastewater, sludge handling, solid and hazardous waste disposal, routine maintenance, painting, road repair, fuel storage, and other chemicals and byproduct loading or unloading activities.

### Steam Generation with Power Boilers

The power process consists of generating the steam, electricity, and compressed air for the other processes within the facility. The mill's steam and electricity requirements for the facility are partially met by the steam and power generated in the recovery process. Three (3) power boilers generate additional steam and electricity. The No. 1 and 3 Power Boilers burn natural gas, bark, wood waste, pelletized paper fuel, and tire-derived fuel for steam generation. The No. 1 Power

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Boiler can also burn fuel oil and specification grade used oil. The No. 2 Power Boiler (Coal Boiler) burns coal, bark, wood waste, fuel oil, specification grade used oil, natural gas, pelletized paper fuel, tire-derived fuel, and non-condensable gases.

Fuel storage for the power area consists of two (2) fuel oil storage tanks and a smaller day tank. Oil is delivered by tank trucks or tank cars and pumped to either of the storage tanks. The mill adds used oil from the mill's lubricating systems and vehicles to the fuel oil storage tanks. The oil is heated in the tanks and circulated to allow for pumping to the various combustion sources when needed. The oil is then pumped to the day tank before being distributed to the various sources.

### Power Generation Emission Points

Each of the boilers emits NO<sub>x</sub>, VOC, CO, and PM. The No. 2 Power Boiler also emits SO<sub>2</sub>, HCl, and lead due to burning coal. Previous permitting actions established limits for all of these pollutants and testing has been done to demonstrate compliance. The specific results for each unit are discussed in the regulatory applicability sections. The power generation area also has fugitive emissions from storage of boiler water chemicals and steam vents, both of which are insignificant activities. Other trace organics are emitted from the power boilers due to burning bark and coal. These emissions are quantified based on boiler throughput and NCASI emission factors in separate sections of the application. Emissions from the fuel oil storage tanks have been estimated using AP-42 factors, and are insignificant activities.

### Coal Handling System

The primary fuel in the No. 2 Power Boiler (SN-05) is coal. The coal is normally processed directly from rail cars by shaking the cars to unload the coal into a conveyor system that carries the coal into one of three (3) storage silos operated in parallel. The silos feed coal pulverizers that reduce the large pieces of coal to fine particles suitable for quick combustion in the boiler. The pulverized coal is pneumatically conveyed to the boiler by compressed air. Particulate matter from the coal combustion process is removed by scrubbers and transported to a fly-ash pond by a wet slurry pipeline.

Coal is also stockpiled onsite in two open piles. The coal is transferred from the piles to trucks or railcar with a front end loader or other mobile equipment. The railcars of coal are then sent to the shaker.

### Coal Handling Emissions

Emissions from the coal handling system are fugitive dust from the handling, storage, transportation, and pulverizing of the coal, as well as possible fugitive dust from the ash handling system.

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### Non-Condensable Gas System Process Description

Non-condensable gases (NCG) consist of nitrogen, total reduced sulfur (TRS) compounds, methanol, acetone, sulfur dioxide (SO<sub>2</sub>), and minor quantities of other compounds such as methyl ethyl ketone. The gases are produced during the cooking of the chips in the pulp area, as well as in the evaporator area where weak black liquor is concentrated. The gases from the batch digesters (1A and 1B pulp mills), continuous digester (No. 2 Pulp Mill), turpentine system, and evaporator areas are collected and incinerated in either the No. 2 Power Boiler (SN-05, coal boiler) or the No. 2 Lime Kiln (SN-09). The gases may be routed to either source to allow for system repairs or outages on either destruction source. The No. 2 Power Boiler is equipped with an SO<sub>2</sub> monitor and two venturi scrubbers to help monitor and control TRS destruction. In accordance with NSPS, Subpart BB, the No. 2 Power Boiler also has a continuous flame pyrometer to measure the temperature at the point of NCG injection. The temperature at the injection point must remain at 1200 °F at all times that NCG are being sent to the boiler. The No. 2 Lime Kiln has a TRS monitor to measure any unburned NCG that might make it through the kiln. No temperature monitoring is required under Subpart BB due to the extreme temperatures present in the kiln.

### NCG Emissions

The emissions from the NCG system are controlled by incineration. The collection and incineration of the gases result in formation of SO<sub>2</sub>. Both the No. 2 Lime Kiln and the No. 2 Power Boiler have wet scrubbers that control these emissions (SO<sub>2</sub> is water-soluble). The No. 2 Power Boiler also monitors SO<sub>2</sub> directly and maintains compliance with its lb/MMBtu and lb/hr limits by the addition of sodium hydroxide and/or bleach plant caustic extract.

Occasionally, one or both of the incineration devices are down, or the system that generates the NCG from the various process areas experiences an upset condition. These failures result in the release of NCG to the atmosphere. When incineration devices vent, the vents from the incineration devices flow through a small pipe attached to the No. 2 Power Boiler stack, and release at the same height as the top of the stack. All NCG vents are reported as required by ADEQ, as well as by 40 C.F.R. § 63, Subpart S (Pulp and Paper MACT I).

### Chemical Unloading and Loading Process Description

The various chemicals used throughout the facility are received by tank or hopper trucks, rail cars, barrels, tote bins, or other containers. Several unloading areas are located throughout the facility to accommodate the various materials. Bulk chemicals are transported to the appropriate storage vessel by truck or internal switch engine. Unloading the chemicals into vessels consists of direct pumping from the tank car or tank truck to the storage tank, while tote bins and barrels are unloaded with fork trucks. Turpentine, soap, and black liquor are chemical by-products that are stored on-site and shipped from the facility on a regular basis.

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### Chemical Unloading and Loading Emission Points

Emissions have been quantified for the various tanks and the unloading processes associated with them by using NCASI or other established factors. Emissions from the tote bins, barrels, black liquor, and soap handling are insignificant. Turpentine emissions from the storage tank and decanter were quantified using AP-42 or NCASI factors.

### Raw Water Treatment Process Description

Water from Millwood Lake is delivered to the Ashdown Mill through an open canal. The water is clarified with alum and caustic in one of three clarifiers. Process water is then filtered and sent to one of two clear wells that are covered with plastic floating tops. Chlorine dioxide is added inline to the water for disinfection. This addition does not cause any substantial emissions because it takes place within the piping after clarification. Other specialty chemicals are added for the portion of the raw water that is used as boiler feed water. The water treatment plant also houses the high-pressure water pumps used for firefighting. The pumps can run on diesel fuel as a backup during electrical failures, and the diesel fuel is stored in four tanks throughout the area.

### Raw Water Treatment Emission Points

The primary emissions from the raw water treatment facility are fugitives from chemical and diesel storage tanks. All emissions from the raw water treatment area are considered insignificant.

### Wastewater Treatment Process Description

Wastewater from all of the manufacturing areas of the mill are collected and routed to a pumping station (lift pit) and then to a splitter box where the flow is directed to one of three (3) clarifiers operating in parallel for primary clarification. An emergency generator is used to power the pumps only during electrical outages. The bleach plant acid and caustic sewers, as well as foul condensate sewers, are not routed to the clarifiers. The bleach plant sewers bypass the clarifiers and enter the wastewater treatment system downstream from the clarifier discharge, and the foul condensate sewers are hard-piped and sent directly into the first aeration pond of the wastewater treatment system.

Sludge removed in the primary clarifiers is pumped to one of three (3) screw presses where it is thickened to approximately 50% solids. The presses are housed inside a building and are considered insignificant sources. The de-watered sludge is hauled to an on-site, permitted landfill for disposal.

After leaving the clarifiers, wastewater flows to either the north or south pre-settling pond (approximately 15 acres each). These ponds serve to remove solids not removed by the clarifiers, and to prevent settling in the aeration ponds. Under normal circumstances, only one settling pond is in service at a time, but occasionally both ponds will be in service, or the wastewater will bypass the ponds altogether and go directly to the first aeration pond.

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Wastewater flows from the settling ponds to the first aeration basin which is approximately 125 acres in total surface area. Mechanical aerators are installed in this basin for aerobic treatment of the wastewater. The water flows from the first aeration basin to the second aeration basin which is approximately the same size. Further aeration takes place in this basin, though less aerators are used, and there is a quiescent zone where no aeration takes place. From the second basin, wastewater flows into the final stabilization pond. The final pond is approximately 500 acres in surface area and has no mechanical aeration. After approximately 30 days in the wastewater treatment system, the water is discharged to the Red River through a partially concreted canal.

### Wood Waste Reclamation

A wood waste reclamation system reclaims oversized (reject) wood from the wood yards and processes the wood for use as fuel in any of the three power boilers. The wood is ground with a tub grinder and hauled to the bark piles for conveying into the boilers. Emissions from the wood waste reclamation system are fugitive dusting and combustion byproducts from the tub grinder's engine.

### Precipitated Calcium Carbonate System

Lime is brought in by rail or truck and stored in silos. The precipitated calcium carbonate (PCC) plant scrubs carbon dioxide from either the No. 2 or No. 3 Lime Kiln flue gas to manufacture PCC. The process involves scrubbing the flue gases to remove particulate, cooling the gases to maintain product quality, and reacting the gas with slaked lime to produce PCC. The PCC is then stored in tanks in the paper machine area so that it can be pumped to the paper machines as needed.

### PCC Emissions

The PCC plant is not a combustion source and testing has shown that NO<sub>x</sub> and VOC emissions are actually decreased as they are processed through the calcium carbonate production process. Testing for TRS and SO<sub>2</sub> on similar plants has shown reductions as high as 80%. Particulate emissions from each lime kiln are also reduced in the primary scrubbers and the subsequent scrubbing in the PCC process. The only emissions that can actually be created in the PCC area are particulates. Due to the large reduction in particulate from the primary scrubbers, the net effect on particulate emissions is a large reduction.

### Maintenance Processes

Maintenance activities are an essential part of efficient operation of the equipment in the mill. These activities are ongoing throughout all areas of the facility and range from minor repairs by one mechanic to extended shutdowns requiring several days and extensive manpower. Maintenance also assumes responsibility for upkeep of the yards, roads, and parking lots located on the mill site.

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Painting is done by an outside contractor who maintains a shop area on the facility's property. The painting operation generates hazardous waste that is stored onsite in accordance with the mill's hazardous waste procedures. The mill is a small quantity generator of hazardous waste.

Maintenance Emissions

Emissions generated in the maintenance process consist mainly of fugitive VOC from lubricants, degreasers, solvents, surfactants, and adhesives. Welding, sandblasting, and demolition activities also emit some fugitive emissions. Repairs to pipes, valves, and tanks may result in the release of small amounts of chemicals. Hazardous waste storage is limited to containers of 55 gallons or less and any emissions from the area are fugitives generated in the transfer process.

Mill Trash and Sludge Landfill Emissions

Emissions from the mill trash and sludge landfills consist entirely of fugitive dust and some organics from the sludge. The dust is generated from vehicle traffic over a dirt road approximately 0.45 miles long. A round trip consists of 0.9 miles and an estimated 37 trips per day are made on the road. The organic emissions are from the trace quantities of methanol and other organics remaining in the sludge after dewatering. Because the bleach plant sewers enter the wastewater treatment system after sludge is removed, no organics from those sources are present in the sludge.

**Regulations**

The following table contains the regulations applicable to this permit.

Regulations
Arkansas Air Pollution Control Code, Regulation 18, effective June 18, 2010
Regulations of the Arkansas Plan of Implementation for Air Pollution Control, Regulation 19, effective September 13, 2014
Regulations of the Arkansas Operating Air Permit Program, Regulation 26, effective November 18, 2012
40 C.F.R. §52.21 – <i>Prevention of Significant Deterioration*</i>
40 C.F.R. 60, Subpart Db – <i>Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units (SN-01)</i>
40 C.F.R. 60, Subpart BB – <i>Standards of Performance for Kraft Pulp Mills (SN-02, SN-05, SN-06, SN-08, SN-09, SN-14 and SN-15)</i>
40 C.F.R. 63 Subpart S (MACT I) – <i>National Emission Standards for Hazardous Air Pollutants from the Pulp and Paper Industry (SN-16, SN-17, SN-18 and SN-46)</i>
40 C.F.R. 63, Subpart MM – <i>National Emission Standard for Hazardous Air Pollutants for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite, and Stand-Alone Semichemical Pulp Mills (SN-02, SN-06, SN-08, SN-09, SN-14 and SN-15)</i>
40 C.F.R. § 60, Subpart D – <i>Standards of Performance for Fossil-Fuel-Fired Steam Generators for Which Construction is Commenced After August 17, 1971</i>

Regulations
40 C.F.R. § 60, Subpart Kb – <i>Standards of Performance for Volatile Organic Liquid Storage Vessels for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984</i>
40 C.F.R. 60, Subpart IIII – <i>Standards of Performance for Stationary Compression Ignition Internal Combustion Engines</i>
40 C.F.R. § 63, Subpart ZZZZ – <i>National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines</i>
40 C.F.R. § 64 - <i>Compliance Assurance Monitoring</i>
40 C.F.R. § 68 - <i>Chemical Accident Prevention Plan</i>

### Emission Summary

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

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
Total Allowable Emissions		PM	603.0	2,603.5
		PM <sub>10</sub>	473.5	2,036.2
		SO <sub>2</sub>	3,092.1	8,101.8
		VOC	1,457.8	5,853.4
		CO	2,991.3	12,767.2
		NO <sub>x</sub>	1,910.3	7,858.2
		Lead	0.17	0.74
HAPs		Acetaldehyde	12.58	54.97
		Acrolein	0.53	2.26
		Antimony	6.08E-02	0.16
		Arsenic	3.00E-02	0.12
		Benzene	9.51	40.82
		Beryllium	5.56E-03	2.44E-02
		Cadmium	7.74E-02	0.36
		Chlorine	6.30	27.60
		Chloroform	17.08	74.80
		Chromium	0.05	0.24
		Chromium VI	1.17E-02	4.61E-02
		Cobalt	7.14E-02	0.19
		Dichloromethane	1.45	0.53
		Ethylene Dibromide	2.43E-04	9.47E-05
		Formaldehyde	7.12	30.86
		HCl	168.04	735.97
	Hexane	5.33	20.57	
	Manganese	4.91	21.53	



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EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
		Mercury	8.88E-03	3.00E-02
		Methanol	445.29	1,776.97
		Nickel	0.60	2.66
		PAH	3.06E-03	3.62E-03
		Selenium	6.46E-02	0.25
		HAP	N/A	2,2827.39
	Air Contaminants **	Acetone	N/A	73.84
		Ammonia	128.18	561.41
		Chlorine Dioxide	N/A	30.66
		Sulfuric Acid	7.23	31.65
		TRS	49.80	216.51
01	No. 3 Power Boiler (790 MMBtu/hr) ESP	PM	19.8	86.5
		PM <sub>10</sub>	19.8	86.5
		SO <sub>2</sub>	62.0	271.6
		VOC	21.3	93.3
		CO	276.5	1,211.1
		NO <sub>x</sub>	237.0	1,038.1
		Lead	3.98E-03	1.74E-02
		Acetaldehyde	0.21	0.92
		Acrolein	0.07	0.32
		Antimony	3.98E-04	1.74E-03
		Arsenic	3.79E-04	1.66E-03
		Benzene	3.13	13.70
		Beryllium	3.79E-04	1.66E-03
		Cadmium	1.02E-03	4.48E-03
		Chromium	1.30E-03	5.70E-03
		Chromium VI	4.65E-04	2.04E-03
		Cobalt	1.80E-04	7.89E-04
		HCl	0.64	2.78
		Hexane	1.67	7.33
		Manganese	0.05	0.24
		Mercury	1.92E-03	8.41E-03
		Naphthalene	0.50	2.19
		Nickel	3.32E-03	0.01
Selenium	3.13E-03	0.01		
HAP	N/A	33.11		
02	No. 3 Lime Kiln (153 MMBtu/hr) ESP	PM	8.6	37.7
		PM <sub>10</sub>	8.6	37.7
		SO <sub>2</sub>	13.3	58.3
		VOC	14.6	63.9
		CO	55.0	240.9
		NO <sub>x</sub>	66.5	291.3
		Lead	4.62E-04	2.02E-03
		Acetaldehyde	0.11	0.49
		Antimony	5.72E-05	2.51E-04

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Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
		Arsenic	1.19E-05	5.20E-05
		Benzene	0.24	1.05
		Beryllium	7.26E-05	3.18E-04
		Cadmium	2.86E-04	1.25E-03
		Chromium	8.80E-04	3.85E-03
		Cobalt	2.42E-04	1.06E-03
		Formaldehyde	0.19	0.82
		Manganese	9.68E-04	4.24E-03
		Mercury	7.92E-05	3.47E-04
		Methanol	1.31	5.74
		Nickel	1.83E-03	8.00E-03
		Selenium	3.96E-05	1.73E-04
		HAP	N/A	8.92
		TRS	1.34	5.87
		03	No. 1 Power Boiler (580 MMBtu/hr) Wet ESP	PM
PM <sub>10</sub>	40.6			177.8
SO <sub>2</sub>	1,285.0			214.0
VOC	43.0			188.4
CO	164.0			718.3
NO <sub>x</sub>	247.5			1,084.1
Lead	5.90E-02			0.26
Acetaldehyde	0.77			3.37
Acrolein	0.05			0.24
Antimony	0.03			8.51E-03
Arsenic	9.28E-03			0.04
Benzene	2.30			10.06
Beryllium	2.02E-03			8.85E-03
Cadmium	0.07			0.33
Chromium	0.02			0.11
Chromium VI	1.23E-03			4.02E-04
Cobalt	0.03			9.75E-03
Formaldehyde	0.90			3.96
HCl	52.2			228.6
Hexane	1.23			5.38
Manganese	4.76			20.85
Mercury	2.09E-03			6.80E-04
Naphthalene	0.00562			0.00183
Nickel	0.02	0.09		
Selenium	0.01	3.40E-03		
HAP	N/A	273.11		
05	No. 2 Power Boiler (820 MMBtu/hr) Multiclone and Venturi Scrubber	PM	82.0	359.2
		PM <sub>10</sub>	82.0	359.2
		SO <sub>2</sub>	984.0	4,309.9
		VOC	92.0	403.0
		CO	266.0	1,165.0
		NO <sub>x</sub>	574.0	2,514.1
		Lead	0.03	0.13

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EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
		Acetaldehyde	0.21	0.92
		Acrolein	0.08	0.34
		Antimony	0.03	0.15
		Arsenic	0.02	7.18E-02
		Benzene	3.25	14.22
		Beryllium	2.76E-03	1.21E-02
		Cadmium	2.76E-03	1.21E-02
		Chromium	0.01	4.56E-02
		Chromium VI	6.00E-03	2.63E-02
		Cobalt	0.04	0.17
		Formaldehyde	1.28	5.60
		HCl	5.75	25.18
		Hexane	1.74	7.61
		Manganese	0.04	0.17
		Mercury	3.32E-03	1.45E-02
		Naphthalene	0.50	2.19
		Nickel	0.55	2.43
		Selenium	0.05	0.23
		HAP	N/A	43.93
		PM	84.4	369.7
		PM <sub>10</sub>	84.4	369.7
		SO <sub>2</sub>	286	1,252.70
		VOC	46.7	204.5
		CO	980	4,292.40
		NO <sub>x</sub>	309.2	1,354.30
		Lead	2.48E-03	0.01
		Acetaldehyde	0.05	0.20
		Antimony	1.08E-04	4.73E-04
		Arsenic	1.59E-04	6.95E-04
		Benzene	0.07	0.30
		Beryllium	1.05E-04	4.58E-04
		Cadmium	1.30E-03	5.68E-03
		Chromium	4.85E-03	0.02
		Chromium VI	1.73E-03	7.57E-03
		Cobalt	3.46E-04	1.51E-03
		Formaldehyde	0.72	3.15
		HCl	51.20	224.3
		Manganese	0.01	0.05
		Mercury	5.90E-04	2.58E-03
		Methanol	4.86	21.29
		Nickel	8.55E-03	0.04
		Selenium	5.78E-04	2.53E-03
		HAP	N/A	249.59
		TRS	7.40	32.41
		Sulfuric Acid	3.03	13.25
06	No. 2 Recovery Boiler (1,160 MMBtu/hr) ESP	PM	84.4	369.7
		PM <sub>10</sub>	84.4	369.7
		SO <sub>2</sub>	286	1,252.70
		VOC	46.7	204.5
		CO	980	4,292.40
		NO <sub>x</sub>	309.2	1,354.30
		Lead	2.48E-03	0.01
		Acetaldehyde	0.05	0.20
		Antimony	1.08E-04	4.73E-04
		Arsenic	1.59E-04	6.95E-04
		Benzene	0.07	0.30
		Beryllium	1.05E-04	4.58E-04
		Cadmium	1.30E-03	5.68E-03
		Chromium	4.85E-03	0.02
		Chromium VI	1.73E-03	7.57E-03
		Cobalt	3.46E-04	1.51E-03
		Formaldehyde	0.72	3.15
		HCl	51.20	224.3
		Manganese	0.01	0.05
		Mercury	5.90E-04	2.58E-03
		Methanol	4.86	21.29
		Nickel	8.55E-03	0.04
		Selenium	5.78E-04	2.53E-03
		HAP	N/A	249.59
		TRS	7.40	32.41
		Sulfuric Acid	3.03	13.25
08	No. 2 Smelt Dissolving Tank Scrubber	PM	18.0	78.8
		PM <sub>10</sub>	18.0	78.8
		SO <sub>2</sub>	10.6	46.4

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
		VOC	7.1	31.3
		Acetaldehyde	0.17	0.76
		Ammonia	44.28	193.9
		Beryllium	2.70E-05	1.18E-04
		Formaldehyde	0.38	1.66
		Methanol	2.48	10.88
		HAP	N/A	13.30
		TRS	2.10	9.20
09	No. 2 Lime Kiln (790 MMBtu/hr) Venturi Scrubber	PM	51.0	223.4
		PM <sub>10</sub>	51.0	223.4
		SO <sub>2</sub>	13.4	58.4
		VOC	17.2	75.1
		CO	55.0	240.9
		NO <sub>x</sub>	68.6	300.4
		Lead	7.04E-02	0.31
		Acetaldehyde	0.11	0.49
		Antimony	8.14E-05	3.57E-04
		Arsenic	1.34E-05	5.88E-05
		Benzene	0.23	1.01
		Beryllium	2.62E-05	1.15E-04
		Cadmium	3.08E-04	1.35E-03
		Chromium	5.94E-03	2.60E-02
		Cobalt	2.20E-04	9.63E-04
		Formaldehyde	0.19	0.82
		Manganese	3.74E-02	0.16
		Mercury	1.36E-05	5.97E-05
		Methanol	0.68	2.99
		Nickel	6.82E-03	2.99E-02
		Selenium	5.72E-05	2.51E-04
HAP	N/A	6.33		
14	No. 3 Recovery Boiler (1,088 MMBtu/hr)	PM	93.5	409.5
		PM <sub>10</sub>	93.5	409.5
		SO <sub>2</sub>	425.0	1,861.5
		VOC	136.0	595.7
		CO	856.0	3,749.3
		NO <sub>x</sub>	270.0	1,182.6
		Lead	3.22E-03	0.01
		Acetaldehyde	0.06	0.26
		Antimony	1.40E-04	6.13E-04
		Arsenic	2.06E-04	9.01E-04
		Benzene	0.09	0.39
		Beryllium	1.36E-04	5.94E-04
		Cadmium	1.68E-03	7.36E-03
		Chromium	6.29E-03	0.03
		Chromium VI	2.24E-03	9.81E-03
		Cobalt	4.48E-04	1.96E-03
		Formaldehyde	0.92	4.05

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Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
		HCl	54.50	238.7
		Manganese	0.01	0.06
		Mercury	7.64E-04	3.35E-03
		Methanol	6.30	27.59
		Nickel	0.01	0.05
		Selenium	7.49E-04	3.28E-03
		HAP	N/A	300.6
		TRS	6.60	28.90
		Sulfuric Acid	4.20	18.40
15	No. 3 Smelt Dissolving Tank	PM	18.7	81.9
		PM <sub>10</sub>	18.7	81.9
		SO <sub>2</sub>	5.1	22.3
		VOC	9.3	40.5
		Acetaldehyde	0.22	0.98
		Ammonia	57.40	251.41
		Beryllium	3.50E-05	1.53E-04
		Formaldehyde	0.58	2.54
		Methanol	3.22	14.1
		HAP	N/A	24.62
		TRS	1.60	7.00
16, 17, 18	No. 1A, 1B and 2 Bleachplant Vents	VOC	32.0	140.2
		CO	240.4	1,053.0
		Acetaldehyde	0.39	1.72
		Chlorine	6.00	26.28
		Chlorine Dioxide	N/A	17.52
		Chloroform	16.5	72.27
		Formaldehyde	0.07	0.31
		HCl	3.75	16.41
		Methanol	25.55	111.90
		HAP	N/A	228.89
		TRS	0.48	2.09
20	ERCO ClO <sub>2</sub> Generator	Chlorine	0.3	1.32
		Chlorine Dioxide	N/A	13.14
		HAP	N/A	1.32
21	Effluent Treatment Lagoons	VOC	248.9	1,090.20
		Chloroform	0.43	1.86
		Formaldehyde	0.08	0.32
		Methanol	248.4	1,088.00
		HAP	N/A	1,090.18
22	No. 1A and 1B Brownstock Washers Vents	VOC	59.2	259.3
		Acetone	N/A	38.54
		Formaldehyde	0.20	0.88
		Methanol	59.00	258.40
		HAP	N/A	259.28
TRS	18.55	81.24		
23	Methanol Storage Tank	VOC	39.81	1.06

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EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
	(29,000 gallon)	Methanol	39.81	1.06
		HAP	N/A	1.06
28	Formic Acid Storage Tank (9,500 gallon)	VOC	6.62	0.15
29	Recausticizer Vents	PM	1.8	7.9
		PM <sub>10</sub>	1.8	7.9
		VOC	3.7	15.9
		Acetaldehyde	0.51	2.23
		Ammonia	26.5	116.1
		Methanol	3.11	13.62
		HAP	N/A	15.85
30 A through F	PCC Carbonators	PM	4.8	N/A
		PM <sub>10</sub>	4.8	
		SO <sub>2</sub>	2.4	
		VOC	12.6	
		CO	54.6	
		NO <sub>x</sub>	65.4	
		TRS	0.36	
36	Weak Black Liquor Tanks	VOC	8.6	37.5
		Acetaldehyde	0.04	0.17
		Acetone	N/A	0.84
		Methanol	8.52	37.32
		HAP	N/A	37.49
		TRS	0.16	0.78
37	Pulp Dryer	VOC	4.7	20.5
		Acetaldehyde	1.49	6.51
		Methanol	3.20	13.99
		HAP	N/A	20.5
38	No. 2 and No. 3 Wood Yards	PM	4.9	21.3
		PM <sub>10</sub>	3.3	14.4
		VOC	532.6	2,332.80
39	High Density Storage Tanks	VOC	2.0	8.8
		Acetaldehyde	0.27	1.16
		Acetone	N/A	1.56
		Chloroform	0.15	0.67
		Methanol	1.59	6.94
		HAP	N/A	8.77
		TRS	4.61	20.18
40	No. 1A and 1B Digester Chip Fill Exhaust	VOC	10.0	44.0
		Methanol	5.75	25.10
		HAP	N/A	25.10
		TRS	2.02	8.80
41	Sludge Landfill	PM	0.1	0.1
		PM <sub>10</sub>	0.1	0.1
		VOC	63.2	23.05

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EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
		CO	4.8	1.8
		Benzene	0.18	0.07
		Chloroform	4.00E-03	1.60E-03
		Dichloromethane	1.45	0.53
		Ethylene Dibromide	2.00E-04	8.40E-05
		Hexane	0.69	0.25
		Mercury	1.00E-04	2.60E-05
		HAP	N/A	4.45
42	No. 2 Decker	VOC	5.6	24.5
		Acetaldehyde	0.35	1.52
		Acetone	N/A	32.90
		Formaldehyde	0.20	0.85
		Methanol	3.30	14.42
		HAP	N/A	16.79
		TRS	2.58	11.28
43	Tub Grinder (4 MMBtu/hr)	PM	1.3	5.6
		PM <sub>10</sub>	1.3	5.6
		SO <sub>2</sub>	1.2	5.3
		VOC	1.5	6.5
		CO	3.9	17.2
		NO <sub>x</sub>	18.2	79.6
		Acetaldehyde	3.16E-03	1.39E-02
		Acrolein	3.81E-04	1.67E-03
		Benzene	3.85E-03	1.69E-02
		Formaldehyde	4.87E-03	2.13E-02
		PAH	6.93E-04	3.03E-03
		HAP	N/A	0.07
44A	61 Paper Machine	VOC	2.0	8.8
		Acetaldehyde	0.76	3.32
		Acrolein	0.04	0.16
		Formaldehyde	0.15	0.65
		Methanol	2.00	8.76
		HAP	N/A	12.89
44B	62 Paper Machine	VOC	4.7	20.6
		Acetaldehyde	1.22	5.34
		Acrolein	0.06	0.26
		Formaldehyde	0.24	1.04
		Methanol	4.70	20.59
		HAP	N/A	27.23
44C	63 Paper Machine	VOC	5.6	24.6
		Acetaldehyde	1.22	5.34
		Acrolein	0.06	0.26
		Formaldehyde	0.24	1.04
		Methanol	5.6	24.6
		HAP	N/A	31.24
44D	64 Paper Machine	VOC	10.3	44.9
		Acetaldehyde	3.17	13.86
		Acrolein	0.16	0.68

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			lb/hr	tpy
		Formaldehyde	0.62	2.69
		Methanol	6.80	29.78
		HAP	N/A	47.01
45	Oxygen Delignification System	VOC	9.1	39.9
		CO	16.5	72.27
		Acetaldehyde	1.23	5.39
		Formaldehyde	0.10	0.44
		Methanol	9.10	39.9
		HAP	N/A	45.73
		TRS	2.00	8.76
46	Haul Roads	PM	167.0	731.4
		PM <sub>10</sub>	39.1	171.0
50	Emergency Generator	PM	1.7	0.5
		PM <sub>10</sub>	1.7	0.5
		SO <sub>2</sub>	1.6	0.4
		VOC	1.9	0.5
		CO	5.0	1.3
		NO <sub>x</sub>	23.2	5.8
		Acetaldehyde	4.03E-03	1.01E-03
		Acrolein	4.86E-04	1.21E-04
		Benzene	4.90E-03	1.22E-03
		Formaldehyde	6.20E-03	1.55E-03
		PAH	8.82E-04	2.21E-04
		HAP	N/A	5.20E-03
51	Fire Pump #2	PM	0.5	0.2
		PM <sub>10</sub>	0.5	0.2
		SO <sub>2</sub>	0.5	0.2
		VOC	0.6	0.2
		CO	1.4	0.4
		NO <sub>x</sub>	6.2	1.6
		Acetaldehyde	1.07E-03	2.68E-04
		Acrolein	1.30E-04	3.24E-05
		Benzene	1.31E-03	3.27E-04
		Formaldehyde	1.65E-03	4.13E-04
		PAH	2.35E-04	5.88E-05
		HAP	N/A	1.39E-03
53	Fire Pump #8	PM	1.2	0.3
		PM <sub>10</sub>	1.2	0.3
		SO <sub>2</sub>	1.1	0.3
		VOC	1.3	0.4
		CO	3.4	0.9
		NO <sub>x</sub>	15.8	4.0
		Acetaldehyde	2.74E-03	6.85E-04
		Acrolein	3.30E-04	8.26E-05
		Benzene	3.33E-03	8.33E-04
		Formaldehyde	4.21E-03	1.05E-03



EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
		PAH	6.00E-04	1.50E-04
		HAP	N/A	3.53E-03
54a	Lime Kiln Backup Motor #2	PM	0.1	0.1
		PM <sub>10</sub>	0.1	0.1
		SO <sub>2</sub>	0.1	0.1
		VOC	0.1	0.1
		CO	4.2	1.1
		NO <sub>x</sub>	2.6	0.7
		Acetaldehyde	3.12E-03	7.81E-04
		Acrolein	2.95E-03	7.36E-04
		Benzene	1.77E-03	4.42E-04
		Chloroform	1.53E-05	3.84E-06
		Dichloromethane	4.61E-05	1.15E-05
		Ethylene Dibromide	2.39E-05	5.96E-06
		Formaldehyde	2.30E-02	5.74E-03
		Methanol	3.43E-03	8.57E-04
		PAH	1.58E-04	3.95E-05
		HAP	N/A	9.08E-03
54b	Lime Kiln Backup Motor #3	PM	0.1	0.1
		PM <sub>10</sub>	0.1	0.1
		SO <sub>2</sub>	0.1	0.1
		VOC	0.1	0.1
		CO	3.3	0.9
		NO <sub>x</sub>	2.0	0.5
		Acetaldehyde	2.46E-03	6.14E-04
		Acrolein	2.31E-03	5.79E-04
		Benzene	1.39E-03	3.48E-04
		Chloroform	1.21E-05	3.01E-06
		Dichloromethane	3.63E-05	9.06E-06
		Ethylene Dibromide	1.87E-05	4.69E-06
		Formaldehyde	1.80E-02	4.51E-03
		Methanol	2.69E-03	6.73E-04
		PAH	1.24E-04	3.10E-05
		HAP	N/A	7.13E-03
55	Paper Additive Silo	PM	2.6	11.3
		PM <sub>10</sub>	2.6	11.3
56	Dye Operation	VOC	2.9	12.8
57	Radio Tower Emergency Generator	PM	0.2	0.1
		PM <sub>10</sub>	0.2	0.1
		SO <sub>2</sub>	0.2	0.1
		VOC	0.3	0.1
		CO	0.6	0.2
		NO <sub>x</sub>	2.6	0.7
58	Fire Pump #6	PM	0.1	0.1
		PM <sub>10</sub>	0.1	0.1

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EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
		SO <sub>2</sub>	0.5	0.2
		VOC	0.6	0.2
		CO	0.7	0.2
		NO <sub>x</sub>	1.5	0.4
		Acetaldehyde	1.23E-03	3.09E-04
		Acrolein	1.49E-04	3.72E-05
		Benzene	1.50E-03	3.76E-04
		Formaldehyde	1.90E-03	4.75E-04
		PAH	2.70E-04	6.76E-05
		HAP	N/A	1.59E-03

\*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.

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### **SECTION III: PERMIT HISTORY**

Nekoosa-Edwards Paper Company originally constructed the facility from 1966 to 1968 and began operation in July 1968. The facility registered with ADEQ in 1968. Original equipment included the No. 1 Power Boiler (SN-03), the No. 1 Recovery Boiler (no longer in service as a recovery boiler), and the No. 1 Smelt Dissolving Tank (no longer in service). Nekoosa-Edwards Paper Company amended the registration in 1970 to include the No. 1 Package Boiler (no longer in service).

Permit 287-A was issued in 1975. This modification included the installation of the No. 2 Power Boiler (SN-05) and the No. 62 Paper Machine.

Permit 287-A was modified in 1978 to include the No. 2 Recovery Boiler, the No. 2 Smelt Tank Vents, the No. 2 Lime Kiln, the Kamyr digester, a diffusion washer, the No. 2 Evaporators, the No. 2 Bleach Plant, a new pulp dryer, the No. 2 wood yard and the No. 63 Paper Machine. The original pulp dryer and the No. 1 Lime Kiln were shut down and removed from service. This was a permitting action under the Prevention of Significant Deterioration (PSD) regulations. The Environmental Protection Agency (EPA) reviewed the PSD permitting action.

Permit 287-A was modified a second time later in 1978 to amend the stack height on the recovery boiler from 336 feet to 295 feet.

Permit 287-AR-3 was issued in 1985. This was a PSD permitting action to include installation of the No. 1 Package Boiler (removed from service) and the No. 2 Package Boiler (SN-11). Additionally the capacity of the No. 2 Power Boiler (SN-05) was increased from 500,000 pounds per hour steam to 575,000, the capacity of the No. 2 Recovery Boiler (SN-06) was increased from 3.5 million pounds of black liquor solids (BLS) per day to 4.4 million, and the capacity of the No. 2 Smelt Dissolving Tanks (SN-08) was increased from 45,583 pounds per hour of salt cake to 57,292.

Permit 287-AR-4 was issued on March 24, 1987. This permitting action replaced the No. 1 Package Boiler with the No. 3 Package Boiler (SN-12).

Permit 287-AR-5 was issued June 24, 1987. Permit 287-AR-4 was a PSD permitting action for the replacement of the No. 1 Recovery Boiler and No. 1 Smelt Dissolving Tanks with the No. 3 Recovery Boiler and the No. 3 Smelt Dissolving Tanks.

Permit 946-A was issued on July 14, 1989. This was a PSD permitting action allowing conversion of the old No. 1 Recovery Boiler to the No. 3 Power Boiler (SN-01). Additionally, this permit allowed the installation of the No. 3 Lime Kiln (SN-02). Georgia-Pacific acquired the permit in 1991.

Permit 287-AR-6 was issued on December 31, 1991. This permitting action allowed an increase in the BLS firing rate in the No. 3 Recovery Boiler.

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Permit 287-AR-7 was issued on May 24, 1993. This permitting action consolidated permit 287-AR-6 and permit 946-A and allowed the installation of a precipitated calcium carbonate (PCC) facility.

Permit #287-AOP-R0 was issued on June 1, 1999. The construction of the new bleaching stages for the 1A and the 1B Bleachplants were included in this permit as well as the construction of an oxygen delignification system for the No. 2 Pulp Mill. These projects were necessary for the facility to convert to 100% chlorine dioxide bleaching. Several sources and/or pollutants not previously requiring a permit were listed in the permit. This resulted in an increase in the permitted emissions from this facility. A diesel-powered generator was added to operate lift pumps that move mill effluent from the lift pit to the wastewater treatment system as an insignificant activity.

Permit #287-AOP-R1 was the second operating permit issued to Georgia-Pacific Corporation - Ashdown Operations under Regulation 26. This modified permit, issued on July 12, 2000, added Tire Derived Fuel (TDF) to the permissible fuels list for the No. 2 Power Boiler and allowed the installation of a new causticizer to the recausticizer vent, spoiler bars in the dryers of the papermachine designated as source SN-44a that increased the speed of the machine by approximately 10 feet per minute, and another hood exhaust fan on the papermachine designated as source SN-44b. Typographical errors were corrected in this permit.

Permit #287-AOP-R2 was issued on June 15, 2001. This modification allowed recycled sanitary products, consisting of cellulose and polypropylene as a fuel for the three Power Boilers. It also allowed a request to maintain flue gas temperatures above a specified minimum temperature only when bark feed rates exceed 10% of the boiler capacity, since natural gas burns with negligible VOC emission rates. A higher consumption rate for fuel oil was allowed for the #1 Power Boiler (SN-01) and the No. 2 Lime Kiln (SN-09) based on the reduced sulfur content of the fuel currently available; SO<sub>2</sub> emissions will be unchanged. The Engineering Department proposed to add a new air-paper separator to an existing cyclone in the converting area that will slow the trim stream and allow the trim to fall out. This was added to the list of insignificant items. On August 7, 2001, the above permit was officially transferred to Domtar A. W. Corporation.

Permit #287-AOP-R3 was issued on August 8, 2002. This modification was necessary as a result of stack testing that showed that CO emission rates were higher for SN-16 and SN-17 (1A and 1B Bleachplants) and also allowed increased emissions of CO from SN-45, the oxygen delignification system. The BACT review of similar processes elsewhere showed a wide range of CO emissions with no correlation with any known processing factors and no control requirements. CO emissions at other bleach plants ranged from 0.65 lb/ton to 1.4 lb/ton with Domtar on the high side at 1.89 lb/ton. BACT was determined to be "no controls". The increase in CO of 515.2 tpy required a PSD review that determined concentrations at the plant perimeter were well below the NAAQS.

A CMS for gas scrubber vent gas inlet flow rate was also replaced with an equivalent continuous monitoring of amperage on the induced draft fans based on a letter from EPA/Toxic & Inspection Coordination branch. A diesel-powered generator operated lift pump was added to

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operate lift pumps that move mill effluent from the inlet canal to the waste water treatment system as an insignificant activity.

Permit #287-AOP-R4 was issued on July 19, 2005. The permit updated the process descriptions for the three bleachplants (SN-16, SN-17 and SN-18) and applicable regulations reviewed for all sources. Storage tanks with less than 10 tpy of VOC emissions and under 5 tpy of total HAP emissions are under Insignificant Activities.

The renewal permit incorporated the following specifically requested changes:  
The High Density Storage Tanks (formerly SN-39) are no longer included in the list of permitted sources. The permit lists the tanks as Insignificant Activities. Facility total emissions were adjusted for this reduction.

The compliance date for the MACT standard (40 C.F.R., § 63, Subpart MM) was March 13, 2004. The sources No. 3 Lime Kiln (SN-02), No. 2 Recovery Boiler (SN-06), No. 2 Smelt Dissolving Tank (SN-08), No. 2 Lime Kiln (SN-09), No. 3 Recovery Boiler (SN-14) and No. 3 Smelt Dissolving Tank (SN-15) are affected sources for Subpart MM. SN-02, SN-06, SN-08, SN-09, SN-14 and SN-15 have new specific conditions relating to Subpart MM. The two lime kilns (SN-02 and SN-09) were connected to the two silo vents to the slaker scrubbers associated with the Reausticizer Vents (SN-29) when the lime kilns are not in operation. Emissions of pollutants from this source remained unchanged.

The renewal permit included a modification to install an additional carbonator to the five PC Carbonators previously permitted (SN-30 through SN-35); the Department authorized the installation in a letter dated May 10, 1996.

The permit allowed the #2 Lime Kiln (SN-09) to use larger quantities of fuel oil as a substitute for natural gas. Domtar submitted data to demonstrate absorption of SO<sub>2</sub> during the calcination process which, is a major factor in removal of SO<sub>2</sub> emissions. The permit omitted a previous requirement for maintaining the ratio of natural gas flow rate to the stack oxygen content within a specified range because of the use of up to 100% fuel oil in the fuel mix allowed in the permit. The permit revised emissions based on current AP-42 factors and maximum usage of residual oil. Domtar will rely on CEMS to operate the kiln to meet the lower permitted emission rates. The permit allowed changing of the exhaust fans above the paper machines (SN-44a, b, c, and d) to provide false ceilings in order to minimize condensation on the paper rolls. The Ammonia Storage Tank (formerly SN-24) was deleted from permit.

The permit omitted reference to former source SN-46 as part of the pre-bleach washer, as it was actually included in SN-17 emissions.

The permit incorporated permitted limits based on 10% of the heat rating (in tons/24 hours) to establish upper limits. (Plant Wide Conditions Nos. 8 and No. 9) The permit dropped previous requirements for measuring and recording flue gas exit temperatures, as stack test data shows acceptable rates of VOC destruction under normal operating procedures and combustion temperatures. The permit discontinued testing for acetaldehyde and benzene after testing

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demonstrated the HAPs were below detectable levels. The permit added reprocessed fuel oil as a fuel for the #1 Power Boiler, No. 2 Power Boiler and the #2 Lime Kiln.

Permit 287-AOP-R5 was issued on October 13, 2005. This permit modification changed the scrubber parameters for the bleach plant scrubbers (SN-16, SN-17 and SN-18) based on testing, allowed the use of weak wash water in the No. 3 Smelt Dissolving Tank (SN-15), allowed the use of COD instead of BOD5 for testing of the wastewater treatment facility and deleted the requirement to test the mixed liquor volatile suspended solids.

Permit 287-AOP-R6 was issued on July 12, 2006. This permit incorporated several changes to the facility. These changes included allowing weak wash to be used on the Number 2 Smelt Dissolving Tank Vent Scrubbers (SN-08), allowing petroleum coke to be burned as fuel in the No. 2 Power Boiler (SN-05), allowing No. 6 fuel oil to be burned as fuel in the #3 Lime Kiln (SN-02), and correcting various typographical errors. This modification also incorporated alternate compliance methods for 40 C.F.R. § 63, Subpart S under the clean condensate alternative provisions of the subpart. Finally, the facility removed the No. 3 package boiler (SN-12) and its associated emissions from the permit.

Permit 287-AOP R7 was issued on January 29, 2008. This modification quantified emissions from the haul roads (SN-46) for the first time, added a coal storage pile to the insignificant activities list, added a wet electrostatic precipitator as a control device for particulate emissions for SN-03, and corrected typographical errors.

Permit 287-AOP-R8 was issued on September 17, 2009. This modification permitted the construction of a tenth weak black liquor tank (SN-36-T10). The new tank was constructed to allow existing tanks to be temporarily taken out of service for inspection and repair. The emissions increase associated with the new tank is 0.18 tpy VOC, 0.03 tpy total reduced sulfur, and 0.18 tpy methanol.

Permit 287-AOP-R9 was issued on September 6, 2011. The Title V permit was renewed with modifications followed by an additional three applications for changes not requested in the Title V renewal. The permit was modified to incorporate the following requests:

#### Title V Renewal

- Revised emission limits for various sources using updated National Council for Air and Stream Improvement, Inc. (NCASI) and AP-42 emission factors;
- Added a condition, Plantwide Condition #7, to clarify that a change in published emission factors does not necessarily constitute non-compliance with the applicable permit limit;
- Added Specific Conditions #6a and #39a to specify monitoring and recordkeeping requirements for the permitted fuels that contain sulfur;

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- Revised the equation in Specific Condition #39 to account for the 97.5% SO<sub>2</sub> removal efficiency for the wet electrostatic precipitator (WESP);
- Revised Plantwide Condition #19.k to incorporate additional compliance options provided under 40 C.F.R. § 63.446 paragraphs (e)(3) and (e)(5);
- Replaced “No. 6 fuel oil” for (SN-02, SN-03, SN-05, and SN-09) with “fuel oil” in order to allow the use of cleaner fuel oils such as “No. 2 fuel oil”;
- Reduced the frequency to once every five year for stack testing for NO<sub>x</sub> in Specific Condition #110 based on multiple stack tests which indicate annual testing is not necessary to provide assurance that the emission limits will not be exceeded;
- Revised Specific Condition #42 and Specific Condition #42a to replace the one time stack testing requirement for establishing the operating parameters for the WESP;
- Reduced frequency of the requirement to perform opacity readings in Specific Condition #39 to monthly because the WESP is subject to continuous monitoring requirements such that more frequent observations are no longer necessary;
- Added Plantwide Condition #29 to incorporate the requirement to maintain a risk management plan required by 40 C.F.R. § 68;
- Updated the insignificant activities to reflect current activities;
- Revised the opacity limit to 35% in Specific Condition #134.f to match the limit in the reference NESHAP; and
- Incorporated provisions of 40 C.F.R. § 60 Subpart Db – *New Source Performance Standards for Industrial-Commercial-Institutional Steam Generating Units* for the No. 2 Recovery Boiler (SN-06) and No. 3 Recovery Boiler (SN-14).

#### Modification #1

Domtar submitted an application to correct a technical error that affected the proposed throughput and that was discovered after SN-36-T10 had been permitted in 0287-AOP-R8. Due to the corrected throughput permitted emission limits increased by 5.5 tpy VOC and 0.25 tpy TRS.

#### Modification #2

Domtar submitted an application to install a 238.1 MMBtu/hr natural gas fired rental package boiler (SN-47) for the purpose of maintaining steam production that would be otherwise lost

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while the power boilers are taken offline for repair and maintenance. The boiler was permitted to operate for a maximum 90 days with a utilization up to 10% annual capacity factor.

### Modification #3

Domtar submitted an application to allow combustion of No. 2 fuel for up to 3,200 hours per year at SN-47. The proposed increase in operation necessitated the removal of both the 90 day and 10% annual capacity factor limitation. The permitted amount of natural gas was increased from 490.1 MMscf/yr to 490.3 MMscf/yr. The total permitted emission limits for the boiler considering this modification and the previous is 9.5 tpy PM/PM<sub>10</sub>, 0.6 tpy SO<sub>2</sub>, 1.3 tpy VOC, 20.6 tpy CO, 34.32 tpy NO<sub>x</sub>, and less than 0.004 tpy Lead.

Overall, the permitted emission limits increased by 439.2 tpy PM, 1550.56 tpy VOC, and 79.34 tpy TRS, and decreased by 126.2 tpy PM<sub>10</sub>, 10.2 tpy SO<sub>2</sub>, 97.53 tpy CO, and 44.88 tpy NO<sub>x</sub>. Although the increases for PM, VOC, and TRS would otherwise exceed the significant emission rate and thus trigger PSD, these increases were not attributable to any physical change or change in method of operation with the exception of the modifications (#1, #2, and #3) discussed above. The increases in PM, VOC, and TRS are due to primarily refined information for the road estimates (PM) and use of NCASI emission factors and other information (*e.g.* new pollutants and greater availability of test data) that was not available when certain emission limits were established. For the increases resulting from the three modifications above, the sum of the associated emissions are clearly below significant emission rates. Therefore, PSD review was not triggered with this modification.

Permit 287-AOP-R10 was issued on March 2, 2012. The amount of softwood used to produce pulp and paper products increased, but the mass amount of chips processed annually did not increase. The permit was modified to include emissions from a new chip pile and associated wood chip handling equipment. The modification triggered PSD review, and it resulted in the overall increase in permitted emissions of 11.4 tpy PM, 9.5 tpy PM<sub>10</sub>, and 1,224.7 tpy VOC.

Permit 287-AOP-R11 was issued on December 12, 2012. The emission limits for certain pollutants were revised based on stack testing conducted at the Oxygen Delignification System (SN-45). Emission limits for NO<sub>x</sub> and SO<sub>2</sub> were revised at SN-47 to allow combustion of used oil and reprocessed oil that has been blended with the fuel oil. Also, SN-47 was renamed to No. 4 Package Boiler. Overall, permitted emissions increased by 38.4 tpy SO<sub>2</sub>, 4.6 tpy NO<sub>x</sub>, 5.39 tpy acetaldehyde, 0.44 tpy formaldehyde, and 8.76 tpy TRS.

Permit 287-AOP-R12 was issued on March 1, 2013. Six existing stationary reciprocating internal combustion engines as permitted sources (SN-50, SN-51, SN-52, SN-53, SN-54a, and SN-54b). Permitted emissions increased by 1.4 tpy PM/PM<sub>10</sub>, 1.3 tpy SO<sub>2</sub>, 1.5 tpy VOC, 5.0 tpy CO, 14.3 tpy NO<sub>x</sub>, and less than 0.03 tpy HAP.

Permit 287-AOP-R13 was issued on June 2, 2014. Five existing paper additive silos (SN-55) with fabric filters, an existing dye operation (SN-56), and fifteen existing cooling towers (ISA)



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were added to the permit. Overall, permitted emissions increased by 11.3 tpy PM/PM<sub>10</sub> and 12.8 tpy VOC.

Permit 287-AOP-R14 was issued on August 7, 2014. An 82 hp diesel-fired emergency engine (SN-57) was added to the permit. Overall, permitted emissions increased by 0.1 tpy PM/PM<sub>10</sub>, 0.1 tpy SO<sub>2</sub>, 0.1 tpy VOC, 0.2 tpy CO, and 0.7 tpy NO<sub>x</sub>.

Permit 287-AOP-R15 was issued on April 17, 2015. A paper machine (SN-44D) was modified to produce fluff pulp and baled pulp. Overall, permitted emission limits increased by 15.1 tpy VOC, 4.66 tpy acetaldehyde, 0.23 tpy acrolein, and 0.9 tpy formaldehyde.

**SECTION IV: SPECIFIC CONDITIONS**

SN-01

No. 3 Power Boiler

Source Description

The No. 3 Power Boiler was originally the mill's No. 1 Recovery Boiler, but was converted to a power boiler in 1990-91. Startup as a power boiler was in April, 1991. Due to its design heat input rate (790 MMBtu/hr) and date of installation/construction, the boiler is subject to 40 C.F.R. § 60, Subparts A and Db. The No. 3 Power Boiler is also subject to 40 C.F.R. 52, Subpart A.

The No. 3 Power Boiler burns primarily bark with gas used to maintain the header pressure and assist combustion. Under normal operating conditions, the bark feed rate is between 50 and 65 tons per hour, and no gas is necessary to maintain steam requirements. Currently, No. 3 Power Boiler burns no NCGs (non-condensable gases, including TRS and VOCs).

The No. 3 Power Boiler has a moving grate (hydragrate), combustion air system including over fire air, and a two chamber electrostatic precipitators (ESP) for particulate control. The permitted particulate matter emission limit for the unit is 19.8 lb/hr (derived from PSD permitting activity), and a stack test every five years to verify the ESP's performance. The 0.025 lb/MMBtu limit for PM was a result of PSD permitting action.

Specific Conditions

- The permittee shall not exceed the emission rates set forth in the following table. The permittee shall demonstrate compliance with the PM<sub>10</sub> emission rates through compliance with Specific Condition #12. The permittee shall demonstrate compliance with the VOC emission rates through compliance with Specific Condition #13. The permittee shall demonstrate compliance with the SO<sub>2</sub> emission rates through compliance with Specific Condition #6. Compliance with the NO<sub>x</sub> and CO emission rates shall be demonstrated through compliance with Specific Conditions #4.h and #5. [Reg.19.501 *et seq.*, Reg.19.901 *et seq.*, and 40 C.F.R. § 52, Subpart E]

SN	Description	Pollutant	lb/hr	tpy
01	No. 3 Power Boiler (790 MMBtu/hr) ESP	PM <sub>10</sub>	19.8	86.5
		SO <sub>2</sub>	62.0	271.6
		VOC	21.3	93.3
		CO	276.5	1211.1
		NO <sub>x</sub>	237.0	1038.1
		Lead	3.98E-03	1.74E-02

- The permittee shall not exceed the emission rates set forth in the following table. The lb/MMBtu rates apply only after the boiler has reached stable operating conditions after

increasing to a production rate greater than 250,000 lb/hr of steam. Compliance with the lb/MMBtu emission rate for CO shall be demonstrated by recording the amount of fuel used during applicable periods each day, multiplying by the appropriate heating value, totaling the Btu input for the period and dividing by the number of hours of stable steam production. For determining the CO emission rate, the permittee shall use only the hours of stable steam production above 250,000 lb/hr. A steam production monitor shall be used to establish operational periods when stable rates are above 250,000 lb/hr. Compliance with the PM, SO<sub>2</sub>, VOC, and NO<sub>x</sub> emission rates shall be demonstrated through compliance with Specific Conditions #12, #6, #13 and #4.d, respectively. [Reg.19.501 *et seq.*, Reg.19.901 *et seq.*, and 40 C.F.R. § 52, Subpart E]

Pollutant	Emission Limit (lb/MMBtu)
PM <sub>10</sub>	0.025
SO <sub>2</sub>	0.10
VOC	0.027
CO	0.35
NO <sub>x</sub>	0.30

3. The permittee shall not exceed the emission rates set forth in the following table. The permittee shall demonstrate compliance with the PM emission rate through compliance with Specific Condition #12. Testing indicated compliance with the acetaldehyde, benzene, and naphthalene emission rates. [Reg.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
01	No. 3 Power Boiler (790 MMBtu/hr) ESP	PM	19.8	86.5
		Acetaldehyde	0.21	0.92
		Acrolein	0.07	0.32
		Antimony	3.98E-04	1.74E-03
		Arsenic	3.79E-04	1.66E-03
		Benzene	3.13	13.7
		Beryllium	3.79E-04	1.66E-03
		Cadmium	1.02E-03	4.48E-03
		Chromium	1.30E-03	5.70E-03
		Chromium VI	4.65E-04	2.04E-03
		Cobalt	1.80E-04	7.89E-04
		HCl	0.64	2.78
		Hexane	1.67	7.33
		Manganese	0.05	0.24
		Mercury	1.92E-03	8.41E-03
		Naphthalene	0.5	2.19
		Nickel	3.32E-03	0.01
		Selenium	3.13E-03	0.01
		HAP	N/A	33.11

4. This source is subject to 40 C.F.R. § 60, Subpart A, General Provisions and 40 C.F.R. § 60, Subpart Db, *Standards of Performance for Industrial-Commercial-Institutional Steam*

*Generating Units* due to installation after June 19, 1984 and a heat input capacity greater than 100 MMBtu/hr. A copy of Subpart Db is included in Appendix A of this permit. The permittee is subject, but not limited to the following provisions: [Reg.19.304 and 40 C.F.R. § 60, Subpart Db]

- a. Particulate matter emissions will not exceed 0.1 lb/MMBtu while combusting wood waste. (Note: The permittee is restricted to a lower rate of 0.025 lb/MMBtu due to a PSD permitting action.) [Reg.19.304 and 40 C.F.R. § 60.43b(c)(1)]
- b. The permittee shall not exceed 20% opacity (6-minute average), except for one 6 minute period per hour of not more than 27 percent opacity. Compliance shall be demonstrated through use of a continuous opacity monitor. [Reg.19.304 and 40 C.F.R. § 63.43b(f) and 40 C.F.R. § 52, Subpart E]
- c. The particulate standard and opacity standard apply at all times except during periods of startup, shutdown or malfunction. [Reg.19.304 and 40 C.F.R. § 63.43b(g)]
- d. The permittee shall not emit in excess of 0.3 lb/MMBtu of NO<sub>x</sub> while combusting natural gas with wood. [Reg.19.304 and 40 C.F.R. § 63.44b(d)]
- e. The NO<sub>x</sub> emission standard applies at all times except during periods of startup, shutdown and malfunction. [Reg.19.304 and 40 C.F.R. § 63.44b(h)]
- f. Compliance with the NO<sub>x</sub> emission standard is determined on a 30-day rolling average basis. [Reg.19.304 and 40 C.F.R. § 63.44b(i)]
- g. The permittee shall install, calibrate, maintain and operate a continuous monitoring system for measuring the opacity of emissions discharged to the atmosphere and record the output of the system. The permittee shall comply with the ADEQ CEMS operating conditions in Appendix B. [Reg.19.304 and 40 C.F.R. § 63.48b(a), Reg.19.703, 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]
- h. The permittee shall install, calibrate, maintain and operate a CEMS for measuring the NO<sub>x</sub> emissions discharged to the atmosphere and record the output of the system. The permittee used a CO<sub>2</sub> monitor as the diluent monitor. The permittee shall comply with the ADEQ CEMS operating conditions in Appendix B. [Reg.19.304 and 40 C.F.R. § 63.48b(b), Reg.19.703, 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]
- i. The permittee shall record and maintain records of the amounts of fuel combusted during each day and calculate the annual capacity factor individually for natural gas and wood for each calendar quarter. The annual capacity factor is determined

on a twelve-month rolling average basis with a new annual capacity factor calculated at the end of each calendar month. [Reg.19.304 and 40 C.F.R. § 60.49b(d)]

- j. The permittee shall maintain records of opacity. The permittee shall maintain these records on site and make them available to Department personnel upon request. [Reg.19.304 and 40 C.F.R. § 60.49b(f)]
- k. The permittee shall maintain records of the following information for each steam generating unit operating day:
  - i. Calendar date.
  - ii. The average hourly nitrogen oxides emission rates (expressed as NO<sub>2</sub>) (ng/J or lb/MMBtu heat input) measured or predicted.
  - iii. The 30-day average nitrogen oxides emission rates (ng/J or lb/MMBtu heat input) calculated at the end of each steam generating unit operating day from the measured or predicted hourly nitrogen oxides emission rates for the preceding thirty steam generating unit operating days.
  - iv. Identification of the steam generating unit operating days when the calculated 30-day average nitrogen oxides emission rates are in excess of the nitrogen oxides emission standards under § 60.44, with the reason for such excess emissions as well as a description of corrective actions taken.
  - v. Identification of the steam generating unit operating days for which pollutant have not been obtained, including reasons for not obtaining sufficient data and a description of the corrective action taken.
  - vi. Identification of the times when emission data have been excluded from the calculation of average emission rates and the reasons for excluding data.
  - vii. Identification of “F” factor used for calculations, method of determinations, and type of fuel combusted.
  - viii. Identification of the times when the pollutant concentration exceeded full span of the continuous monitoring system.
  - ix. Description of any modifications to the continuous monitoring system that could affect the ability of the continuous monitoring system to comply with Performance Specification 2 or 3.

- x. Results of daily CEMS drift tests and quarterly accuracy assessments as required under Appendix F, Procedure 1. [40 C.F.R. § 60.49b(g)]
- l. The permittee is required to submit excess emissions reports for any calendar quarter during which there are excess emissions of NO<sub>x</sub> from the affected facility. If there are no excess emissions during the calendar quarter, the owner or operator shall submit a report semiannually stating that no excess emissions occurred during the semiannual reporting period. [Reg.19.304 and 40 C.F.R. § 60.49b(g)]
- m. The permittee shall submit a quarterly report containing the information recorded under 40 C.F.R. § 60.49(b)g) for nitrogen oxides under § 60.48b. All quarterly reports must be post marked by the 30th day following the end of each calendar quarter. This report will contain the information required by Specific Condition 4(k)(i-ix). [Reg.19.304 and 40 C.F.R. § 60.49b(i)]
- n. The permittee shall maintain all records required under this section for a period of 2 years following the date of such record. The permittee shall maintain the records on site and make them available to Department personnel upon request. [Reg.19.304 and 40 C.F.R. § 60.49b(o)]
- 5. The permittee shall install, calibrate, maintain and operate a CEMS for measuring the CO emissions discharged to the atmosphere and record the output of the system. The permittee shall comply with the ADEQ CEMS operating conditions in Appendix B. [Reg.19.703, 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]
- 6. The permittee shall only use the following fuels to fire this source: bark, including bark and wood chips used to absorb oil spills, wood waste, pelletized paper fuel, recycled sanitary products composed of cellulose and propylene, natural gas and tire derived fuel (TDF). Plantwide Condition #13 establishes plant wide limits on the 24-hour usage of TDF. [Reg.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]
- 6a. The permittee shall calculate and maintain records of the calculation of sulfur dioxide emissions for all fuel types except fuel oil based on the amount of sulfur emitted according to the following equation:

$$Y = 0.4005 * X - 0.2645$$

Where:

Y = pounds of sulfur emitted per ton of dry fuel feed to the boilers

X = pounds of sulfur input per ton of dry bark

[Reg.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]

7. If the permittee isolates a chamber of the ESP for repair, the permittee may operate the boiler. Readings from the Continuous Opacity Monitor shall demonstrate compliance with the emission rates. [Reg.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]
8. If both chambers of the ESP must shutdown for repair at the same time, natural gas is the only fuel allowed to fire the No. 3 Power Boiler. Readings from the Continuous Opacity Monitor shall demonstrate compliance with the emission rates. The permittee shall note in the operating record times when both ESPs are shut down for maintenance. [Reg.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]
9. The dual chamber ESP operates for control of particulates and is a Pollutant Specific Emission Unit (PSEU) under the applicability requirements of CAM. The CAM plan requires continuous monitoring of the opacity using the COM. Quality Assurance for the CEMS used for measurement of particulates is in Appendix B. [Reg.19.703, 40 C.F.R. § 52, Subpart E, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 64.2(a)(1), (2) and (3)]
10. The heat input to source SN-01 shall not exceed 790 MMBtu/hr. The use of the following heating values of each fuel, as described in Specific Condition #11, determines the total heat input to the boiler: [Reg.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]

Fuel	Btu Value
Natural Gas	1.02 MMBtu per 1000 scf
Bark and Wood Waste	8.5 MMBtu per ton
Pelletized Fuel	16.0 MMBtu per ton
Tire Derived Fuel	27.0 MMBtu per ton

11. The permittee shall demonstrate compliance with the heat input limit in Specific Condition #10 by recording the amount of each fuel used each operating day, multiplying the amount of each fuel used by the appropriate heating value, totaling the Btu value, and dividing by twenty-four. The value for each day shall be averaged with the other days in a calendar month and a twelve-month rolling average calculated at the end of each month. The permittee shall update the records daily, keep the records on-site, and make the records available to Department personnel upon request. The permittee shall submit an annual total and each month's individual data to the Department in accordance with General Provision No. 7. [Reg.19.705, Reg.19.901, and 40 C.F.R. § 52, Subpart E]
12. The permittee shall test source SN-01 every five years for particulate matter using EPA Reference Methods 5. The PM<sub>10</sub> test shall use either EPA Reference Methods 201A or 5.

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By using Method 5 for PM<sub>10</sub>, the facility shall assume all collected particulate is PM<sub>10</sub>. The permittee shall conduct all tests in accordance with Plantwide Condition #3. This test shall take place with the maximum rate of bark or wood waste fuel and with a minimal amount of natural gas fuel in the boiler. [Reg.19.702 and 40 C.F.R. § 52, Subpart E]

13. The permittee shall test source SN-01 every five years for volatile organic compound emissions using EPA Reference Method 25A. The permittee shall conduct all tests in accordance with Plantwide Condition #3. [Reg.19.702 and 40 C.F.R. § 52, Subpart E]
14. The carbon monoxide limit is a thirty-day rolling average. Days when the unit is not operating are not included in the thirty-day rolling average. The permittee shall maintain a thirty-day rolling average and a twelve-month rolling average. The permittee shall update the records no later than the fifteenth day following the last day the 30-day rolling average that the records represent, keep the records on-site, and make the records available to Department personnel upon request. The permittee shall submit to the Department each 30-day average and a 12-month rolling average pursuant to General Condition 7. [Reg.19.705 and 40 C.F.R. § 52, Subpart E]



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## SN-02

### No. 3 Lime Kiln

#### Source Description

Lime mud, which is primarily calcium carbonate, is sent to the lime kiln for calcining (removal of CO<sub>2</sub>) and reuse in the reaction with green liquor. The No. 3 Lime Kiln (SN-02), last modified in 1991, is natural gas and #6 fuel oil fired with a heat input capacity of 153 MMBtu/hr. Non-condensable gases may not be incinerated in the No. 3 Lime Kiln.

An electrostatic precipitator controls particulate matter emissions from this source. CEMS monitor the TRS and the CO emissions from the No. 3 Lime Kiln. A continuous opacity monitor (COM) is also located at this source.

Stack gas from this lime kiln feeds the Precipitated Calcium Carbonate (PCC) plant. Because emissions from this source will be lower when the PCC plant is in operation, the annual emissions from the PCC plant have been included in the annual emissions for the No. 3 Lime Kiln.

During shutdown periods, the two lime silos for SN-02 and SN-09 will be connected to the slaker scrubbers instead of the lime kilns while the kilns are inspected and repaired. Due to its date of installation (1991), this source is subject to 40 C.F.R. § 60, Subpart BB - *Standards of Performance for Kraft Pulp Mills*. The source is also subject to 40 C.F.R. § 63, Subpart MM - *National Emission Standards for Hazardous Air Pollutants for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite, and Stand-Alone Semichemical Pulp Mills*. Since the source is subject to a MACT, the CAM rule does not apply. Fuel to air ratios are continuously monitored and adjusted to maximize heat input and limit emissions, but this is not considered a control device, although it is a preventive measure. Permit opacity limits, annual particulate emission rates and emission limits in terms of lb/MMBtu of particulates represent the required emission limitations.

#### Specific Conditions

15. The permittee shall not exceed the emission rates set forth in the following table. Compliance with PM<sub>10</sub> limits shall be demonstrated by proper operation of the ESP and testing required in Specific Condition #22. Compliance with the sulfur dioxide emission rates shall be demonstrated by compliance with Specific Condition #24. Compliance with the volatile organic compounds emission rate shall be demonstrated through compliance with Specific Condition #23. Compliance with the carbon monoxide rates shall be demonstrated through compliance with Specific Condition #21. Compliance with the oxides of nitrogen emission rates shall be demonstrated through compliance with Specific Condition #31. [Reg.19.501 *et seq.* and 40 C.F.R. § 52, Subpart E]

SN	Description	Pollutant	lb/hr	tpy
02	No. 3 Lime Kiln (153 MMBtu/hr) ESP	PM <sub>10</sub>	8.6	37.7
		SO <sub>2</sub>	13.3	58.3
		VOC	14.6	63.9
		CO	55.0	240.9
		NO <sub>x</sub>	66.5	291.3
		Lead	4.62E-04	2.02E-03

16. The permittee shall not exceed the emission rates set forth in the following table. The rates below, with the exception of the PM rate, apply only when the lime kiln produces at least 100 tons per day. The permittee is responsible for maintaining production records (Specific Condition #33.j.i) to demonstrate when the emission rates apply. The permittee shall demonstrate compliance with the PM limit by proper operation of the ESP. The permittee shall demonstrate compliance with the sulfur dioxide emission rates through compliance with Specific Condition #25. Compliance with the volatile organic compounds emission rate shall be demonstrated through compliance with Specific Conditions #23. Compliance with the carbon monoxide rates shall be demonstrated through compliance with Specific Condition #21. Compliance with the oxides of nitrogen emission rates shall be demonstrated through compliance with Specific Condition #31. Compliance with the TRS emission rate shall be demonstrated through compliance with Specific Condition #18.c. [Reg.19.901 *et seq.* and 40 C.F.R. § 52, Subpart E]

Pollutant	Emission Limit (lb/MMBtu)
PM <sub>10</sub>	0.034 gr/dscf*
SO <sub>2</sub>	0.727 lb/ton of lime
VOC	0.795 lb/ton of lime
CO	3.0 lb/ton of lime
NO <sub>x</sub>	3.63 lb/ton of lime
TRS	8 ppmv (dry basis)*

\* Corrected to 10% O<sub>2</sub>

17. The permittee shall not exceed the emission rates set forth in the following table. Compliance with the PM emission rate shall be demonstrated by proper operation of the ESP. Previous testing demonstrated compliance with the benzene and methanol limits. Compliance with the TRS limit shall be demonstrated through compliance with Specific Condition #18.c. [Reg.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
02	No. 3 Lime Kiln (153 MMBtu/hr) ESP	PM	8.6	37.7
		Acetaldehyde	0.11	0.49
		Antimony	5.72E-05	2.51E-04
		Arsenic	1.19E-05	5.20E-05
		Benzene	0.24	1.05
		Beryllium	7.26E-05	3.18E-04
		Cadmium	2.86E-04	1.25E-03
		Chromium	8.80E-04	3.85E-03
		Cobalt	2.42E-04	1.06E-03
		Formaldehyde	0.19	0.82
		Manganese	9.68E-04	4.24E-03
		Mercury	7.92E-05	3.47E-04
		Methanol	1.31	5.74
		Nickel	1.83E-03	8.00E-03
		Selenium	3.96E-05	1.73E-04
		TRS	1.34	5.87
		HAP	N/A	8.92

18. This source is subject to 40 C.F.R. § 60, Subpart A, General Provisions and 40 C.F.R. § 60, Subpart BB, *Standards of Performance for Kraft Pulp Mills*, due to commencement of construction after September 24, 1976. A copy of Subpart BB can be found in Appendix C. The permittee is subject, but not limited to the following provisions: [Reg.19.304 and 40 C.F.R. § 60, Subpart BB]
- a. PM emissions shall not exceed 0.066 gr/dscf corrected to 10 percent oxygen when burning gaseous fossil fuel. (Note: 40 C.F.R. § 63.862(1)(a)(i)(C) requires a 0.064 gr/dscf) [Reg.19.304 and 40 C.F.R. § 60.282(a)(3)(i) and 40 C.F.R. § 63.862(1)(a)(i)(C)]
  - b. Total reduced sulfur emissions from SN-02 shall not exceed 8ppm by volume on a dry basis, corrected to 10 percent oxygen. [Reg.19.304, 40 C.F.R. § 60.283(a)(5), and Reg.19.804]
  - c. The permittee shall install, calibrate, maintain, and operate a continuous monitoring system to monitor and record the concentration of the TRS emissions on a dry basis and the percent oxygen by volume on a dry basis in the gases discharged to the atmosphere from source SN-02. Appendix B contains a copy of the ADEQ CEMS conditions. The permittee must locate the CEMs downstream of the control device and set the spans of the CEMs as stated below. The permittee previously demonstrated that the CEMs meet the required spans. The permittee must notify the Department in writing before modifying either monitoring system.
    - i. TRS Concentration of 30 ppm for the TRS continuous monitoring system, and

- ii. At 25 percent oxygen for the continuous oxygen monitoring system. [Reg.19.304 and 40 C.F.R. § 60.284(a)(2), Reg.19.703, 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]
- d. The permittee shall calculate and record on a daily basis twelve-hour average TRS concentrations for the two consecutive periods of the operating day. The permittee shall determine each twelve-hour average as the arithmetic mean of the appropriate twelve contiguous one-hour average total reduced sulfur concentrations provided by the continuous monitoring system required under 40 C.F.R. § 60.284(a)(2). The permittee shall keep the records on-site and make the records available to Department personnel. [Reg.19.304 and 40 C.F.R. § 60.284(c)(1)]
- e. The permittee shall calculate and record on a daily basis twelve-hour average oxygen concentrations for the two consecutive periods of each operating day for source SN-02. The twelve-hour averages shall correspond to the twelve-hour average TRS concentrations under 40 C.F.R. § 60.284(c)(1) and determined as an arithmetic mean of the appropriate twelve contiguous one-hour average oxygen concentrations provided by each continuous monitoring system installed under 40 C.F.R. § 60.284(a)(2). The permittee shall keep the records on-site and make the records available to Department personnel. [Reg.19.304 and 40 C.F.R. § 60.284(c)(2)]
- f. The permittee will correct all twelve-hour average TRS concentrations to ten volume percent oxygen using the following equation: [Reg.19.304 and 40 C.F.R. § 60.284(c)(3)]

$$C_{corr} = C_{Meas} * \frac{(21 - X)}{(21 - Y)}$$

where:

- C<sub>corr</sub> = the concentration corrected for oxygen
- C<sub>meas</sub> = the concentration uncorrected for oxygen
- X = the volumetric oxygen concentration in percentage to be corrected to 10%
- Y = the measured 12-hour average volumetric oxygen concentration

- g. For the purposes of reports required under § 60.7(c), the permittee shall report semiannually periods of excess emissions from source SN-02. Periods of excess emissions are defined as 12-hour average TRS concentrations above 8 ppm by volume. [40 C.F.R. § 60.284(d)(2)]

h. The Director shall not consider periods of excess emissions reported under 40 C.F.R. § 60.284(d) to be indicative of a violation of § 60.11(d) provided that the Director determines the affected facility, including air pollution control equipment, is maintained and operated in a manner consistent with good air pollution control practice for minimizing emissions during periods of excess emissions. [Reg.19.304 and 40 C.F.R. § 60.284(e)]

19. Visible emissions may not exceed the limits specified in the following table as measured by EPA Reference Method 9. Compliance shall be demonstrated through the use of a COMS.

SN	Limit	Regulatory Citation
02	20%	Reg.19.503 and 40 C.F.R. § 52, Subpart E

20. The permittee shall install, calibrate, maintain and operate a continuous monitoring system for measuring the opacity of emissions discharged to the atmosphere from this source. The permittee shall comply with the ADEQ CEMS conditions found in Appendix B. [Reg.19.703, 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]

21. The permittee shall install, calibrate, maintain, and operate a CEMS for measuring CO emissions. A copy of the CEMS conditions is in Appendix B of this permit. [Reg.19.703, 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]

22. The permittee shall test source SN-02 every five years for particulate matter using EPA Reference Method 5. The PM<sub>10</sub> test shall use either EPA Reference Methods 201A and or 5. By using Method 5 for PM<sub>10</sub>, the facility shall assume all collected particulate is PM<sub>10</sub>. The permittee shall conduct all tests in accordance with Plantwide Condition #3. [Reg.19.702 and 40 C.F.R. § 52, Subpart E]

23. The permittee shall test source SN-02 every five years for volatile organic compound emissions using EPA Reference Method 25A. The permittee shall conduct all tests in accordance with Plantwide Condition #3. [Reg.19.702 and 40 C.F.R. § 52, Subpart E]]

24. The permittee shall only use pipeline quality natural gas, fuel oil (distillate or residual), reprocessed oil and onsite generated used fuel oil as fuel to fire the No. 3 Lime Kiln. The average sulfur content of the fuel oil shall not exceed 3.0% by weight. [Reg.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]

25. The permittee shall either test each shipment of fuel oil or obtain the manufacturer's certification of the sulfur content of the fuel fired at this source. Reg.19.705 and 40 C.F.R. § 52, Subpart E[Reg.19.705 and 40 C.F.R. § 52, Subpart E]

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26. The permittee shall not use in excess of 7,500,000 gallons of fuel oil at SN-02 per consecutive twelve month period. [Reg.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]
27. The permittee shall maintain records of the amount of fuel oil fired at this source and the sulfur content of the fuel oil. These records shall be maintained on site and made available to Department personnel upon request. Reg.19.705 and 40 C.F.R. § 52, Subpart E[Reg.19.705 and 40 C.F.R. § 52, Subpart E]
28. The permittee shall operate the No. 3 Lime Kiln at a maximum of 75% of the kiln's rated capacity when isolating one pre-coat filter for cleaning. The use of CEMS shall demonstrate compliance with the emission rates. The permittee shall note in the operating record the periods when a pre-coat filter is cleaned. Reg.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[Reg.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]
29. The permittee shall maintain a minimum of 65% solids on a 30-day rolling average in the lime mud fed to source SN-02. Compliance shall be demonstrated through compliance with Specific Condition 30Reg.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[Reg.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]
30. The permittee shall measure and record the solids content of the lime mud fed to source SN-02 at least once per day while the kiln is in operation. The permittee shall update the records no later than the fifteenth day of the month following the last 30-day rolling average that the records represent. These records shall be kept on site and made available to Department personnel upon request. [Reg.19.705 and 40 C.F.R. § 52, Subpart E]
31. The NO<sub>x</sub> emissions shall be calculated using the equations below. The permittee shall calculate the NO<sub>x</sub> emissions at least once every 15 minutes. The average hourly NO<sub>x</sub> emission rate shall be calculated using four or more data points equally spaced over an hour. The minimum data availability shall be 95% of this kiln's operating hours. The equation below may be changed based on emissions testing after the Department approves the test results and the new equation. The information used to calculate NO<sub>x</sub> emissions for SN-02 shall be made available to Department personnel upon request. [Reg.19.703, 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]

$$\begin{aligned}CNO_x &= -74.5742 + (24.1788*HO) + (0.985984*N) \\ENO_x &= CNO_x * dscf/hr * (1.194*10^{-7})\end{aligned}$$

where:

$CNO_x = NO_x$  concentration, 1-hr avg., ppm  
 $ENO_x = NO_x$  emissions, 1-hr avg., lb/hr  
N = total natural gas flow, 1000 standard cubic feet per hour  
dscf/hr = stack flow rate, dry standard cubic feet per hour  
 $1.194 \times 10^{-7}$  = Conversion factor, ppm  $NO_x$  to lbs/dscf  
HO = kiln hood oxygen concentration, percent

32. The CO and  $NO_x$  emission limits for this source are 30-day rolling averages. Days when the unit is not operating shall not be included in the 30-day rolling average. The permittee shall update the records no later than the fifteenth day following the last day of the 30-day rolling average period that the records represent. These records shall be kept on site and made available to Department Personnel upon request. [Reg.19.501 *et seq.* and 40 C.F.R. § 52, Subpart E]
33. The No. 3 Lime Kiln is considered an affected source pursuant to 40 C.F.R. § 63, Subpart MM, *National Emissions Standards for Hazardous Air Pollutants for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite and Stand-Alone Semichemical Pulp Mills*. A copy of Subpart MM may be found in Appendix E. This source is subject, but not limited to, the following conditions: [Reg.19.304 and 40 C.F.R. § 63, Subpart MM]
- a. The permittee may comply with the PM standards for the exhaust gases discharged to the atmosphere from SN-02 by ensuring the concentration of PM in the exhaust gases discharged to the atmosphere from SN-02 is less than or equal to 0.15 g/dscm (0.064 gr/dscf) corrected to 10 percent oxygen. [Reg.19.304 and 40 C.F.R. § 63.862(a)(i)(C)]
  - b. The permittee must install, calibrate, maintain and operate a continuous opacity monitoring system (COMS) for SN-02. [Reg.19.304 and 40 C.F.R. § 63.684(d)]
  - c. The 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. [Reg.19.304 and 40 C.F.R. § 63.864(d)(3)]
  - d. The permittee must reduce the COMS data to 6-minute averages calculated from 36 or more data points equally spaced over each 6-minute period. [Reg.19.304 and 40 C.F.R. § 63.864(d)(4)]
  - e. The permittee must implement corrective action, as specified in the startup, shutdown and malfunction plan if the average of ten consecutive 6-minute averages result in a measured opacity of greater than 20 percent. [Reg.19.304 and 40 C.F.R. § 63.864(k)(1)(i)]
  - f. The permittee is in violation of the standards of § 63.862 when opacity is greater than 20 percent for 6 percent or more of the operating time within any quarterly period. [Reg.19.304 and 40 C.F.R. § 63.864(k)(2)(ii)]

- g. The permittee must conduct an initial performance test using the test methods and procedures listed in § 63.7 and § 63.865(a) or 63.865(b), except as provided in § 63.865(c)(1). This testing was performed on September 12, 2004.
- h. The permittee must develop and implement a written plan as described in § 63.6(e)(3) that contains the specific procedures to be followed for operating the source during periods of startup, shutdown and malfunction, and a program of corrective action for malfunctioning process and control systems used to comply with the standards. In addition to the information required in § 63.6(e), the plan must include the requirements in paragraphs (a)(1) and (a)(2) of § 63.866.  
[Reg.19.304 and 40 C.F.R. § 63.866(a)]
  - i. Procedures to determine and record the cause of an operating parameter exceedance and the time the exceedance began and ended, and;
  - ii. Corrective actions to be taken in the event of an operating parameter exceedance, including procedures for recording the actions taken to correct the exceedance.
  - iii. The startup, shutdown and malfunction plan must also include the schedules listed in paragraphs (a)(2)(i) and (ii) of § 63.866:
    - 1. A maintenance schedule for each control technique that is consistent with, but not limited to, the manufacturer's instructions and recommendations for routine and long-term maintenance; and
    - 2. An inspection schedule for each continuous monitoring system required under § 63.864 to ensure, at least once in each 24-hour period, that each continuous monitoring system is properly functioning.
- i. The owner or operator of an affected source or process unit must maintain records of any occurrence when corrective action is required under § 63.864(k)(1), and when a violation is noted under § 63.864(k)(2). The permittee shall keep these records on site and make them available to Department personnel upon request.  
[Reg.19.304 and 40 C.F.R. § 63.866(b)]
- j. In addition to the general records required by § 63.10(b)(2), the owner or operator must maintain records of the information required in paragraphs (c)(1) through (c)(7) of § 63.866:
  - i. Records of the CaO production rates in units of Mg/d r ton/d for all lime kilns;



- ii. Records of the parameter monitoring data required under § 63.864, including any period when the operating parameter levels were inconsistent with the levels established during the initial performance test, with a brief explanation of the cause of the deviation, the time the deviation occurred, the time corrective action was initiated and completed, and the corrective action taken;
  - iii. Records and documentation of supporting calculations for compliance determinations made under §§ 63.865(a) through (d);
  - iv. Records of monitoring parameter ranges established for each affected source or process unit; [Reg.19.304 and 40 C.F.R. § 63.866(c)]
- k. The owner or operator of any affected source or process unit must submit the applicable notifications for Subpart A of this part, as specified in Table 1 of §40.867. [Reg.19.304 and 40 C.F.R. § 63.867(a)]
- l. The owner or operator must report quarterly if measured parameters meet any of the conditions specified in paragraphs (k)(1) or (k)(2) of § 63.864. This report must contain the information specified in § 63.10(c) of this part as well as the number and duration of occurrences when the source met or exceeded the conditions in § 63.864(k)(1), and the number and duration of occurrences when the source met or exceeded the conditions in § 63.864(k)(2). Reporting excess emissions below the violation thresholds of § 63.864(k) does not constitute a violation of the applicable standard.
- i. When no exceedances of parameters have occurred, the owner or operator must submit a semiannual report stating that no excess emissions occurred during the reporting period.
  - ii. The owner or operator of an affected source or process unit subject to the requirements of this subpart and subpart S of this part may combine excess emissions and/or summary reports for the mill. The permittee shall submit these reports in accordance with General Provision 7 of this permit. [Reg.19.304 and 40 C.F.R. § 63.867(c)]

SN-03

No. 1 Power Boiler

Source Description

The No. 1 Power Boiler, installed in 1967-68, is original to the Ashdown Mill. Due to the date of installation, the No. 1 Power Boiler is not subject to the New Source Performance Standards for Industrial Boilers (D, Da, or Db).

The No. 1 Power Boiler combusts bark, wood waste, tire-derived fuel (TDF), municipal yard waste, pelletized paper fuel (PPF), fuel oil, reprocessed fuel oil, and natural gas and has a heat input rating of 580 MMBtu/hr. Bark is delivered to a surge bin from the wood yard before being sent to a separate conveyor feeding the No. 1 Power Boiler. The bark handling system feeds wood waste, PPF, TDF, and municipal yard waste to the boiler. Natural gas supplements other fuels during high steam demand periods to maintain the 850-psig steam header.

The No. 1 Power Boiler is equipped with a traveling grate, a combustion air system, and a wet ESP for particulate removal. The permitted emission rate for PM/PM<sub>10</sub> is 40.6 lb/hr, which, at design heat input, is 0.07 lb PM/MMBtu. Carbon monoxide, particulates and NO<sub>x</sub> are tested every five years to verify compliance with permitted limits.

Particulate matter emissions from this boiler are controlled by the use of a wet ESP. The permittee tested this source for acetaldehyde and benzene emissions as required under Permit #287-AOP-R0. Because the emissions were below detectable levels during the testing, the permittee is not required to conduct any further testing for acetaldehyde and benzene from this source. Testing was conducted in February 2008 to establish parametric monitoring parameter in Specific Condition #42.

Specific Conditions

34. The permittee shall not exceed the emission rates set forth in the following table. Compliance with PM<sub>10</sub> limits shall be demonstrated through compliance with Specific Conditions #42 and #43. Compliance with the sulfur dioxide emission rates shall be demonstrated by compliance with Specific Conditions #40. Compliance with the volatile organic compounds emission rate shall be demonstrated through compliance with Specific Condition #44. Compliance with the carbon monoxide rates shall be demonstrated through compliance with Specific Condition #45. Compliance with the oxides of nitrogen emission rates shall be demonstrated through compliance with Specific Condition #46. [Reg.19.501 *et seq.* and 40 C.F.R. § 52, Subpart E]

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SN	Description	Pollutant	lb/hr	tpy
03	No. 1 Power Boiler (580 MMBtu/hr) Wet ESP	PM <sub>10</sub>	40.6	177.8
		SO <sub>2</sub>	1285.0	214.0
		VOC	43.0	188.4
		CO	164.0	718.3
		NO <sub>x</sub>	247.5	1084.1
		Lead	5.90E-02	0.26

35. The permittee shall not exceed the emission rates set forth in the following table. Compliance with PM limits shall be demonstrated through compliance with Specific Conditions #42 and #43. Compliance with the barium, acetaldehyde, and benzene emission rates has been demonstrated by previously performed emissions testing. Compliance with the HCl limit shall be demonstrated through compliance with Specific Condition #47. [Reg.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	No. 1 Power Boiler (580 MMBtu/hr) Wet ESP	PM	40.6	177.8
		Acetaldehyde	0.77	3.37
		Acrolein	0.05	0.24
		Antimony	0.03	8.51E-03
		Arsenic	9.28E-03	0.04
		Benzene	2.3	10.06
		Beryllium	2.02E-03	8.85E-03
		Cadmium	0.07	0.33
		Chromium	0.02	0.11
		Chromium VI	1.23E-03	4.02E-04
		Cobalt	0.03	9.75E-03
		Formaldehyde	0.9	3.96
		HCl	52.2	228.6
		Hexane	1.23	5.38
		Manganese	4.76	20.85
		Mercury	2.09E-03	6.80E-04
		Naphthalene	5.62E-03	1.83E-03
		Nickel	0.02	0.09
		Selenium	0.01	3.40E-03
		HAP	N/A	273.11

36. Visible emissions may not exceed the limits specified in the following table as measured by EPA Reference Method 9 when firing natural gas only.

SN	Limit	Regulatory Citation
03	5%	Reg.19.503 and 40 C.F.R. § 52, Subpart E

37. Visible emissions may not exceed the limits specified in the following table as measured by EPA Reference Method 9 when firing fuel other than natural gas. Compliance shall be demonstrated through compliance with Specific Condition #38.

SN	Limit	Regulatory Citation
03	40%	Reg.19.503 and 40 C.F.R. § 52, Subpart E

38. The permittee shall perform monthly observations of the opacity from this source. These observations shall be conducted by personnel familiar with the facility's visible emissions. The facility shall maintain personnel trained, but not necessarily certified, in EPA Reference Method 9. If visible emissions which appear to be in excess of the permitted opacity are detected, the facility shall immediately take action to identify the cause of the visible emissions, implement corrective action, and document that the visible emissions did not appear to be in excess of the permitted opacity following the corrective action. The facility shall maintain records which contain the following items in order to demonstrate compliance with this condition. These records shall be updated on a weekly basis, kept on site, and made available to Department personnel upon request.

- a. The date and time of the observation;
- b. Whether visible emissions which appeared to be above the permitted level were detected;
- c. If visible emissions which appeared to be above the permitted level were detected, the cause of the exceedance of the opacity limit, the corrective action taken, and if the visible emissions appeared to be below the permitted limit after the corrective action was taken.
- d. The name of the person conducting the observations. [Reg.19.705 and 40 C.F.R. § 52, Subpart E]

39. The sulfur content of the fuel oil used as fuel at this source shall not exceed 3.0% by weight and the total SO<sub>2</sub> emissions shall not exceed 214 tons in any consecutive twelve month period, as calculated monthly from total fuel usage and batch sulfur content using the following equation:

$$\text{SO}_2 \text{ tons} = [(\text{Fuel oil gallons/batch}) * (7.88 \text{ lb/gal}) * (\text{Weight \% S in batch}/100) * (2.0 \text{ lb SO}_2/\text{lb S} * (1-\text{WESP Efficiency})]/2000$$

This unit is equipped with a wet electrostatic precipitator (WESP) that has demonstrated 97.5% SO<sub>2</sub> control via testing.

[Reg.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]

- 39a. The permittee shall calculate and maintain records of the calculation of sulfur dioxide emissions for all fuel types except fuel oil based on the amount of sulfur emitted according to the following equation:

$$Y = 0.4005 * X - 0.2645$$

Where:

Y = pounds of sulfur emitted per ton of dry fuel feed to the boilers

X = pounds of sulfur input per ton of dry bark

[Reg.19.705 and 40 C.F.R. § 52, Subpart E]

40. The permittee shall either test each batch of fuel oil received for sulfur content or receive a manufacturer's certification of the sulfur content of each batch of fuel oil to demonstrate compliance with Specific Condition #39. The permittee shall update these records within 10 days of receipt of each batch of fuel oil. These records shall be kept on site and made available to Department personnel upon request. [Reg.19.705 and 40 C.F.R. § 52, Subpart E]
41. The permittee shall fire only bark, including bark and wood chips used to absorb oil spills, wood waste, municipal yard waste, recycled sanitary products composed of cellulose and polypropylene, pelletized paper fuel, fuel oil (distillate or residual), used oil generated on site, natural gas, reprocessed fuel oil, and tire derived fuel (TDF) as fuel in No. 1 Power Boiler (SN-03). Plantwide Condition #13 establishes limits on the 24-hour usage of TDF. [Reg.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]
42. The permittee shall maintain a minimum total power input of 15.6 kilowatts on a 3-hour average for the wet electrostatic precipitators installed on SN-03. [Reg.19.703, 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]
- 42a. The permittee shall continuously monitor the total power input to the wet electrostatic precipitators. These records shall be kept on site and made available to Department personnel upon request. A copy of these records shall be submitted in accordance with General Provision 7. [Reg.19.705 and 40 C.F.R. § 52, Subpart E]
43. The permittee shall conduct tests to verify compliance with the PM/PM<sub>10</sub> emission rates for this source a minimum of once every five years. The permittee shall use EPA Reference Method 5 to demonstrate compliance with the PM limits contained in Specific

- Condition #35. The permittee shall use EPA Reference Methods 201A or 5 to demonstrate compliance with the PM<sub>10</sub> limits contained in Specific Condition #34. By using Method 5 for PM<sub>10</sub>, the facility shall assume all collected particulate is PM<sub>10</sub>. Testing shall be performed pursuant to Plantwide Condition #3. [Reg.19.702 and 40 C.F.R. § 52, Subpart E]
44. The permittee shall conduct testing to verify compliance with the VOC emission rates from this source a minimum of once every five years. This testing shall be conducted using EPA Reference Method 25A. Testing shall be performed pursuant to Plantwide Condition #3. [Reg.19.702 and 40 C.F.R. § 52, Subpart E]
  45. The permittee shall conduct testing to verify compliance with the CO emission rates from this source a minimum of once every five years. This testing shall be conducted using EPA Reference Method 10B. Testing shall be performed pursuant to Plantwide Condition #3. [Reg.19.702 and 40 C.F.R. § 52, Subpart E]
  46. The permittee shall conduct testing to verify compliance with the NO<sub>x</sub> emission rates from this source a minimum of once every five years. This testing shall be conducted using EPA Reference Method 7E. Testing shall be performed pursuant to Plantwide Condition #3. [Reg.19.702 and 40 C.F.R. § 52, Subpart E]
  47. The permittee shall conduct testing to verify compliance with the HCl emission rates from this source once every five years. Failure of a test shall require the permittee to conduct annual testing until at least two consecutive passing tests are achieved. After which, the permittee may resume testing once every five years. This testing shall be conducted using EPA Reference Method 26 or 26A. Testing shall be performed pursuant to Plantwide Condition #3. [Reg.18.1002 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
  48. The permittee shall not use in excess of 2,700,000 gallons of fuel oil at this source per consecutive 12-month period. [Reg.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]
  49. The permittee shall maintain records of the amount of fuel oil combusted at this source. The permittee shall maintain a monthly and rolling twelve month total. 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 made available to Department personnel upon request. A copy of these records shall be submitted in accordance with General provision 7. [Reg.19.705 and 40 C.F.R. § 52, Subpart E]

SN-05

No. 2 Power Boiler

Source Description

The mill installed the No. 2 Power Boiler in 1975, with startup of the unit in February of 1976. Due to its design heat input rate (820 MMBtu/hr) and date of installation/construction, the boiler is subject to 40 C.F.R. § 60, Subpart D, *Standards of Performance for Fossil-Fuel-Fired Steam Generators for Which Construction is Commenced After August 17, 1971*. It is also subject to 40 C.F.R. 52, Subpart A (PSD Regulations), and 40 C.F.R. § 60, Subpart BB, *Standards of Performance for Kraft Pulp and Paper Mills*.

The No. 2 Power Boiler primarily fires pulverized bituminous coal. The boiler also burns small amounts of bark to help control NO<sub>x</sub> emissions. The boiler also burns PPF, TDF, municipal yard waste, fuel oil, used oil, natural gas, petroleum coke and reprocessed oil. The No. 2 Power Boiler is normally base-loaded to supply steam for the 850 psig header, but can be operated as a swing boiler as well. When the boiler is under normal conditions, the boiler fires no gas. The heat input rating for the unit, regardless of fuel mix, is 820 MMBtu/hr. Currently, the No. 2 Power Boiler is the primary combustion source used for incinerating HAPs in LVHC gas streams with a required minimum temperature and retention time to assure efficient destruction.

The No. 2 Power Boiler is equipped with a traveling grate, combustion air system including over fire air, multiclones for particulate removal, and two venturi scrubbers in parallel for removal of remaining particulates and SO<sub>2</sub>. The SO<sub>2</sub> loading to the boiler is significant since the boiler can burn non-condensable gases (Subpart BB) and pulverized coal.

The No. 2 Power Boiler is subject to the CAM Rule. The only applicable Pollutant Specific Emission Units (PSEU) are for SO<sub>2</sub> and particulate emissions, as this source has two scrubbers in parallel to control SO<sub>2</sub> and particulate emissions by absorption and chemical reaction with caustic solution and pulp mill extraction stage filtrate. Scrubber differential pressure and recirculation flow to both scrubbers are maintained within set ranges to ensure compliance. The scrubbing fluid is composed of sodium hydroxide, water and pulp mill extraction stage filtrate. The PM/PM<sub>10</sub> emission limit for the No. 2 Power Boiler is 82 lb/hr. Using the design heat input, the typical PM emission rate at full load would be 0.1 lb/MMBtu, and stack testing has shown very similar values.

Continuous Emissions Monitoring Systems (CEMS) are in place for NO<sub>x</sub>, SO<sub>2</sub>, and CO. The boiler operates under a surrogate for showing compliance with its particulate and opacity limits.

Specific Conditions

50. The permittee shall not exceed the emission rates set forth in the following table. Compliance with PM<sub>10</sub> and lead limits shall be demonstrated through compliance with Specific Condition #60. Compliance with the sulfur dioxide emission rates shall be

demonstrated by compliance with Specific Condition #54. Compliance with the volatile organic compounds emission rate shall be demonstrated through compliance with Specific Condition #59. Compliance with the carbon monoxide rates shall be demonstrated through compliance with Specific Condition #58. Compliance with the oxides of nitrogen emission rates shall be demonstrated through compliance with Specific Condition #54. [Reg.19.501 *et seq.* and 40 C.F.R. § 52, Subpart E]

SN	Description	Pollutant	lb/hr	tpy
05	No. 2 Power Boiler (820 MMBtu/hr) Multiclone and Venturi Scrubber	PM <sub>10</sub>	82.0	359.2
		SO <sub>2</sub>	984.0	4309.9
		VOC	92.0	403.0
		CO	266.0	1165.0
		NO <sub>x</sub>	574.0	2514.1
		Lead	0.03	0.13

51. The permittee shall not exceed the emission rates set forth in the following table. Compliance with the PM emission rates shall be demonstrated through compliance with Specific Condition #60. Compliance with the SO<sub>2</sub> emission rate shall be demonstrated through compliance with Specific Condition #54. Compliance with the NO<sub>x</sub> emission rate shall be demonstrated through compliance with Specific Condition #54. [Reg.19.901 *et seq.* and 40 C.F.R. § 52, Subpart E]

Pollutant	Emission Limit (lb/MMBtu)
PM	0.1 lb/MMBtu
SO <sub>2</sub>	1.2 lb/MMBtu
NO <sub>x</sub>	0.7 lb/MMBtu

52. The permittee shall not exceed the emission rates set forth in the following table. Compliance with PM limits shall be demonstrated through compliance with Specific Condition #60. Compliance with the HCl emission rates shall be demonstrated through compliance with Specific Condition #59. Compliance with the acetaldehyde and naphthalene emission rates has been demonstrated by previously performed emissions testing. All other emission limits are based on design heat input capacity of the boiler. [Reg.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
05	No. 2 Power Boiler (820 MMBtu/hr) Multiclone and Venturi Scrubber	PM	82	359.2
		Acetaldehyde	0.21	0.92
		Acrolein	0.08	0.34
		Antimony	0.03	0.15
		Arsenic	0.02	7.18E-02
		Benzene	3.25	14.22
		Beryllium	2.76E-03	1.21E-02



SN	Description	Pollutant	lb/hr	tpy
		Cadmium	2.76E-03	1.21E-02
		Chromium	0.01	4.56E-02
		Chromium VI	6.00E-03	2.63E-02
		Cobalt	0.04	0.17
		Formaldehyde	1.28	5.60
		HCl	5.75	25.18
		Hexane	1.74	7.61
		Manganese	0.04	0.17
		Mercury	3.32E-03	1.45E-02
		Naphthalene	0.50	2.19
		Nickel	0.55	2.43
		Selenium	0.05	0.23
		HAP	N/A	43.93

53. This source is considered an affected source under 40 C.F.R. § 60, Subpart A and 40 C.F.R. § 60, Subpart D, *Standards of Performance for Fossil-Fuel-Fired Steam Generators for Which Construction is Commenced After August 17, 1971*, due to a heat input rate of 250 MMBtu/hr and an installation date of 1975. A copy of Subpart D may be found in Appendix F. This source is subject, but not limited to, the following conditions: [Reg.19.304 and 40 C.F.R. § 60, Subpart D]
- a. The permittee shall not cause to be discharged into the atmosphere any gases which contain particulate matter in excess of 0.10 lb/MMBtu derived from fossil fuel or fossil fuel and wood residue. [Reg.19.304 and 40 C.F.R. § 60.42(a)(1)]
  - b. Visible emission shall not exceed 20% opacity as measured by EPA Reference Method 9, except for one six-minute period per hour of not more than 27% opacity. [Reg.19.304 and 40 C.F.R. § 60.42(a)(1)]
  - c. The permittee shall not cause to be discharged into the atmosphere any gases which contain sulfur dioxide in excess of 0.80 lb/MMBtu derived from liquid fossil fuel or liquid fossil fuel and wood residue. [Reg.19.304 and 40 C.F.R. § 60.43(a)(1)]
  - d. The permittee shall not cause to be discharged into the atmosphere any gases which contain sulfur dioxide in excess of 1.2 lb/MMBtu from any solid fossil fuel or solid fossil fuel and wood residue. [Reg.19.304 and 40 C.F.R. § 60.43(a)(1)]When fossil fuels are burned simultaneously in combination, the applicable SO<sub>2</sub> standard (in ng/J) shall be determined by prorating using the following formula. [Reg.19.304 and 40 C.F.R. § 60.43(b)]

$$PS_{SO_2} = \frac{(y * 340) + (z * 520)}{(y + z)}$$

where:

$PS_{SO_2}$  is the prorated standard for sulfur dioxide when burning different fuel simultaneously, in nanograms per joule heat input derived from all fossil fuels and wood residue fired,

Y is the percentage of total heat input derived from liquid fossil fuel, and

Z is the percentage of total heat input derived from solid fossil fuel

- e. The basis for compliance is the total heat input from all fossil fuels burned, including gaseous fuels. [Reg.19.304 and 40 C.F.R. § 60.43(c)]
- f. The permittee shall not cause to be discharged into the atmosphere any gases which contain nitrogen oxides, expressed as  $NO_2$ , in excess of:
  - i. 86 nanograms per joule heat input (0.20 lb per million Btu) derived from gaseous fossil fuel.
  - ii. 129 nanograms per joule heat input (0.30 lb per million Btu) derived from liquid fossil fuel, liquid fossil fuel and wood residue, or gaseous fossil fuel and wood residue.
  - iii. 300 nanograms per joule heat input (0.70 lb per million Btu) derived from solid fossil fuel or solid fossil fuel and wood residue (except lignite or a solid fossil fuel containing 25 percent, by weight, or more of coal refuse). [Reg.19.304 and 40 C.F.R. § 60.44(a)(1-3)]
- g. Except as provided under Specific Condition #53.h, when different fossil fuel are burned simultaneously in any combination, the applicable  $NO_x$  standard (in ng/J) is determined by prorating using the following formula. [Reg.19.304 and 40 C.F.R. § 60.44(b)]

$$PS_{NOX} = \frac{(x * 86) + (y * 130) + (z * 300)}{x + y + z}$$

where:

$PS_{NOX}$  = the prorated standard for nitrogen oxides when burning different fuels simultaneously, in nanograms per joule heat input derived from all fossil fuels fired or from all fossil fuels and wood residue fired;

x = the percentage of total heat input derived from gaseous fossil fuel;

y = the percentage of total heat input derived from liquid fossil fuel; and,

z = the percentage of total heat input derived from solid fossil fuel (except lignite).

- h. When a fossil fuel containing at least 25 percent, by weight, of coal refuse is burned in combination with gaseous, liquid, or other solid fossil fuel or wood residue, the standard for nitrogen oxides does not apply. [Reg.19.304 and 40 C.F.R. § 60.44(c)]

54. The permittee shall install, calibrate, maintain and operate continuous emissions monitoring systems for measuring SO<sub>2</sub> emissions, NO<sub>x</sub> emissions and either oxygen or carbon dioxide. The CEMS shall have readouts which demonstrate compliance with any of the applicable limits for the pollutant in question. The permittee shall comply with the ADEQ CEMS conditions found in Appendix B. [Reg.19.703, 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]
55. The permittee shall submit an excess emissions report to the Director semiannually for each six-month period in the calendar year. All semiannual reports must be postmarked by the 30th day following the end of the six-month period. Each excess emissions report and MSP report shall include the information required in § 60.7(c). Periods of excess emissions and monitoring system downtime that shall be reported are defined as follows:
  - a. Any three-hour period during which the average emissions (arithmetic average of three contiguous one-hour periods) of sulfur dioxide as measured by a CEM exceed the applicable standard in § 60.43 or
  - b. Any three-hour period during which the average emissions (arithmetic average of three contiguous one-hour periods) of nitrogen oxides as measured by a CEM exceed the applicable standard in § 60.44
56. This source is considered an affected source under 40 C.F.R. § 60, Subpart BB, *Standards of Performance for Kraft Pulp Mills*, because SN-05 combusts non-condensable gases produced at other sources subject to Subpart BB. A copy of Subpart BB may be found in Appendix C. This source is subject, but not limited to, the following conditions: [Reg.19.304 and 40 C.F.R. § 60, Subpart BB]
  - a. The non-condensable gases incinerated at SN-05 shall be subjected to a minimum temperature of 1200 °F for at least 0.5 seconds. Previous tests indicate the permittee meets the required retention times. [Reg.19.304, 40 C.F.R. § 60.283(a)(1)(iii) and Reg.19.804]
  - b. The permittee shall install, calibrate, maintain and operate a monitoring device which measures and records the combustion temperature at the point of incineration of effluent gases emitted from any digester system, brown stock washer system, black liquor oxidation system or condensate stripper system where the provisions of § 60.283(a)(1)(iii) apply. The monitoring system is to be certified to be accurate within ±1 percent of the temperature being measured. [Reg.19.304 and 40 C.F.R. § 60.284(b)(1)]
57. The permittee shall maintain records of the combustion temperature required in Specific Condition 56.b. These records shall contain a rolling hourly average of the combustion temperature. These records shall be maintained on site and made available to Department personnel upon request. [Reg.19.705 and 40 C.F.R. § 52, Subpart E]

58. The permittee shall install, calibrate, maintain and operate a continuous emissions monitoring system for measuring CO. This CEMS shall give a readout which demonstrates compliance with the applicable limits for CO. The permittee shall comply with the ADEQ CEMS conditions found in Appendix B. [Reg.19.703, 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]
59. The permittee shall perform stack testing to verify the VOC and HCl emission rates listed for SN-05 using EPA Reference Method 25A and 26A respectively. This testing shall be performed a minimum of once every five years. This testing shall be performed pursuant to Plantwide Condition #3. [Reg.19.702 and 40 C.F.R. § 52, Subpart E]
60. The permittee shall conduct tests to verify compliance with the PM/PM<sub>10</sub> emission rates for this source a minimum of once every five years. The permittee shall use EPA Reference Method 5 to demonstrate compliance with the PM limits contained in Specific Condition #52. The permittee shall use EPA Reference Methods 201A or 5 to demonstrate compliance with the PM<sub>10</sub> limits contained in Specific Condition #49. By using Method 5 for PM<sub>10</sub>, the facility shall assume all collected particulate is PM<sub>10</sub>. Testing shall be performed pursuant to Plantwide Condition #3. [Reg.19.702 and 40 C.F.R. § 52, Subpart E]
61. The permittee shall fire only the following items in the #2 Power Boiler (SN-05): non-condensable gases, bark and wood chips used to absorb oil spills, wood waste, municipal yard waste, natural gas, coal, used oil generated on site, recycled sanitary products based on cellulose and polypropylene, fuel oil (distillate or residual), reprocessed fuel oil, tire derived fuel (TDF), and petroleum coke. Plantwide Condition 14 establishes plant wide limits on the 24-hour usage of TDF. [Reg.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]
62. The permittee shall maintain records of fuels fired at this source, times fuel used and applicable SO<sub>2</sub> and NO<sub>x</sub> limits to demonstrate compliance with the fuel-specific NSPS and PSD limits. These records shall be kept on site and made available to Department personnel upon request. A copy of these records shall be submitted in accordance with General Provision 7. [Reg.19.705 and 40 C.F.R. § 52, Subpart E]
63. The carbon monoxide emission limits for this source are based on 30-day rolling averages. Days when the unit is not operating are not included in the 30-day rolling average. [Reg.19.501 *et seq.* and 40 C.F.R. § 52, Subpart E]
64. In lieu of the continuous opacity monitor required by 40 C.F.R. § 60.45 and 40 C.F.R. § 60.284(a)(1), the permittee shall comply with the following EPA approved monitoring plan. The Department determined and the permittee agreed that compliance with the following requirements shall also demonstrate compliance with the particulate matter and the lead emission rates.

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- a. maintain a minimum flow rate of scrubbing liquid flow rate of 1,500 gallons per minute;
  - b. maintain the pressure drop of the gas stream across the scrubber at or above 10 in. H<sub>2</sub>O, and
  - c. continuously monitor and record the scrubbing liquid flow rate and the pressure drop of the gas stream across the scrubber.
65. The permittee shall maintain records of the scrubbing liquid flow rate and the pressure drop of the gas stream across the scrubber for a period of at least two years following the date of the records. These records shall be kept on site and made available to Department personnel upon request. [Reg.19.705 and 40 C.F.R. § 52, Subpart E]
66. The permittee shall submit report of excess emissions to the Department on a semiannual basis. All reports shall be postmarked by the 30th day of the month following the end of each semiannual period. The permittee shall submit the excess monitoring reports in accordance with General Provision 7. Excess emissions are defined as follows: [Reg.19.705 and 40 C.F.R. § 52, Subpart E]
- a. Any period when the 1-hour average scrubbing liquid flow rate is less than 1,500 gallons per minute, and
  - b. Any period when the 1-hour average pressure drop of the gas stream across the scrubber is less than 10 inches H<sub>2</sub>O.
  - c. The permittee may test the parameters of sections "a" and "b" of this specific condition and operate one or both scrubbers to demonstrate that required emission rates can be met with modified parameters at lower heat inputs to the boiler. The permittee shall submit a protocol describing the tests and the time required to establish the new parameters before conducting the tests. Upon acceptance of the new operational parameters for the individual scrubbers, the permittee may submit a permit modification to substitute the new parameters for those specified in sections "a" and "b" of this specific condition. [Reg.19.304, Reg.19.703, 40 C.F.R. § 52, Subpart E, 40 C.F.R. § 60.13(i), Reg.18.1002 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311].

SN-06

No. 2 Recovery Boiler

Source Description

The No. 2 Recovery Boiler, last modified in 1989, has a heat input capacity of 1,160 MMBtu/hr. No. 2 Recovery Boiler combusts black liquor solids to recover inorganic chemicals. Fuel oil, on-site generated used fuel oil, reprocessed fuel oil and natural gas are also combusted in this boiler. An electrostatic precipitator controls emissions. Continuous emission monitoring systems are in place for opacity, total reduced sulfur, sulfur dioxide, carbon monoxide, and oxides of nitrogen.

This source is subject to the provisions of 40 C.F.R. § 60, Subpart BB - *Standards of Performance for Kraft Pulp Mills*, 40 C.F.R. § 63 and Subpart MM, *National Emission Standards for Hazardous Air Pollutants for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite, and Stand-Alone Semichemical Pulp Mills*. The No. 2 Recovery Boiler underwent a PSD review in Permit 287-AR-3.

Specific Conditions

67. The permittee shall not exceed the emission rates set forth in the following table. Compliance with PM<sub>10</sub> limits shall be demonstrated through compliance with Specific Condition #79. Compliance with the volatile organic compounds emission rate shall be demonstrated through compliance with Specific Condition #78. Compliance with the carbon monoxide rates shall be demonstrated through compliance with Specific Condition #72. [Reg.19.501 *et seq.* and 40 C.F.R. § 52, Subpart E]

SN	Description	Pollutant	lb/hr	tpy
06	No. 2 Recovery Boiler (1,160 MMBtu/hr) ESP	PM <sub>10</sub>	84.4	369.7
		VOC	46.7	204.5
		CO	980.0	4,292.4
		Lead	2.48E-03	0.01

68. The permittee shall not exceed the emission rates set forth in the following table. Compliance with the PM emission rates shall be demonstrated through compliance with Specific Condition #79. Compliance with the SO<sub>2</sub> emission rate shall be demonstrated through compliance with Specific Condition #73. Compliance with the NO<sub>x</sub> emission rate shall be demonstrated through compliance with Specific Condition #74. [Reg.19.901 *et seq.* and 40 C.F.R. § 52, Subpart E]

SN	Description	Pollutant	lb/hr	tpy
06	No. 2 Recovery Boiler (1,160 MMBtu/hr) ESP	PM	84.4	369.7
		SO <sub>2</sub>	286.0	1,252.7
		NO <sub>x</sub>	309.2	1,354.3

69. The permittee shall not exceed the emission rates set forth in the following table. Compliance with PM limits shall be demonstrated through compliance with Specific Condition #79. Compliance with the HCl emission rates shall be demonstrated through compliance with Specific Condition #76. Compliance with the sulfuric acid emission rates shall be demonstrated through compliance with Specific Condition #77. Compliance with the formaldehyde, methanol and styrene emission rates has been demonstrated by previously performed emissions testing. [Reg.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
06	No. 2 Recovery Boiler (1,160 MMBtu/hr) ESP	Acetaldehyde	0.05	0.20
		Antimony	1.08E-04	4.73E-04
		Arsenic	1.59E-04	6.95E-04
		Benzene	0.07	0.30
		Beryllium	1.05E-04	4.58E-04
		Cadmium	1.30E-03	5.68E-03
		Chromium	4.85E-03	0.02
		Chromium VI	1.73E-03	7.57E-03
		Cobalt	3.46E-04	1.51E-03
		Formaldehyde	0.72	3.15
		HCl	51.20	224.3
		Manganese	0.01	0.05
		Mercury	5.90E-04	2.58E-03
		Methanol	4.86	21.29
		Nickel	8.55E-03	0.04
		Selenium	5.78E-04	2.53E-03
		TRS	7.40	32.41
HAP	N/A	249.59		
Sulfuric Acid	3.03	13.25		

70. Visible emissions shall not exceed the limits specified in the following table as measured by EPA Reference Method 9. Compliance shall be demonstrated through compliance with Specific Condition 83.b.

SN	Limit	Regulatory Citation
06	20%	Reg.19.503 and 40 C.F.R. Part52, Subpart E

71. This source is considered an affected source under 40 C.F.R. § 60, Subpart BB, *Standards of Performance for Kraft Pulp Mills*, because SN-06 was installed in 1989. A copy of Subpart BB may be found in Appendix C. This source is subject, but not limited to, the following conditions: [Reg.19.304 and 40 C.F.R. § 60, Subpart BB]

- a. The permittee shall not cause a discharge into the atmosphere of any gases which contain particulate matter in excess of 0.10 g/dscm (0.044 gr/dscf), corrected to 8 percent oxygen. [Reg.19.304 and 40 C.F.R. § 60.282(a)(1)(i)]
- b. The permittee shall not cause a discharge into the atmosphere of any gases which exhibit 35% opacity or greater. (Note: Specific Condition 70 requires a 20% opacity) [Reg.19.304 and 40 C.F.R. § 60.282(a)(1)(ii)]
- c. The permittee shall not cause a discharge into the atmosphere of any gases which contain TRS in excess of 5 ppm by volume on a dry basis, corrected to 8 percent oxygen. [Reg.19.304 and 40 C.F.R. § 60.283(a)(4)]
- d. The permittee shall install, calibrate, maintain and operate a continuous monitoring system to monitor and record the concentration of TRS emissions on a dry basis and the percent oxygen by volume on a dry basis in the gases discharged into the atmosphere from SN-06. These systems shall be located downstream of the control device and the span of the continuous monitoring system shall be set as stated below. The permittee has demonstrated that the CEMS meet the span requirements and shall notify the Department before modifying either monitoring system. This CEMS shall comply with the Department's standards found in Appendix B. [Reg.19.304 and 40 C.F.R. § 60.284(a)(2)]
  - i. At a TRS concentration of 30 ppm for the TRS monitoring system; and
  - ii. At 25 percent oxygen for the continuous oxygen monitoring system.
- e. The permittee shall calculate and record, on a daily basis, the 12-hour average TRS concentrations for the two consecutive periods of each operating day. The permittee shall determine each 12-hour average as the arithmetic mean of the appropriate 12 continuous 1-hour average TRS concentrations provided by the CEMS. The permittee shall maintain these records on site and make them available to Department personnel upon request. [Reg.19.304 and 40 C.F.R. § 60.284(c)(2)]
- f. The permittee shall calculate and record, on a daily basis, the 12-hour average oxygen concentrations for the two consecutive periods of each operating day. These 12-hour averages shall correspond to the 12-hour TRS concentrations. The permittee shall determine each 12-hour average as the arithmetic mean of the appropriate 12 continuous 1-hour average oxygen concentrations provided by the CEMS. The permittee shall maintain these records on site and make them available to Department personnel upon request. [Reg.19.304 and 40 C.F.R. § 60.284(c)(2)]



- g. The permittee shall correct the 12-hour average TRS concentration to 8% oxygen using the following equation. [Reg.19.304 and 40 C.F.R. § 60.284(c)(3)]

$$C_{\text{corr}} = C_{\text{meas}} * [(21-X)/(21-Y)]$$

Where:

$C_{\text{corr}}$  = the concentration corrected for oxygen

$C_{\text{meas}}$  = the concentration TRS measure by the CEM

X = the volumetric oxygen concentration in percentage to be corrected to 8 percent

Y = the measured 12-hour average volumetric oxygen concentration

- h. For the purpose or reports required under § 60.7(c), the permittee shall report semiannually periods of excess emissions as follows: [Reg.19.304 and 40 C.F.R. § 60.284(d)(1)]
- i. All 12-hour averages or TRS concentrations above 5 ppm by volume; and
- ii. All 6-minute average opacities exceeding 35 percent.
- i. The permittee shall be required to report as excess emissions all 6-minute average opacities that exceed 20% ( the opacity limit required by Regulation 19). However, only those emissions which exceed 35% opacity shall be considered possible violations of Subpart BB.
- j. The Director shall not consider periods of excess emissions reported under § 60.284(d) to be indicative of a violation of § 60.11(d) provided that: [Reg.19.304 and 40 C.F.R. § 60.284(e)]
- i. The percent of the total number of possible continuous periods of excess emissions in a quarter (excluding periods of startup, shutdown or malfunction and periods when the facility is not operating) during which excess emissions do not exceed;
1. One percent for TRS emissions from recovery furnaces
  2. Six percent average opacities from recovery furnaces
- ii. The Director determines that the affected facility, including air pollution control equipment, is maintained and operated in a manner which is consistent with good air pollution control practice for minimizing emissions during periods of excess emissions.
72. The permittee shall install, calibrate, maintain and operate a continuous emissions monitoring system for measuring CO emissions from this source. This CEMS shall give a readout which demonstrates compliance with the applicable limits for CO. The permittee shall comply with the ADEQ CEMS conditions found in Appendix B.

[Reg.19.703, 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]

73. The permittee shall install, calibrate, maintain and operate a continuous emissions monitoring system for measuring SO<sub>2</sub> emissions from this source. This CEMS shall give a readout which demonstrates compliance with the applicable limits for SO<sub>2</sub>. The permittee shall comply with the ADEQ CEMS conditions found in Appendix B. [Reg.19.703, 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]
74. The permittee shall install, calibrate, maintain and operate a continuous emissions monitoring system for measuring NO<sub>x</sub> emissions from this source. This CEMS shall give a readout which demonstrates compliance with the applicable limits for NO<sub>x</sub>. The permittee shall comply with the ADEQ CEMS conditions found in Appendix B. [Reg.19.703, 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]
75. The permittee shall demonstrate compliance with the HCl emission rates by the use of the CEMS for SO<sub>2</sub> and the following equations. [Reg.18.1003 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

$$PPMHCl = \frac{(1.28 * PPM_{SO_2})}{(1 + (PPM_{SO_2} * 0.017))}$$

$$HCl_{lbs/hr} = HCl_{PPm} * 0.0947E - 7 * DSCFH$$

76. The permittee shall calculate the hourly HCl emissions using the one-hour average PPM SO<sub>2</sub> values obtained from the CEMS. The permittee shall keep the records on-site and make the records available to Department personnel upon request. The permittee shall submit an annual total and each month's individual data to the Department in accordance with General Provision 7. [Reg.18.1003 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
77. A sulfur dioxide emission rate in excess of 250 ppm based on a three-hour average, as read by the CEMS for this pollutant, shall be considered a violation of the sulfuric acid emission rate. [Reg.18.1003 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 stack testing to verify the VOC emission rates found in Specific Condition #67. This testing shall be conducted at least once every five years using EPA Reference Method 25A. This testing shall be conducted in accordance with Plantwide Condition #3. [Reg.19.702 and 40 C.F.R. § 52, Subpart E]
79. The permittee shall conduct stack testing to verify the PM and PM<sub>10</sub> emission rates found in Specific Condition #67. This testing shall be conducted at least once every five years

using EPA Reference Methods 5 for PM and EPA Reference Methods 201A or 5 for PM<sub>10</sub>. By using Methods 5 for PM<sub>10</sub>, the permittee shall assume all collected particulate is PM<sub>10</sub>. This testing shall be conducted in accordance with Plantwide Condition #3. [Reg.19.702 and 40 C.F.R. § 52, Subpart E]

80. The permittee shall maintain a minimum floor tube temperature of 400°F on a 3-hour average at SN-06. This limit applies only when the boiler is firing in excess of 1.5 million pounds per day of black liquor solids. The permittee shall install, calibrate, maintain and operate a continuous monitoring device to measure and record the floor tube temperature at SN-06. This monitor shall record the temperature at least once every 15 minutes and store each hour's average in a database. The permittee shall submit semiannual reports showing the 3-hour average temperatures that are below the minimum and the monthly average temperature. These records shall be submitted in accordance with General Provision 7. [Reg.19.703, Reg.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]
81. The permittee shall maintain records of the pounds per day of black liquor solids fired at SN-06 when not complying with the minimum floor tube temperature. The permittee shall update the records whenever the minimum temperature is below 400°F. These records shall be kept on site and made available to Department personnel upon request. [Reg.19.703, Reg.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]
82. The CO emission limits for this source are 30-day rolling averages and the NO<sub>x</sub> emission limits are 3-hour averages. Days when the unit is not operating shall not be included in the 30-day rolling average. [Reg.19.501 *et seq.* and 40 C.F.R. § 52, Subpart E]
83. This source (SN-06) is considered an affected source under 40 C.F.R. § 63, Subpart MM, *National Emissions Standards for Hazardous Pollutants for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite and Stand-Alone Semichemical Pulp Mills*. A copy of Subpart MM may be found in Appendix E. This source is subject, but not limited to, the following conditions: [Reg.19.304 and 40 C.F.R. § 63, Subpart MM]
  - a. The permittee must ensure that the concentration of PM in the exhaust gases discharged to the atmosphere is less than or equal to 0.10 gram per dry standard cubic meter (g/dscm) (0.044 grain per dry standard cubic foot (gr/dscf)) corrected to 8 percent oxygen. [Reg.19.304 and 40 C.F.R. § 63.862(a)(1)(i)(a)]
  - b. The permittee shall install, calibrate, maintain and operate a continuous monitoring system to monitor and record the opacity of the gases discharged to the atmosphere from SN-06. The span of this system shall be set at 70 percent opacity. The permittee shall comply with the ADEQ CEMS conditions found in Appendix B. [Reg.19.304 and 40 C.F.R. § 63.864]

- c. The 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. [Reg.19.304 and 40 C.F.R. § 63.864(d)(3)]
- d. The COMS data must be reduced to 6-minute averages calculated from 36 or more data points equally spaced over each 6-minute period. [Reg.19.304 and 40 C.F.R. § 63.864(d)(4)]
- e. The permittee shall implement corrective action, as specified in the startup, shutdown and malfunction plan, if the average of ten consecutive 6-minute averages results in a measurement greater than 20 percent opacity. [Reg.19.304 and 40 C.F.R. § 63.864(k)(1)(i)]
- f. The permittee is in violation of the standards of § 63.682 when opacity is greater than 20 percent for 6 percent or more of the operating time within any quarterly period. [Reg.19.304 and 40 C.F.R. § 63.864(k)(2)(ii)]
- g. The permittee shall conduct an initial performance test using the test methods and procedures listed in § 63.7 and § 63.865(a) or § 63.865(b), except as provided in § 63.865(c)(1). The permittee completed the initial performance test on September 7, 2004. [Reg.19.304 and 40 C.F.R. § 63.865]
- h. The permittee shall develop and implement a written plan as described in § 63.6(e)(3) that contains the specific procedures to be followed for operating the source and maintaining the source during periods of startup, shutdown and malfunction, and a program of corrective action for malfunctioning process and control systems used to comply with the standards. In addition to the information required in § 63.6(e), the plan must contain the requirements in paragraphs (a)(1) and (2) of § 63.866. [Reg.19.304 and 40 C.F.R. § 63.866(a)]
  - i. Procedures to determine and record the cause of an operating parameter exceedance and the time an exceedance began and ended; and
  - ii. Corrective actions to be taken in the event of an operating parameter exceedance, including procedures for recording the actions to correct the exceedance.
  - iii. The startup, shutdown and malfunction plan shall also include the schedule listed in paragraphs (a)(2)(i) and (ii) of § 63.866.
    - 1. A maintenance schedule for each control technique that is consistent with, but not limited to, the manufacturer's instructions for routine and long-term maintenance; and

2. An inspection schedule for each continuous monitoring system required under § 63.864 to ensure, at least once in each 24-hour period, that each monitoring system is properly functioning.
  - i. The permittee shall maintain records of any occurrence when corrective action is required under § 63.864(k)(1), and when a violation is noted under § 63.864(k)(2). [Reg.19.304 and 40 C.F.R. § 63.866(b)]
  - j. In addition to the general records required by § 63.10(b)(2), the permittee must maintain records of the information in paragraphs (c)(1) through (7) of § 63.866. [Reg.19.304 and 40 C.F.R. § 63.866(c)]
    - i. Record of the black liquor solids firing rates in units of Mg/d or ton/d for all recovery furnaces;
    - ii. Records of the parameter monitoring data required under § 63.864, including any period when the operating parameter levels were inconsistent with the levels established during the initial performance test, with a brief explanation of the cause of the deviation, the time of the deviation occurred, the time corrective action was initiated and completed, and the corrective action taken;
    - iii. Records and documentation of supporting calculations for compliance determinations made under §§ 63.865(a) through (d);
    - iv. Records of monitoring parameter ranges established for each affected source or process unit; and
    - v. Records certifying that an NDCE recovery furnace equipped with a dry ESP was used to comply with the gaseous organic HAP standard in § 63.862(c)(1).
  - k. The permittee must submit the applicable notifications from Subpart A of this part, as specified in Table 1 of § 63.867. [Reg.19.304 and 40 C.F.R. § 63.867(a)]
  - l. The permittee must report quarterly if measured parameters meet any of the conditions specified in paragraph (k)(1) or (2) of § 63.864. This report must contain the information specified in § 63.10(c) of this part as well as the number and duration of occurrences when the source met or exceeded the conditions in § 63.864(k)(1) and the number and duration of occurrences when the source met or exceeded the conditions in § 63.864(k)(2). Reporting excess emissions below the violation thresholds of § 63.864(k) does not constitute a violation of the applicable standard. [Reg.19.304 and 40 C.F.R. § 63.867(c)]

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- i. When no exceedances of parameters have occurred, the owner or operator must submit a semiannual report stating that no excess emissions occurred during the reporting period.
  - ii. The permittee may combine excess emissions and/or summary reports for the mill. The permittee must submit the reports in accordance with General Provision 7.
- 83a. This source (SN-06) is considered an affected source under 40 C.F.R. § 60, Subpart Db, *New Source Performance Standards for Industrial-Commercial-Institutional Steam Generating Unit.* A copy of Subpart Db may be found in Appendix A. This source is subject, but not limited to, the following conditions: [Reg.19.304 and 40 C.F.R. § 60, Subpart Db]
  - a. The permittee, during periods of fuel oil combustion, shall not cause to be discharged to the atmosphere any gases that contain PM in excess of 0.10 lb/MMBtu. For the purpose of demonstrating compliance with this NSPS requirement the permittee shall conduct initial testing in accordance with Plantwide Condition #3 upon the use of fuel oil. The permittee shall conduct the initial test using the test methods specified in § 60.46b (d). [Reg.19.304 and 40 C.F.R. § 60.43b (b)] *Note:* Notwithstanding this NSPS requirement, the permittee must conduct the periodic testing in Specific Condition #79.
  - b. The permittee shall not cause to be discharged into the atmosphere 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. *Note:* This opacity requirement only applies during periods of fuel oil combustion. During periods of black liquor solids combustion, the permittee shall continue to comply with opacity limit explicitly stated in Specific Condition #70. [Reg.19.304 and 40 C.F.R. § 60.43b (f)]
  - c. The permittee shall not exceed an annual capacity factor of 10 percent for fossil fuels combusted at this source. [Reg.19.304 and 40 C.F.R. § 60.44b (c)]
  - d. The permittee shall not combust any fuel oil with a sulfur concentration greater than 0.5 percent by weight. [Reg.19.304 and 40 C.F.R. § 60.42b (j)]
  - e. The permittee shall obtain and maintain at the affected facility fuel receipts from the fuel supplier that certify that the oil meets the definition of distillate oil and gaseous fuel meets the definition of natural gas as defined in § 60.41b and the applicable sulfur limit. The distillate oil need not meet the fuel nitrogen content specification in the definition of distillate oil. Reports shall be submitted to the Administrator certifying that only very low sulfur oil meeting this definition, natural gas, wood, and/or other fuels that are known to contain insignificant amounts of sulfur were combusted in the affected facility during the reporting

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period. *Note:* This condition does not apply to natural gas or black liquor solids fuels. [Reg.19.304 and 40 C.F.R. § 60.49b (r)]

SN-08

No. 2 Smelt Dissolving Tank

Source Description

The No. 2 Smelt Dissolving Tank, last modified in 1989, processes the molten sodium smelt from the No. 2 Recovery Boiler. A scrubber controls emissions of particulate matter and total reduced sulfur. Weak wash from the lime mud pressure filters and precoat washers is used as a scrubbing media at this source. The pressure drop and the scrubbing medium flow rate are continuously monitored at this source.

This source is subject to the provisions of 40 C.F.R. § 60, Subpart BB - *Standards of Performance for Kraft Pulp Mills* due to its date of installation. The source is subject to 40 C.F.R. § 63, Subpart MM - *National Emission Standards for Hazardous Air Pollutants for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite, and Stand-Alone Semichemical Pulp Mills*.

The permittee tested source SN-08 for formaldehyde as required under Permit #287-AOP-R0. The formaldehyde emissions were below detectable levels. Therefore, the permittee is not required to perform further testing for formaldehyde at source SN-08 at this time.

Specific Conditions

84. 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 Conditions #93 and #94. [Reg.19.501 *et seq.* and 40 C.F.R. § 52, Subpart E]

SN	Description	Pollutant	lb/hr	tpy
08	No. 2 Smelt Dissolving Tank Scrubber	PM <sub>10</sub>	18.0	78.8
		VOC	7.13	31.3

85. 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 #95.c. [Reg.19.901 *et seq.* and 40 C.F.R. § 52, Subpart E]

SN	Description	Pollutant	lb/hr	tpy
08	No. 2 Smelt Dissolving Tank Scrubber	PM	18.0	78.8
		SO <sub>2</sub>	10.6	46.4

86. 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 #89.c. [Reg.19.804, and 40 C.F.R. § 52, Subpart E]



Pollutant	12-Hour Emission Limit (g H <sub>2</sub> S/kg black liquor solids)
TRS	0.0168

87. The permittee shall not exceed the emission rates set forth in the following table. Compliance with the ammonia emission limits shall be demonstrated through compliance with Specific Condition #92. Compliance with the methanol emission rates shall be demonstrated through compliance with Specific Condition #94. Compliance with the formaldehyde emission rates was demonstrated by stack testing performed in December 1999. [Reg.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
08	No. 2 Smelt Dissolving Tank Scrubber	Acetaldehyde	0.17	0.76
		Ammonia	44.28	193.90
		Beryllium	2.70E-05	1.18E-04
		Formaldehyde	0.38	1.66
		Methanol	2.48	10.88
		TRS	2.10	9.20
		HAP	N/A	13.30

88. Visible emissions may not exceed the limits set forth in the following table as measured by EPA Reference Method 9.

SN	Limit	Regulatory Citation
08	20%	Reg.19.503 and 40 C.F.R. § 52, Subpart E

89. This source is subject the provisions of 40 C.F.R. § 60, Subpart A-General Provisions and is considered an affected source under 40 C.F.R. § 60, Subpart BB, *Standards of Performance for Kraft Pulp Mills* due to an installation date of 1989. A copy of Subpart BB may be found in Appendix C of this permit. This source is subject, but not limited to, the following conditions. [Reg.19.304 and 40 C.F.R. § 60, Subpart BB]
- a. The permittee may not cause a discharge into the atmosphere from any smelt dissolving tank any gases which contain particulate matter in excess of 0.1 g/kg black liquor solids (dry weight) [0.2 lb/ton black liquor solids (dry weight)]. [Reg.19.304 and 40 C.F.R. § 60.282(a)(2)]
  - b. TRS emissions from this source shall not exceed 0.0168 g/kg measured as grams H<sub>2</sub>S/kg black liquor solids on a 12-hour average (0.033 lb/ton black liquor solids as H<sub>2</sub>S). [Reg.19.304 and 40 C.F.R. § 60.283(a)(4)]

- c. The permittee shall install, calibrate, maintain and operate a monitoring device at this source for the continuous measurement of the pressure loss of the gas stream by the control equipment. The manufacturer must certify the monitoring device to be accurate within a gage pressure of  $\pm 500$  Pascal's (ca.  $\pm 2$  inches water gage pressure). This requirement is superseded by the more stringent requirement of scrubber flow monitoring in Specific Condition #95.b [Reg.19.304 and 40 C.F.R. § 60.284(b)(2)(i), Reg.19.703, 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]
  - d. The permittee shall install, calibrate, maintain and operate a monitoring device at this source for the continuous measurement of the scrubbing liquid supply pressure to the control equipment. The manufacturer must certify the monitoring device to be accurate within  $\pm 15\%$  of the design scrubbing liquid supply pressure. The pressure sensor or tap is to be located close to the scrubbing liquid discharge point. The Administrator and the Director may be consulted for approval of alternate locations. [Reg.19.304 and 40 C.F.R. § 60.284(b)(2)(ii), Reg.19.703, 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]
  - e. The permittee shall record, at least once per shift, the measurements obtained from the continuous monitoring devices installed under § 60.284(b)(2). [Reg.19.304 and 40 C.F.R. § 60.284(b)(4)]
90. The permittee shall maintain records for the monitoring required in Specific Condition 89. These records shall be updated no later than the fifteenth day of the month following the month which the records represent. These records shall be kept on site and made available to Department personnel upon request. [Reg.19.705 and 40 C.F.R. § 52, Subpart E]
91. The permittee shall conduct testing a minimum of once every five years to verify compliance with the TRS emission rates for this source. This testing shall be performed in accordance with Plantwide Condition #3. [Reg.18.1002 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
92. The permittee shall conduct testing a minimum of once every five years to verify compliance with the ammonia emission rates for this source. This testing shall be performed using EPA Reference Method 206. This testing shall be performed in accordance with Plantwide Condition #3. [Reg.18.1002 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
93. The permittee shall conduct testing a minimum of once every five years to verify the PM emission rates for this source. This testing shall be performed using EPA Reference Method 5. The permittee shall perform PM<sub>10</sub> testing using either EPA Reference Method 201A or 5. By using Method 5 for PM<sub>10</sub>, the permittee shall assume all collected

particulate is PM<sub>10</sub>. This testing shall be performed in accordance with Plantwide Condition #3. [Reg.19.702 and 40 C.F.R. § 52, Subpart E]

94. The permittee shall conduct testing a minimum of once every five years to verify compliance with the VOC emission rates for this source. This testing shall be performed using EPA Reference Method 25A. This testing shall be performed in accordance with Plantwide Condition #3. The permittee shall also monitor the scrubber flow rate during the testing in order to demonstrate that the VOC emissions will be below the permitted levels when the flow rate is at or near the minimum required by Specific Condition #95.c. [Reg.19.702 and 40 C.F.R. § 52, Subpart E]
95. The No. 2 Smelt Tank Vent is considered an affected source under 40 C.F.R. § 63, Subpart MM, *National Emission Standards for Hazardous Air Pollutants for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite and Stand-Alone Semichemical Pulp Mills*. A copy of Subpart MM may be found in Appendix E of this permit. This source is subject, but not limited to, the following requirements. [Reg.19.304 and 40 C.F.R. § 63, Subpart MM]
- a. The maximum concentration of PM in the exhaust gases discharged to the atmosphere is less than or equal to 0.10 kilogram per megagram (kg/Mg)(0.20 lb per ton (lb/ton)) of black liquor solids fired. [Reg.19.304 and 40 C.F.R. § 63.862(a)(i)(B)]
  - b. The permittee must install, calibrate, maintain and operate a Continuous Parameter Monitoring System (CPMS) to determine and record the pressure drop across the scrubber and the scrubbing liquid flow rate at least once every successive 15-minute period using the procedures in § 68.3(c), as well as the procedures in (e)(10)(i) and (ii) of § 63.864. [Reg.19.304 and 40 C.F.R. § 63.864(e)]
    - i. The monitoring device used for the continuous measurement of the pressure drop of the gas stream across the scrubber must be certified by the manufacturer to be accurate within a gage pressure of ±500 Pascals (±2 inches of water gage pressure); and
    - ii. The monitoring device used for continuous measurement of the scrubbing liquid flow rate must be certified by the manufacturer to be accurate within ±5 percent of the design scrubbing liquid flow rate.
  - c. During the initial performance test required in § 63.865, the permittee established the operating ranges for the monitoring parameters in § 63.864(e)(10). The permittee must maintain the scrubber parameters listed in the following table. Compliance shall be demonstrated through compliance with Specific Condition #95.j. [Reg.19.304 and 40 C.F.R. § 63.864(j)]

SN-08 No. 2 Smelt Dissolving Tank Scrubber Parameters	Scrubber Flow	Minimum 45 gpm
	Scrubber Pressure Drop	Minimum 9 in. H <sub>2</sub> O

- d. The permittee may establish expanded or replacement operating ranges for the monitoring parameter values listed in § 63.864(e)(10) and established in § 63.864(j)(1) or (2) during subsequent performance tests using the test methods in § 63.865. [Reg.19.304 and 40 C.F.R. § 63.864(j)(3)]
- e. The permittee must continuously monitor each parameter and determine the arithmetic average value of each parameter during each performance test. The permittee may conduct multiple performance tests to establish a range of parameter values. [Reg.19.304 and 40 C.F.R. § 63.864(j)(4)]
- f. The permittee must implement corrective action as specified in the startup, shutdown and malfunction plan prepared under § 63.866(a) if any 3-hour average parameter is outside the range of values established in Specific Condition #95.c. [Reg.19.304 and 40 C.F.R. § 63.864(k)]
- g. The permittee is in violation of the standards of § 63.862 when six or more 3-hour average parameter values within any 6-month reporting period are outside the range of values established in § 63.864(j). [Reg.19.304 and 40 C.F.R. § 63.864(k)(ii)]
- h. The permittee must develop and implement a written plan as described in § 63.6(e)(3) that contains specific procedures to be followed for operating the source and maintaining the source during periods of startup, shutdown and malfunction and a program of corrective action for malfunctioning process and control systems used to comply with the standards. In addition to the information required in § 63.6(e), the permittee must include the requirements in § 63.866(a)(1) and (2). [Reg.19.304 and 40 C.F.R. § 63.866(a)]
  - i. Procedures to determine and record the cause of an operating parameter exceedance and the time an exceedance began and ended; and
  - ii. Corrective actions to be taken in the event of an operating parameter exceedance including procedures for recording the actions taken to correct the exceedance.
  - iii. The startup, shutdown and malfunction plan must also include the schedules listed in § 63.866(a)(2)(i) and (ii):
    - 1. A maintenance schedule for each control technique that is consistent with, but not limited to, the manufacturer's instructions and recommendations for routine and long-term maintenance; and

2. An inspection schedule for each continuous monitoring system required under § 63.864 to ensure, at least once in each 24-hour period, that each continuous monitoring system is properly functioning.
- i. The permittee must maintain records of any occurrence when corrective action is required under § 63.8634(k)(1), and when a violation is noted under § 63.864(k)(2). The permittee must submit records of corrective action to the Department in accordance with General Condition 7. [Reg.19.304 and 40 C.F.R. § 63.866(c)]
  - j. In addition to the general records required by § 63.10(b)(2), the permittee must maintain records of the information in § 63.866(c)(1) through (7). [Reg.19.304 and 40 C.F.R. § 63.866(c)]
    - i. Records of parameter monitoring data required under § 63.864, including any period when the operating parameter levels were inconsistent with the levels established during the initial performance test, with a brief explanation of the cause of the deviation, the time the deviation occurred, the time corrective action was initiated and completed, and the corrective action taken;
    - ii. Records and documentation of supporting calculations for compliance determinations made under § 63.865(a) through (d); and
    - iii. Records of the monitoring parameter ranges established for each affected source or process unit.
  - k. The permittee must submit the applicable notifications from Subpart A of this part as specified in Table 1 of 40 § 63.867. [Reg.19.304 and 40 C.F.R. § 63.867(a)]
  - l. The permittee must report quarterly if measured parameters meet any of the conditions specified in § 63.864(k)(1) or (2). This report must contain the information specified in § 63.10(c) of this part as well as the number and duration of occurrences when the source met or exceeded the conditions in § 63.864(k)(1), and the number and duration of occurrences when the source met or exceeded the conditions in § 63.864(k)(2). Reporting excess emissions below the violation thresholds of § 63.864(k) does not constitute a violation of the applicable standard. [Reg.19.304 and 40 C.F.R. § 63.867(c)]
    - i. When no exceedances of parameters have occurred, the permittee must submit a semiannual report stating that no excess emissions occurred during the reporting period.

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- ii. The permittee may combine the Subpart MM and Subpart S excess emissions and/or summary reports for the mill. This report shall be submitted in accordance with General Condition 7.

SN-09

No. 2 Lime Kiln

Source Description

The primary fuels for the No. 2 Lime Kiln, last modified in 1979, are natural gas and fuel oil. The No. 2 Lime Kiln may also incinerate non-condensable gases. CEMS are in place at this source to monitor the carbon monoxide and the TRS emissions. Stack test data showed that nearly all of the SO<sub>2</sub> from the combustion of fuel oil reacts with CaO in the kiln. A venturi scrubber is an additional control of SO<sub>2</sub> emissions from this source. Based on stack tests, the combination of these two processes for removing SO<sub>2</sub> from fuel oil combustion at the maximum rate has a combined efficiency of over 99%.

During shutdown periods, the two lime silos for SN-02 and SN-09 will be connected to the slaker scrubbers instead of the lime kilns while the kilns are being inspected and repaired.

Due to its date of installation, this source is subject to 40 C.F.R. § 60, Subpart BB - *Standards of Performance for Kraft Pulp Mills*. The source is also subject to 40 C.F.R. § 63, Subpart MM - *National Emission Standards for Hazardous Air Pollutants for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite, and Stand-Alone Semichemical Pulp Mills*. Since the source is subject to a MACT, the CAM rule does not apply.

Specific Conditions

96. The permittee shall not exceed the emission rates set forth in the following table. Compliance with the PM<sub>10</sub> emission rates shall be demonstrated through compliance with Specific Condition #112.c. Compliance with the SO<sub>2</sub> emission rates shall be demonstrated through compliance with Specific Condition #104. Compliance with the VOC emission rates shall be demonstrated through compliance with Specific Condition #109. Compliance with the CO emission rates shall be demonstrated through compliance with Specific Condition #102 and compliance with the NO<sub>x</sub> emission rates shall be demonstrated through compliance with Specific Condition #110. [Reg.19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN	Description	Pollutant	lb/hr	tpy
09	No. 2 Lime Kiln (790 MMBtu/hr) Venturi Scrubber	PM <sub>10</sub>	51.0	223.4
		SO <sub>2</sub>	13.4	58.4
		VOC	17.2	75.1
		CO	55.0	240.9
		NO <sub>x</sub>	68.6	300.4
		Lead	7.04E-02	0.31

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97. The permittee shall not exceed the emission rates set forth in the following table. Compliance shall be demonstrated through compliance with Specific Condition #101.d. [Reg.19.804 and 40 C.F.R. § 52, Subpart E]

Pollutant	12-Hour Emission Limit (measured as H <sub>2</sub> S)
TRS	8 ppmvd @10% O <sub>2</sub>

98. The permittee shall not exceed the emission rates set forth in the following table. Compliance shall be demonstrated through compliance with Specific Condition #112.c. [Reg.19.901 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN	Description	Pollutant	lb/hr	tpy
09	No. 2 Lime Kiln (790 MMBtu/hr) Venturi Scrubber	PM	51.0	223.4

99. The permittee shall not exceed the emission rates set forth in the following table. Compliance with these emission rates has been demonstrated through stack testing. [Reg.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
09	No. 2 Lime Kiln (790 MMBtu/hr) Venturi Scrubber	Acetaldehyde	0.11	0.49
		Antimony	8.14E-05	3.57E-04
		Arsenic	1.34E-05	5.88E-05
		Benzene	0.23	1.01
		Beryllium	2.62E-05	1.15E-04
		Cadmium	3.08E-04	1.35E-03
		Chromium	5.94E-03	2.60E-02
		Cobalt	2.20E-04	9.63E-04
		Formaldehyde	0.19	0.82
		Manganese	3.74E-02	0.16
		Mercury	1.36E-05	5.97E-05
		Methanol	0.68	2.99
		Nickel	6.82E-03	2.99E-02
		Selenium	5.72E-05	2.51E-04
HAP	N/A	6.33		

100. Visible emissions shall not exceed the limits specified in the following table as measured by Reference Method 9. Compliance shall be demonstrated through compliance with Specific Condition #112.c.

SN	Limit	Regulatory Citation
09	20%	§19.503 and 40 C.F.R. Part52, Subpart E



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101. This source is subject to the provisions of 40 C.F.R. § 60, Subpart A-General Provisions and is considered an affected source under 40 C.F.R. § 60, Subpart BB, *Standards of Performance for Kraft Pulp Mills* due to an installation date of 1989. A copy of Subpart BB may be found in Appendix C of this permit. This source is subject, but not limited to, the following conditions. [Reg.19.304 and 40 C.F.R. § 60, Subpart BB]
- a. Particulate matter emissions shall not exceed 0.064 gr/dscf corrected to 10 percent oxygen when burning gaseous fossil fuels. [Reg.19.304 and 40 C.F.R. § 60.282(a)(3)(i)]
  - b. Particulate matter emissions shall not exceed 0.13 gr/dscf corrected to 10 percent oxygen when burning liquid fossil fuel. [Reg.19.304 and 40 C.F.R. § 60.282(a)(3)(ii)]
  - c. Total reduced sulfur emissions shall not exceed 8 ppm by volume on a dry basis, corrected to 10 percent oxygen. [Reg.19.304 and 40 C.F.R. § 60.283(a)(5) and Reg.19.804]
  - d. The permittee shall install, calibrate, maintain and operate a continuous monitoring system to monitor and record the concentration of the TRS emissions on a dry basis and the percent oxygen by volume on a dry basis in the gases discharged to the atmosphere from this source. These systems shall be located downstream of the control device and the spans of these continuous monitoring systems shall be set as follows: [Reg.19.304 and 40 C.F.R. § 60.284(a)(2)]
    - i. At a TRS concentration of 30 ppm for the TRS continuous monitoring system.
    - ii. At 25 percent oxygen for the continuous oxygen monitoring system.
  - e. The permittee shall install, calibrate, maintain and operate a continuous monitoring system for the continuous measurement of the pressure loss of the gas stream by the control equipment. The manufacturer must certify the device to be accurate within a gage pressure of  $\pm 500$  Pascals (ca.  $\pm 2$  inches water gage pressure). This requirement is superseded by the more stringent requirement of scrubber flow monitoring in Specific Condition #112. [Reg.19.304 and 40 C.F.R. § 60.284(b)(2)(i)]
  - f. The permittee shall install, calibrate, maintain and operate a continuous monitoring system for the continuous measurement of the scrubbing liquid supply pressure to the control equipment. The monitoring device is to be certified to be accurate to within  $\pm 15$  percent of the design liquid supply pressure. The pressure sensor or trap is to be located close to the scrubber liquid discharge point. The permittee may consult the Administrator and the Director for approval of alternate

locations. This requirement is superseded by the more stringent requirement in Specific Condition #112.b. [Reg.19.304 and 40 C.F.R. § 60.284(b)(2)(ii)]

- g. The permittee shall calculate and record, on a daily basis, the 12-hour average TRS concentrations for the two consecutive periods of the operating day. The permittee shall determine each 12-hour average as the arithmetic mean of the appropriate 12 contiguous 1-hour average TRS concentrations provided by the continuous monitoring system required under § 60.284(a)(2). [Reg.19.304 and 40 C.F.R. § 60.284(c)(1)]
- h. The permittee shall calculate and record, on a daily basis, the 12-hour average oxygen concentrations for the two consecutive periods of the operating day. The 12-hour averages shall correspond to the 12-hour average TRS concentrations under § 60.284(c)(1) and shall be determined as the arithmetic mean of the appropriate 12 contiguous 1-hour average oxygen concentrations provided by the continuous monitoring system required under § 60.284(a)(2). [Reg.19.304 and 40 C.F.R. § 60.284(c)(2)]
- i. The permittee shall correct all 12-hour average TRS concentrations to 10 percent oxygen by volume using the following equation: [Reg.19.304 and 40 C.F.R. § 60.284(c)(3)]

$$C_{\text{corr}} = C_{\text{meas}} \times [(21 - X)/(21 - Y)]$$

Where:

$C_{\text{corr}}$  = the concentration corrected for oxygen

$C_{\text{meas}}$  = the concentration uncorrected for oxygen

X = the volumetric oxygen concentration in percentage to be corrected to 10 percent

Y = the measured 12-hour average volumetric oxygen concentration

- j. The permittee shall record, once per eight-hour shift, the measurements obtained from the CEMS installed for liquid supply pressure and gas pressure drop. These records shall be maintained on site and made available to Department personnel upon request. [Reg.19.304 and 40 C.F.R. § 60.284(c)(4)]
- k. The permittee shall report semiannually periods of excess emissions from this source. Periods of excess emissions are 12-hour average TRS concentrations above 8 ppm by volume. [Reg.19.304 and 40 C.F.R. § 60.284(d)(2)]
- l. The Administrator or Director shall not consider periods of excess emissions reported under §60.284(d)(2) to be indicative of a violation of § 60.11(d) provided that the Administrator determines that the permittee operated and maintained the unit, including air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions during periods of excess emissions. [Reg.19.304 and 40 C.F.R. § 60.284(e)]

102. The permittee shall install, calibrate, maintain and operate a CEMS for measuring CO emissions which gives a readout in pounds per hour. This CEMS shall comply with the requirements of the ADEQ CEMS condition in Appendix B. [Reg.19.703, 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]
103. The lime kiln may use only pipeline quality natural gas, reprocessed fuel oil, on-site generated used fuel oil and fuel oil (distillate or residual) as fuels. The lime kiln may also incinerate non-condensable gases as allowed by § 60, Subpart BB. [Reg.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]
104. The monthly average sulfur content of the fuel oil shall not exceed 3.0% by weight. [Reg.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]
105. The permittee shall either test each shipment of fuel oil or obtain manufacturer's certification of the sulfur content in order to demonstrate compliance with Specific Condition 104. These records shall be kept on site and made available to Department personnel upon request. A copy of these records shall be submitted in accordance with General Condition 7. [Reg.19.705 and 40 C.F.R. § 52, Subpart E]
106. The permittee shall not use in excess of 5,400,000 gallons of fuel oil per consecutive 12-month period this source (SN-09). [Reg.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]
107. The permittee shall maintain records of the amount of fuel oil fired at SN-09 in order to demonstrate compliance with Specific Condition 106. These records shall be maintained on a monthly basis and updated by the 15th day of the month following the month to which they pertain. The records shall be maintained on site and made available to Department personnel upon request. Each month's individual data as well as a 12-month total shall be submitted to the Department in accordance with General Condition 7. [Reg.19.705 and 40 C.F.R. § 52, Subpart E]
108. The permittee shall maintain a minimum of 65% solids, based on a 30-day rolling average, in the lime mud fed to SN-09 to demonstrate compliance with the VOC emission rates. [Reg.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]
109. The permittee shall measure and record the solids content of the lime mud fed to SN-09 at least once per day while the kiln is in operation in order to demonstrate compliance with Specific Condition 108. These records shall be kept on site and made available to Department personnel upon request. [Reg.19.703, 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]

110. The permittee shall verify compliance with the NO<sub>x</sub> emission rates through stack testing using EPA Reference Method 7E. This testing shall be conducted at least once every five years. This testing shall be conducted according to the requirements in Plantwide Condition #3. [Reg.19.702 and 40 C.F.R. § 52, Subpart E]
111. The CO emission limits for this source are based on a 30-day rolling average. Days when the unit is not operating are not included in the 30-day rolling average. [Reg.19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]
112. This source is considered an affected source under 40 C.F.R. § 63, Subpart MM, *National Emissions Standards for Hazardous Air Pollutants for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfitite and Stand-alone Semichemical Pulp Mills*. A copy of Subpart MM can be found in Appendix E. This source is subject, but not limited to, the following conditions. [Reg.19.304 and 40 C.F.R. § 63, Subpart MM]
- a. The permittee may comply with the PM standards in § 63.862 for the exhaust gases discharged to the atmosphere from SN-09 by ensuring the concentration of PM is less than or equal to 0.15 g/dscm (0.064 gr/dscf) corrected to 10 percent oxygen. [Reg.19.304 and 40 C.F.R. § 63.862(a)(i)(c)]
  - b. The permittee must install, calibrate, maintain and operate a Continuous Parameter Monitoring System (CPMS) to determine and record the pressure drop across the scrubber and the scrubbing liquid flow rate at least once every successive 15-minute period using the procedures in 63.8(c), as well as the procedures in paragraphs § 63.864(e)(10)(i) and (ii). [Reg.19.304 and 40 C.F.R. § 63.864(e)]
    - i. The monitoring device used for the continuous measurement of the pressure drop of the gas stream across the scrubber must be certified by the manufacturer to be accurate within a gage pressure of ±500 Pascals (±2 inches of water gage pressure); and
    - ii. The monitoring device used for continuous measurement of the scrubbing liquid flow rate must be certified by the manufacturer to be accurate within ±5 percent of the design scrubbing liquid flowrate.
  - c. During the initial performance test, completed September 2004, required under § 63.865, the permittee established the operating ranges for the monitoring parameters in paragraphs § 63.864(e)(10). The permittee established the following parameters for the scrubber at SN-09. [Reg.19.304 and 40 C.F.R. § 63.864(j)]

SN-09 No. 2 Lime Kiln	Scrubber Liquor Flow	Minimum 1500 gal/min
	Scrubber Pressure Drop ( $\Delta P$ )	Minimum 10 in. H <sub>2</sub> O

- d. The permittee may establish expanded or replacement operating ranges for the monitoring parameter values listed in § 63.864(e)(10) and established in paragraph 40 C.F.R. § 63.864(j)(1) or (2) during subsequent performance tests using the test methods in § 63.865. [Reg.19.304 and 40 C.F.R. § 63.864(j)(3)]
- e. The permittee must continuously monitor each parameter and determine the arithmetic average value of each parameter during performance test. The permittee may conduct multiple performance tests to establish a range of parameter values. [Reg.19.304 and 40 C.F.R. § 63.864(j)(4)]
- f. The permittee must implement corrective action, as specified in the startup, shutdown and malfunction plan prepared under § 63.866(a) if any 3-hour average parameter value is outside the range of values established in section (c) of this Specific Condition. [Reg.19.304 and 40 C.F.R. § 63.864(k)]
- g. The permittee is in violation of the standards of § 63.862 when six or more 3-hour average parameter values within any 6-month reporting period are outside the range of values established in § 63.864(j).
- h. The permittee must conduct an initial performance test using the test methods and procedures listed in § 63.7 and § 63.865(a) or (b), except as provided in § 63.865(c)(1), using the following methods: [Reg.19.304 and 40 C.F.R. § 63.865]
  - i. The permittee must develop and implement a written plan as described in § 63.6(e)(3) that contains specific procedures to be followed for operating the source and maintaining the source during periods of startup, shutdown and malfunction, and a program of corrective action for malfunctioning processes and control systems used to comply with the standards. In addition to the information required in § 63.6(e), the plan must include the requirements in § 63.866(a)(1) and (2). [Reg.19.304 and 40 C.F.R. § 63.866(a)]
    - 1. Procedures to determine and record the cause of an operating parameter exceedance and the time the exceedance began and ended; and
    - 2. Corrective actions to be taken in the event of an operating parameter exceedance, including procedures for recording the actions taken to correct the exceedance.
    - 3. The startup, shutdown and malfunction plan also must include the schedules listed in § 63.866(a)(2)(i) and (ii):

- a. A maintenance schedule for each control technique that is consistent with, but not limited to, the manufacturer's instructions and recommendations for routine and long-term maintenance; and
  - b. An inspection schedule for each continuous monitoring system required under § 63.864 to ensure, at least once in each 24-hour period, that each continuous monitoring system is properly functioning.
- i. The permittee must maintain records of any occurrence when corrective action is required under 40 C.F.R. § 63.864(k)(1), and when a violation is noted under § 63.864(k)(2). [Reg.19.304 and 40 C.F.R. § 63.866(b)]
  - j. In addition to the general records required by § 63.10(b)(2), the permittee must maintain records of the information in § 63.866(c)(1) through (7): [Reg.19.304 and 40 C.F.R. § 63.866(c)]
    - i. Records of CaO production rates in units of Mg/d or ton/d for all lime kilns;
    - ii. Records of the parameter monitoring data required under § 63.864, including any period when the operating parameter levels were inconsistent with the levels established during the initial performance test, with a brief explanation of the cause of the deviation, the time the deviation occurred, the time corrective action was initiated and completed, and the corrective action taken;
    - iii. Records and documentation of supporting calculations for compliance determinations made under §§ 63.865(a) through (d);
    - iv. Records of monitoring parameter ranges established for each affected source or process unit.
  - k. The permittee must submit the applicable notifications from Subpart A of this part, as specified in Table 1 of this subpart § 63.867. [Reg.19.304 and 40 C.F.R. § 63.867(a)]
  - l. The permittee must report quarterly if the measured parameters meet any of the conditions specified in § 63.864(k)(1) or (2). This report must contain the information specified in § 63.10(c) of this part as well as the number and duration of occurrences when the source met or exceeded the conditions in § 63.864(k)(1), and the number and duration of occurrences when the source met or exceeded the conditions in § 63.864(k)(2). Reporting excess emissions below the violation

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thresholds of § 63.864(k) does not constitute a violation of the applicable standard. [Reg.19.304 and 40 C.F.R. § 63.867(c)]

- i. When no exceedances of parameters have occurred, the owner or operator must submit a semiannual report stating that no excess emissions occurred during the reporting period.
- ii. The permittee may combine the excess emissions and/or summary reports for Subpart S with the reports required by Subpart MM. The reports shall be submitted in accordance with General Condition 7.

113. Reserved

114. Reserved

115. Reserved

SN-14

No. 3 Recovery Boiler

Source Description

The No. 3 Recovery Boiler, last modified in 1989, has a heat input capacity of 1,088 MMBtu/hr. Black liquor solids are combusted in this boiler to recover inorganic chemicals. Fuel oil and natural gas are also combusted in this boiler.

An electrostatic precipitator controls emissions. Continuous emission monitoring systems are in place for opacity, sulfur dioxide, total reduced sulfur, carbon monoxide, and oxides of nitrogen.

Due to its date of installation, this source is subject to 40 C.F.R. § 60, Subpart BB - *Standards of Performance for Kraft Pulp Mills*. The source is also subject to 40 C.F.R., § 63, Subpart MM - *National Standards for Hazardous Air Pollutants for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite and Stand-Alone Semichemical Pulp Mills*.

The permittee tested source SN-14 for formaldehyde emissions as required under Permit #287-AOP-R0. The formaldehyde emissions were determined to be below detectable levels. Therefore, the permittee is not required to perform further testing for formaldehyde from source SN-14 at this time.

Specific Conditions

116. The permittee shall not exceed the emission rates set forth in the following table. Compliance with the VOC limits shall be demonstrated through compliance with Specific Condition #128. Compliance with the CO emission limits shall be demonstrated through the use of CEMS as required in Specific Condition #124. [Reg.19.501 *et seq.* and 40 C.F.R. § 52, Subpart E]

SN	Description	Pollutant	lb/hr	tpy
14	No. 3 Recovery Boiler (1,088 MMBtu/hr)	VOC	136.0	595.7
		CO	856.0	3,749.3
		Lead	3.22E-03	0.01

117. The permittee shall not exceed the emission rates set forth in the following table. Compliance with the SO<sub>2</sub> and NO<sub>x</sub> emissions limits shall be demonstrated through the use of CEMS as required in Specific Conditions #123 and #125. Compliance with the PM<sub>10</sub> emission limits shall be demonstrated compliance with Specific Condition #134a. [Reg.19.901 *et seq.* and 40 C.F.R. § 52, Subpart E]



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SN	Description	Pollutant	lb/hr	tpy
14	No. 3 Recovery Boiler (1,088 MMBtu/hr)	PM <sub>10</sub>	93.5	409.5
		SO <sub>2</sub>	425.0	1,861.5
		NO <sub>x</sub>	270.0	1,182.6

118. The permittee shall not exceed the emission rates set forth in the following table. Compliance with the TRS emission limits shall be demonstrated through the use of CEMS as required in Specific Condition #121.e. [Reg.19.801, Reg.19.901 *et seq.* and 40 C.F.R. § 52, Subpart E]

SN	Description	Pollutant	lb/hr	tpy
14	No. 3 Recovery Boiler (1,088 MMBtu/hr)	TRS	6.6	28.9

119. The permittee shall not exceed the emission rates set forth in the following table. Compliance with the PM<sub>10</sub> emission limits shall be demonstrated compliance with Specific Condition #134a. [Reg.19.901 *et seq.* and 40 C.F.R. § 52, Subpart E, Reg.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
14	No. 3 Recovery Boiler (1,088 MMBtu/hr)	PM	93.5	409.5

120. The permittee shall not exceed the emission rates set forth in the following table. Compliance with the sulfuric acid limits shall be demonstrated through compliance with Specific Condition #132. Compliance with the hydrogen chloride emission limits shall be demonstrated through the use of CEMS as required in Specific Condition #125 and the equation in Specific Condition #130. Compliance with the TRS emission limits shall be demonstrated through the use of CEMS as required in Specific Condition #121.e. Compliance with the methanol, formaldehyde, and the styrene emission limits has been demonstrated through testing. [Reg.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
14	No. 3 Recovery Boiler (1,088 MMBtu/hr)	Acetaldehyde	0.06	0.26
		Antimony	1.40E-04	6.13E-04
		Arsenic	2.06E-04	9.01E-04
		Benzene	0.09	0.39
		Beryllium	1.36E-04	5.94E-04
		Cadmium	1.68E-03	7.36E-03
		Chromium	6.29E-03	0.03
		Chromium VI	2.24E-03	9.81E-03
		Cobalt	4.48E-04	1.96E-03

SN	Description	Pollutant	lb/hr	tpy
		Formaldehyde	0.92	4.05
		HCl	54.50	238.70
		Manganese	0.01	0.06
		Mercury	7.64E-04	3.35E-03
		Methanol	6.30	27.59
		Nickel	0.01	0.05
		Selenium	7.49E-04	3.28E-03
		HAP	N/A	300.60
		Sulfuric Acid	4.20	18.40

121. This source is considered an affected source under 40 C.F.R. § 60, Subpart A, General Conditions and 40 C.F.R. § 60, Subpart BB - *Standards of Performance for Kraft Pulp Mills* due to an installation date in 1989. A copy of Subpart BB may be found in Appendix C. This source is subject, but not limited to, the following conditions. [Reg.19.304 and 40 C.F.R. § 60 Subpart BB]
- a. The permittee shall not cause a discharge into the atmosphere from this source any gases which contain particulate matter in excess of 0.10 g/dscm (0.044 gr/dscf) corrected to 8 percent oxygen. [Reg.19.304 and 40 C.F.R. § 60.283(a)(1)(i)]
  - b. The permittee shall not cause a discharge into the atmosphere from this source any gases which exhibit an opacity of 35% or greater. (Note: Specific Condition #122 requires opacity of 20%) [Reg.19.304 and 40 C.F.R. § 60.283(a)(1)(ii)]
  - c. The permittee shall install, calibrate, maintain, and operate a continuous monitoring system to monitor and record the opacity of the gases discharged into the atmosphere from source SN-14. The span of this system will be set at 70 percent opacity. The permittee shall comply with the requirements of the ADEQ CEMS conditions in Appendix B. [Reg.19.304 and 40 C.F.R. § 60.284(a)(1)]
  - d. Total reduced sulfur emissions shall not exceed 5 ppm by volume on a dry basis, corrected to 8 percent oxygen. [Reg.19.304 and 40 C.F.R. § 60.283(a)(2)]
  - e. The permittee shall install, calibrate, maintain and operate a continuous monitoring system to monitor and record the concentration of the TRS emissions on a dry basis and the percent oxygen by volume on a dry basis in the gases discharged to the atmosphere from this source. These systems shall be located downstream of the control device and the spans of these continuous monitoring systems shall be set as follows. The permittee demonstrated that these monitors meet the required spans and will be required to notify the Department before modifying either monitoring system. [Reg.19.304 and 40 C.F.R. § 60.284(a)(2)]
    - i. At a TRS concentration of 30 ppm for the TRS continuous monitoring system.

- ii. At 25 percent oxygen for the continuous oxygen monitoring system.
- f. The permittee shall calculate and record, on a daily basis, the 12-hour average TRS concentrations for the two consecutive periods of the operating day. The permittee shall determine each 12-hour average as the arithmetic mean of the appropriate 12 contiguous 1-hour average TRS concentrations provided by the continuous monitoring system required under § 60.284(a)(2). [Reg.19.304 and 40 C.F.R. § 60.284(c)(1)]
- g. The permittee shall calculate and record, on a daily basis, the 12-hour average oxygen concentrations for the two consecutive periods of the operating day. The 12-hour averages shall correspond to the 12-hour average TRS concentrations under § 60.284(c)(1) and shall be determined as the arithmetic mean of the appropriate 12 contiguous 1-hour average oxygen concentrations provided by the continuous monitoring system required under § 60.284(a)(2). [Reg.19.304 and 40 C.F.R. § 60.284(c)(2)]
- h. The permittee shall correct all 12-hour average TRS concentrations to 8 percent oxygen by volume using the following equation: [Reg.19.304 and 40 C.F.R. § 60.284(c)(3)]

$$C_{\text{corr}} = C_{\text{meas}} \times [(21 - X)/(21 - Y)]$$

Where:

$C_{\text{corr}}$  = the concentration corrected for oxygen

$C_{\text{meas}}$  = the concentration uncorrected for oxygen

X = the volumetric oxygen concentration in percentage to be corrected to 8 percent

Y = the measured 12-hour average volumetric oxygen concentration

- i. For the purpose of reports required under § 60.7(c), any owner or operator subject to the provisions of this subpart shall report semiannually periods of excess emissions as follows. [Reg.19.304 and 40 C.F.R. § 60.284(d)(1)]
  - i. All 12-hour averages or TRS concentrations above 5 ppm by volume; and
  - ii. All 6-minute average opacities that exceed 35 percent. The permittee will be required to report as excess emissions all 6-minute average opacities that exceed 20 percent. However, only those emissions exceeding 35 percent opacity would be considered possible violations of 40 C.F.R. § 60, Subpart BB.

- j. The Administrator will not consider periods of excess emissions reported under § 60.284(d) to be indicative of a violation of § 60.11(d) provided that: [Reg.19.304 and 40 C.F.R. § 60.284(e)]
  - i. The percent of the total number of possible contiguous periods of excess emissions in a quarter (excluding periods of startup, shutdown or malfunction and periods when the facility is not operating) during which excess emissions do not exceed:
    - 1. One percent for TRS emissions from recovery furnaces
    - 2. Six percent average opacities from recovery furnaces
  - ii. The Administrator determines that the affected facility, including air pollution control equipment, is maintained and operated in a manner which is consistent with good air pollution control practice for minimizing emissions during periods of excess emissions.

122. Visible emissions may not exceed the limits specified in the following table as measured by EPA Reference Method 9. Compliance shall be demonstrated through the use of a COMS.

SN	Limit	Regulatory Citation
14	20%	§19.503 and 40 C.F.R. Part52, Subpart E

- 123. The permittee shall install, calibrate, maintain and operate a continuous emissions monitoring system for measuring NO<sub>x</sub> emissions from this source. This CEMS shall give a readout which demonstrates compliance with the applicable limits for NO<sub>x</sub>. The permittee shall comply with the ADEQ CEMS conditions found in Appendix B. [Reg.19.703, 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]
- 124. The permittee shall install, calibrate, maintain and operate a continuous emissions monitoring system for measuring CO emissions from this source. This CEMS shall give a readout which demonstrates compliance with the applicable limits for CO. The permittee shall comply with the ADEQ CEMS conditions found in Appendix B. [Reg.19.703, 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]
- 125. The permittee shall install, calibrate, maintain and operate a continuous emissions monitoring system for measuring SO<sub>2</sub> emissions from this source. This CEMS shall give a readout which demonstrates compliance with the applicable limits for SO<sub>2</sub>. The permittee shall comply with the ADEQ CEMS conditions found in Appendix B.

[Reg.19.703, 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]

126. The permittee shall maintain a minimum floor tube temperature of 400 °F on a 3-hour average at SN-14. This limit applies only when the boiler is firing in excess of 1.5 million pounds per day of black liquor solids. The permittee shall install, calibrate, maintain and operate a continuous monitoring device to measure and record the floor tube temperature at SN-14. This monitor shall record the temperature at least once every 15 minutes and store each hour's average in a database. The permittee shall submit semiannual reports showing the 3-hour average temperatures that are below the minimum and the monthly average temperature. These records shall be submitted in accordance with General Provision 7. [Reg.19.703, 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 and Reg.19.705 and 40 C.F.R. § 52 Subpart E]
127. The permittee shall maintain records of the black liquor solids fired at this source when not complying with the minimum floor tube temperature of 400 °F to demonstrate whether the minimum temperature requirement is in effect. The permittee shall update the records when the temperature is less than 400 °F, keep the records on site and make the records available to Department personnel upon request. [Reg.19.703, 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 and Reg.19.705 and 40 C.F.R. § 52 Subpart E]
128. The permittee shall conduct stack testing a minimum of once every five years to verify compliance with the VOC emission limits for this source. This testing shall be performed using EPA Reference Method 25A. This testing shall be conducted in accordance with Plantwide Condition #3. [Reg.19.702 and 40 C.F.R. § 52, Subpart E]
129. The permittee shall maintain records of the pounds per day of black liquor solids fired at SN-06 when not complying with the minimum floor tube temperature. The permittee shall update the records whenever the minimum temperature is below 400°F. These records shall be kept on site and made available to Department personnel upon request. [Reg.19.703, 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 and Reg.19.705 and 40 C.F.R. § 52 Subpart E]
130. The permittee shall demonstrate compliance with the hydrogen chloride emission rates by the use of the CEMS for sulfur dioxide and the following equations. [Reg.18.1003 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

$$\text{HCl}_{\text{ppm}} = (1.28 * \text{SO}_{2,\text{ppm}})/(1+(\text{SO}_{2,\text{ppm}} * 0.017))$$

$$\text{HCl}_{\text{lb/hr}} = \text{HCl}_{\text{ppm}} * 0.0947 * 1\text{E-}7 * \text{DSCFH}$$

131. The permittee shall calculate the hourly HCl emissions using the one-hour average PPM SO<sub>2</sub> values obtained from the CEMS. The permittee shall keep the calculation on site

and make the calculations available to Department personnel upon request. The permittee shall submit an annual total and each individual month's data in accordance with General Provision 7. [Reg.18.1003 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]]

132. A sulfur dioxide emission rate in excess of 250 ppm on a three-hour average as read by the CEMS for this pollutant shall be considered a violation of the sulfuric acid emission rate. [Reg.18.1003 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
133. The CO emission limits for this source are based on 30-day rolling averages while the SO<sub>2</sub> and NO<sub>x</sub> emission limits for this source are based on 3-hour averages. Days when the unit is not operating shall not be included in the 30-day rolling average. [Reg.19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]
134. This source is considered an affected source pursuant to 40 C.F.R. § 63, Subpart MM - *National Emissions Standards for Hazardous Air Pollutants for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite and Stand-Alone Semichemical Pulp Mills*. A copy of Subpart MM may be found in Appendix E. This source is subject, but not limited to, the following conditions: [Reg.19.304 and 40 C.F.R. § 63, Subpart MM]
  - a. The permittee shall ensure that the concentration of PM in the exhaust gases discharged to the atmosphere is less than or equal to 0.10 g/dscm (0.044 gr/dscf) corrected to 8 percent oxygen. [Reg.19.304 and 40 C.F.R. § 63.862(a)(i)(A)]
  - b. The permittee must install, calibrate, maintain and operate a continuous opacity monitoring system (COMS) to monitor and record the opacity of gases discharged into the atmosphere from this source. The span of this system shall be set at 70 percent opacity. [Reg.19.304 and 40 C.F.R. § 63.864]
  - c. The 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. [Reg.19.304 and 40 C.F.R. § 63.864(d)(3)]
  - d. The permittee must reduce the COMS data to 6-minute averages calculated from 36 or more data points equally spaced over each 6-minute period. [Reg.19.304 and 40 C.F.R. § 63.864(d)(4)]
  - e. The permittee must implement corrective action, as specified in the startup, shutdown and malfunction plan if the average of ten consecutive 6-minute averages result in a measured opacity of greater than 20 percent. [Reg.19.304 and 40 C.F.R. § 63.864(k)(1)(i)]

- f. The permittee is in violation of the standards of § 63.862 when opacity is greater than 35 percent for 6 percent or more of the operating time within any quarterly period. [Reg.19.304 and 40 C.F.R. § 63.864(k)(2)(ii)]
- g. The permittee must conduct an initial performance test using the test methods and procedures listed in § 63.7 and § 63.865(a) or 63.865(b), except as provided in 40 C.F.R. § 63.865(c)(1). This testing was performed on September 12, 2004.
- h. The permittee must develop and implement a written plan as described in § 63.6(e)(3) that contains the specific procedures to be followed for operating the source during periods of startup, shutdown and malfunction, and a program of corrective action for malfunctioning process and control systems used to comply with the standards. In addition to the information required in § 63.6(e), the plan must include the requirements in paragraphs (a)(1) and (a)(2) of § 63.866. [Reg.19.304 and 40 C.F.R. § 63.866(a)]
  - i. Procedures to determine and record the cause of an operating parameter exceedance and the time the exceedance began and ended, and;
  - ii. Corrective actions to be taken in the event of an operating parameter exceedance, including procedures for recording the actions taken to correct the exceedance.
  - iii. The startup, shutdown and malfunction plan must also include the schedules listed in paragraphs (a)(2)(i) and (ii) of § 63.866:
    - 1. A maintenance schedule for each control technique that is consistent with, but not limited to, the manufacturer's instructions and recommendations for routine and long-term maintenance; and
    - 2. An inspection schedule for each continuous monitoring system required under § 63.864 to ensure, at least once in each 24-hour period, that each continuous monitoring system is properly functioning.
- i. The owner or operator of an affected source or process unit must maintain records of any occurrence when corrective action is required is required under § 63.864(k)(1), and when a violation is noted under § 63.864(k)(2). The permittee shall keep these records on site and make them available to Department personnel upon request. [Reg.19.304 and 40 C.F.R. § 63.866(b)]
- j. In addition to the general records required by § 63.10(b)(2), the owner or operator must maintain records of the information required in § 63.866(c)(1) through (c)(7):

- i. Records of the black liquor solids firing rates in units of Mg/d r ton/d for all recovery furnaces;
  - ii. Records of the parameter monitoring data required under § 63.864, including any period when the operating parameter levels were inconsistent with the levels established during the initial performance test, with a brief explanation of the cause of the deviation, the time the deviation occurred, the time corrective action was initiated and completed, and the corrective action taken;
  - iii. Records and documentation of supporting calculations for compliance determinations made under §§ 63.865(a) through (d);
  - iv. Records of monitoring parameter ranges established for each affected source or process unit; and
  - v. Records certifying that an NDCE recovery furnace equipped with a dry ESP was used to comply with the gaseous organic HAP standard in 40 C.F.R. § 63.862(c)(1). [Reg.19.304 and 40 C.F.R. § 63.866(c)]
- k. The owner or operator of any affected source or process unit must submit the applicable notifications for Subpart A of this part, as specified in Table 1 of § 63.867. [Reg.19.304 and 40 C.F.R. § 63.867(a)]
- l. The owner or operator must report quarterly if measured parameters meet any of the conditions specified in paragraphs (k)(1) or (k)(2) of § 63.864. This report must contain the information specified in § 63.10(c) of this part as well as the number and duration of occurrences when the source met or exceeded the conditions in § 63.864(k)(1), and the number and duration of occurrences when the source met or exceeded the conditions in § 63.864(k)(2). Reporting excess emissions below the violation thresholds of § 63.864(k) does not constitute a violation of the applicable standard.
- i. When no exceedances of parameters have occurred, the owner or operator must submit a semiannual report stating that no excess emissions occurred during the reporting period.
  - ii. The owner or operator of an affected source or process unit subject to the requirements of this subpart and subpart S of this part may combine excess emissions and/or summary reports for the mill. The permittee shall submit these reports in accordance with General Provision 7 of this permit. [Reg.19.304 and 40 C.F.R. § 63.867(c)]



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- 134a. The permittee shall test source SN-14 every five years for particulate matter using EPA Reference Methods 5. The PM<sub>10</sub> test shall use either EPA Reference Methods 201A or 5. By using Method 5 for PM<sub>10</sub>, the facility shall assume all collected particulate is PM<sub>10</sub>. The permittee shall conduct all tests in accordance with Plantwide Condition #3. [Reg.19.702 and 40 C.F.R. § 52 Subpart E]
- 134b. This source (SN-14) is considered an affected source under 40 C.F.R. § 60, Subpart Db - *New Source Performance Standards for Industrial-Commercial-Institutional Steam Generating Units*. A copy of Subpart Db may be found in Appendix A. This source is subject, but not limited to, the following conditions: [Reg.19.304 and 40 C.F.R. § 60, Subpart Db]
- a. The permittee, during periods of fuel oil combustion, shall not cause to be discharged to the atmosphere any gases that contain PM in excess of 0.10 lb/MMBtu. For the purpose of demonstrating compliance with this NSPS requirement the permittee shall conduct initial testing in accordance with Plantwide Condition #3 upon the use of fuel oil. The permittee shall conduct the initial test using the test methods specified in § 60.46b (d). [Reg.19.304 and 40 C.F.R. § 60.43b (b)]. *Note:* Notwithstanding this NSPS requirement, the permittee must conduct the periodic testing in Specific Condition #134a.
  - b. The permittee shall not cause to be discharged into the atmosphere 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. *Note:* This opacity requirement only applies during periods of fuel oil combustion, and during periods of black liquor solids combustion the permittee shall continue to comply with opacity limit explicitly stated in Specific Condition #122. [Reg.19.304 and 40 C.F.R. § 60.43b (f)]
  - c. The permittee shall not exceed an annual capacity factor of 10 percent for fossil fuels combusted at this source. [Reg.19.304 and 40 C.F.R. § 60.44b (c)]
  - d. The permittee shall not combust any fuel oil with a sulfur concentration greater than 0.5 percent by weight. [Reg.19.304 and 40 C.F.R. § 60.42b (j)]
  - e. The permittee shall obtain and maintain at the affected facility fuel receipts from the fuel supplier that certify that the oil meets the definition of distillate oil and gaseous fuel meets the definition of natural gas as defined in § 60.41b and the applicable sulfur limit. The distillate oil need not meet the fuel nitrogen content specification in the definition of distillate oil. Reports shall be submitted to the Administrator certifying that only very low sulfur oil meeting this definition, natural gas, wood, and/or other fuels that are known to contain insignificant amounts of sulfur were combusted in the affected facility during the reporting period. *Note:* This condition does not apply to natural gas or black liquor solids fuels. [Reg.19.304 and 40 C.F.R. § 60.49b (r)]

Domtar A.W. LLC  
Permit #: 0287-AOP-R16  
AFIN: 41-00002

SN-15

No. 3 Smelt Dissolving Tank

Source Description

SN-15 is the No. 3 Smelt Dissolving Tank. This source is subject to 40 C.F.R. § 60, Subpart BB - *Standards of Performance for Kraft Pulp Mills* due an installation date of 1989.

Compliance with the scrubber parameters will demonstrate compliance with the emission rates for particulate matter, sulfur dioxide, and TRS. Compliance with the scrubber parameters will also demonstrate compliance with the opacity limit for this source. The No. 3 Smelt Dissolving Tank uses weak wash as the scrubbing medium.

The permittee has tested source SN-15 for formaldehyde emissions. The results of this test showed that any formaldehyde emissions are below detectable levels. Therefore, the permittee is not required to perform further testing for formaldehyde at source SN-15. Testing for methanol emission rates were discontinued as tests conducted on February 25, 2003, had an average methanol emission rate of 0.114 lb/hr.

Specific Conditions

135. 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 the testing requirement set forth in Specific Condition #143. [Reg.19.501 *et seq.* and 40 C.F.R. § 52, Subpart E]

SN	Description	Pollutant	lb/hr	tpy
15	No. 3 Smelt Dissolving Tank	VOC	9.3	40.5

136. The permittee shall not exceed the emission rates set forth in the following table. Compliance with the PM/PM<sub>10</sub> limits shall be demonstrated through compliance with Specific Condition #144.c. Compliance with the SO<sub>2</sub> limits shall be demonstrated through compliance with Specific Condition#144.c. [Reg.19.901 *et seq.* and 40 C.F.R. § 52, Subpart E]

SN	Description	Pollutant	lb/hr	tpy
15	No. 3 Smelt Dissolving Tank	PM	18.7	81.9
		PM <sub>10</sub>	18.7	81.9
		SO <sub>2</sub>	5.1	22.3

137. 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 #140.c. [Reg.19.804, Reg.19.901 *et seq.* and 40 C.F.R. § 52, Subpart E]

SN	Description	Pollutant	lb/hr	tpy
15	No. 3 Smelt Dissolving Tank	TRS	1.60	7.00

138. The permittee shall not exceed the emission rates set forth in the following table. Compliance with the PM and methanol limits shall be demonstrated through compliance with Specific Condition #144.c. Compliance with the ammonia limits shall be demonstrated through compliance with Specific Condition #142. Compliance with the formaldehyde emission rates was demonstrated by stack testing performed February 5, 2003. [Reg.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
15	No. 3 Smelt Dissolving Tank	Acetaldehyde	0.22	0.98
		Ammonia	57.40	251.41
		Beryllium	3.50E-05	1.53E-04
		Formaldehyde	0.58	2.54
		Methanol	3.22	14.10
		HAP	N/A	24.62

139. Visible emissions from this source shall not exceed 20% opacity as measured by EPA Reference Method 9. Compliance shall be demonstrated through compliance with Specific Condition 144.c. [Reg.19.503 and 40 C.F.R. § 52, Subpart E]
140. This source is subject to the provisions of 40 C.F.R. § 60, Subpart A-General Provisions and is considered an affected source under 40 C.F.R. § 60, Subpart BB - Standards of Performance for Kraft Pulp Mills due to an installation date of 1989. A copy of Subpart BB may be found in Appendix C of this permit. This source is subject, but not limited to, the following conditions. [Reg.19.304 and 40 C.F.R. § 60, Subpart BB]
- a. The permittee may not cause a discharge into the atmosphere from any smelt dissolving tank any gases which contain particulate matter in excess of 0.1 g/kg black liquor solids (dry weight) [0.2 lb/ton black liquor solids (dry weight)]. Monitoring of the scrubber parameters shall demonstrate compliance with the PM limit and the monitoring required in Specific Condition 144.c. [Reg.19.304 and 40 C.F.R. § 60.282(a)(2)]
  - b. TRS emissions from this source shall not exceed 0.0168 g/kg measured as grams H<sub>2</sub>S/kg black liquor solids on a 12-hour average (0.33 lb/ton black liquor solids as H<sub>2</sub>S). Monitoring of the scrubber parameters and the CEMS shall demonstrate compliance with the TRS limit and the monitoring required by Specific Condition 144.e. [Reg.19.304 and 40 C.F.R. § 60.283(a)(4)]

- c. The permittee shall install, calibrate, maintain and operate a monitoring device at this source for the continuous measurement of the pressure loss of the gas stream by the control equipment. The manufacturer must certify the monitoring device to be accurate within a gage pressure of  $\pm 500$  Pascal's (ca.  $\pm 2$  inches water gage pressure). This requirement is superseded by the more stringent requirement of scrubber flow monitoring in Specific Condition #144.b. [Reg.19.304 and 40 C.F.R. § 60.284(b)(2)(i), Reg.19.703, 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]
  - d. The permittee shall install, calibrate, maintain and operate a monitoring device at this source for the continuous measurement of the scrubbing liquid supply pressure to the control equipment. The manufacturer must certify the monitoring device to be accurate within  $\pm 15\%$  of the design scrubbing liquid supply pressure. The pressure sensor or tap is to be located close to the scrubbing liquid discharge point. The Administrator and the Director may be consulted for approval of alternate locations. [Reg.19.304 and 40 C.F.R. § 60.284(b)(2)(ii), Reg.19.703, 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]
  - e. The permittee shall record, at least once per shift, the measurements obtained from the continuous monitoring devices installed under § 60.284(b)(2). [Reg.19.304 and 40 C.F.R. § 60.284(c)(4)]
141. The permittee shall conduct testing to verify compliance with the TRS emission limits a minimum of once every five years. This testing shall be conducted using EPA Reference Method 16. This testing shall be performed in accordance with Plantwide Condition #3. [Reg.19.804]
142. The permittee shall conduct testing to verify compliance with the ammonia emission limits a minimum of once every five years. This testing shall be conducted using EPA Reference Method 206. This testing shall be performed in accordance with Plantwide Condition #3. [Reg.18.1002 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
143. The permittee shall conduct testing to verify compliance with the VOC emission limits a minimum of once every five years. This testing shall be conducted using EPA Reference Method 25A. This testing shall be performed in accordance with Plantwide Condition #3. [Reg.19.702 and 40 C.F.R. § 52, Subpart E]
144. This source is considered an affected source under 40 C.F.R. § 63, Subpart MM - *National Emission Standards for Hazardous Air Pollutants for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite and Stand-Alone Semichemical Pulp Mills*. A copy of Subpart MM may be found in Appendix E of this permit. This source is subject, but not limited to, the following requirements. [Reg.19.304 and 40 C.F.R. § 63, Subpart MM]

- a. The maximum concentration of PM in the exhaust gases discharged to the atmosphere is less than or equal to 0.10 kilogram per megagram (kg/Mg)(0.20 lb per ton (lb/ton)) of black liquor solids fired. [Reg19.304 and 40 C.F.R. § 63.862(a)(i)(B)]
- b. The permittee must install, calibrate, maintain and operate a Continuous Parameter Monitoring System (CPMS) to determine and record the pressure drop across the scrubber and the scrubbing liquid flow rate at least once every successive 15-minute period using the procedures in § 68.3(c), as well as the procedures in (e)(10)(i) and (ii) of § 63.864. [Reg.19.304 and 40 C.F.R. § 63.864(e)]
  - i. The monitoring device used for the continuous measurement of the pressure drop of the gas stream across the scrubber must be certified by the manufacturer to be accurate within a gage pressure of  $\pm 500$  Pascals ( $\pm 2$  inches of water gage pressure); and
  - ii. The monitoring device used for continuous measurement of the scrubbing liquid flow rate must be certified by the manufacturer to be accurate within  $\pm 5$  percent of the design scrubbing liquid flow rate.
- c. During the initial performance test required in § 63.865, the permittee established the operating ranges for the monitoring parameters in § 63.864(e)(10). The permittee may use weak wash as the scrubbing liquor. The permittee must maintain the scrubber parameters listed in the following table. [Reg.19.304 and 40 C.F.R. § 63.864(j)]

SN-15 No. 3 Smelt Dissolving Tank Scrubber Parameters	Scrubber Liquor Flow	Minimum 175 gpm
	Scrubber Pressure Drop ( $\Delta P$ )	Minimum 2.85 in. H <sub>2</sub> O

- d. The permittee may establish expanded or replacement operating ranges for the monitoring parameter values listed in § 63.864(e)(10) and established in § 63.864(j)(1) or (2) during subsequent performance tests using the test methods in § 63.865. [Reg.19.304 and 40 C.F.R. § 63.864(j)(3)]
- e. The permittee must continuously monitor each parameter and determine the arithmetic average value of each parameter during each performance test. The permittee may conduct multiple performance tests to establish a range of parameter values. [Reg.19.304 and 40 C.F.R. § 63.864(j)(4)]
- f. The permittee must implement corrective action as specified in the startup, shutdown and malfunction plan prepared under § 63.866(a) if any 3-hour average parameter is outside the range of values established in Specific Condition 144.c. [Reg.19.304 and 40 C.F.R. § 63.864(k)]

- g. The permittee is in violation of the standards of § 63.862 when six or more 3-hour average parameter values within any 6-month reporting period are outside the range of values established in § 63.864(j). [Reg.19.304 and 40 C.F.R. § 63.864(k)(iii)]
- h. The permittee must develop and implement a written plan as described in § 63.6(e)(3) that contains specific procedures to be followed for operating the source and maintaining the source during periods of startup, shutdown and malfunction and a program of corrective action for malfunctioning process and control systems used to comply with the standards. In addition to the information required in § 63.6(e), the permittee must include the requirements in § 63.866(a)(1) and (2). [Reg.19.304 and 40 C.F.R. § 63.866(a)]
  - i. Procedures to determine and record the cause of an operating parameter exceedance and the time an exceedance began and ended; and
  - ii. Corrective actions to be taken in the event of an operating parameter exceedance including procedures for recording the actions taken to correct the exceedance.
  - iii. The startup, shutdown and malfunction plan must also include the schedules listed in § 63.866(a)(2)(i) and (ii):
    - 1. A maintenance schedule for each control technique that is consistent with, but not limited to, the manufacturer's instructions and recommendations for routine and long-term maintenance; and
    - 2. An inspection schedule for each continuous monitoring system required under § 63.864 to ensure, at least once in each 24-hour period, that each continuous monitoring system is properly functioning.
- i. The permittee must maintain records of any occurrence when corrective action is required under § 63.864(k)(1), and when a violation is noted under § 63.864(k)(2). The permittee must submit records of corrective action to the Department in accordance with General Condition 7. [Reg.19.304 and 40 C.F.R. § 63.866(c)]
- j. In addition to the general records required by § 63.10(b)(2), the permittee must maintain records of the information in § 63.866(c)(1) through (7). [Reg.19.304 and 40 C.F.R. § 63.866(c)]
  - i. Records of parameter monitoring data required under § 63.864, including any period when the operating parameter levels were inconsistent with the levels established during the initial performance test, with a brief

- explanation of the cause of the deviation, the time the deviation occurred, the time corrective action was initiated and completed, and the corrective action taken;
- ii. Records and documentation of supporting calculations for compliance determinations made under § 63.865(a) through (d); and
  - iii. Records of the monitoring parameter ranges established for each affected source or process unit.
- k. The permittee must submit the applicable notifications from Subpart A of this part as specified in Table 1 of § 63.867. [Reg.19.304 and 40 C.F.R. § 63.867(a)]
- l. The permittee must report quarterly if measured parameters meet any of the conditions specified in § 63.864(k)(1) or (2). This report must contain the information specified in § 63.10(c) of this part as well as the number and duration of occurrences when the source met or exceeded the conditions in § 63.864(k)(1), and the number and duration of occurrences when the source met or exceeded the conditions in § 63.864(k)(2). Reporting excess emissions below the violation thresholds of § 63.864(k) does not constitute a violation of the applicable standard. [Reg.19.304 and 40 C.F.R. § 63.867(c)]
- i. When no exceedances of parameters have occurred, the permittee must submit a semiannual report stating that no excess emissions occurred during the reporting period.
- m. The permittee may combine the Subpart MM and Subpart S excess emissions and/or summary reports for the mill. This report shall be submitted in accordance with General Condition 7. [Reg.19.304 and 40 C.F.R. § 63.867(c)(2)]



SN-16, 17, and 18

No. 1A, 1B and 2 Bleachplant Vents

Source Description

The No.1A Bleachplant Vents (SN-16), the No. 1B Bleachplant Vents (SN-17) and the No. 2 Bleachplant Vents (SN-18), primarily use chlorine dioxide, oxygen, hydrogen peroxide, and sodium hydroxide for bleaching the brownstock. Individual wet scrubbers associated with SN-16, SN-17 and SN-18 control the emissions from the bleachplants. Airflow through the scrubbers is controlled indirectly by the amperage to the induced draft fans used with each scrubber. SN-16 and SN-17 have a single fan, while SN-18 has two fans which alternate in operation. White liquor or other chlorine neutralizing chemicals are used as the scrubbing liquid.

An additional bleaching stage was added to facilitate the conversion from chlorine bleaching to 100% chlorine dioxide substitution. Emissions from the Pre-bleach Washer (the No. 1B Pre-Bleach Washer) and bleach tower vents are routed to the SN-17 scrubber. Emissions from the ClO<sub>2</sub> storage tank vents are routed to the SN-18 scrubber. Seal tank vents are connected to the SN-17 scrubber after being collected in the Pre-bleach Washer. Emissions from the SVP R-8 ClO<sub>2</sub> generator are not listed as a separate source, since they are included with SN-18 controlled emissions.

This source is subject to the MACT I Cluster Rule, 40 C.F.R. § 63 Subpart S - *National Emission Standards for Hazardous Air Pollutants from the Pulp and Paper Industry*, due to the use of chlorinated compounds in the bleaching process as outlined in § 63.445.

Specific Conditions

145. 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 #148. [Reg.19.501 *et seq.* and 40 C.F.R. § 52, Subpart E]

SN	Description	Pollutant	lb/hr	tpy
16, 17, 18	No. 1A, 1B and 2 Bleachplant Vents	VOC	32.0	140.2
		CO	240.4	1,053.0

146. 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 #147. [Reg.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
16, 17, 18	No. 1A, 1B and 2 Bleachplant Vents	Acetaldehyde	0.39	1.72
		Chlorine	6.00	26.28
		Chlorine Dioxide	N/A	17.52
		Chloroform	16.50	72.27
		Formaldehyde	0.07	0.31
		HCl	3.75	16.41
		Methanol	25.55	111.90
		TRS	0.48	2.09
		HAP	N/A	228.89

147. The permittee shall test SN-16, 17 and 18 a minimum of once every five years to verify compliance with the chlorine and chlorine dioxide emission rates using the testing method found in NCASI Special Report 91-07, *Measurement and Quality Assurance Procedures for Determining Chloroform, Chlorine and Chlorine Dioxide Releases from Pulp Bleach Plants*. This testing shall be conducted in accordance with Plantwide Condition #3. The permittee shall also measure the scrubber liquid flow rate during the testing in order to establish the parameters that will be used to demonstrate compliance with the permitted emission rates. [Reg.18.1002 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
148. The permittee shall test SN-16, 17 and 18 a minimum of once every five years to verify compliance with the VOC and CO emission rates using EPA Reference Methods 25A and 10B respectively. This testing shall be conducted in accordance with Plantwide Condition #3. [Reg.19.702 and 40 C.F.R. § 52, Subpart E]
149. The permittee will comply with and monitor the scrubber liquid flow rates and the amperage of the induced draft fans at sources SN-16, SN-17 and SN-18, established by the testing required by Specific Condition #150. The permittee will also record the flow rates and the fan amperage once per eight-hour shift and average the three daily readings. The permittee will keep all readings and averages on site and make the records available to Department personnel upon request. The permittee will submit the daily averages to the Department in accordance with General Provision 7. [Reg.19.703, 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]
150. These sources, which make up the Bleach Plant, are considered affected sources under 40 C.F.R. § 63, Subpart S - *National Emission Standards for Hazardous Air Pollutants from the Pulp and Paper Industry*. A copy of Subpart S can be found in Appendix D of this permit. These sources are subject, but not limited to, the following conditions.  
 [Reg.19.304 and 40 C.F.R. § 63, Subpart S]
- a. The permittee may use no chlorine or hypochlorite in any of the bleaching systems. [Reg.19.304 and 40 C.F.R. § 63.445(d)(2)]

- b. The equipment at each bleaching stage, of the bleaching systems listed in § 63.644(a), where chlorinated compounds are introduced shall be enclosed and vented into a closed-vent system and routed to a control device that meets the requirements specified in § 63.644(c). The enclosures and closed-vent system shall meet the requirements specified in Plantwide Conditions 19.o through 19.t. [Reg.19.304 and 40 C.F.R. § 63.445(b)]
- c. The control device used to reduce chlorinated HAP emissions (not including chloroform) from the equipment specified in § 63.443(c) shall:
  - i. Reduce the total chlorinated HAP mass in the vent stream entering the control device by 99 percent or more by weight;
  - ii. Achieve a treatment device outlet concentration of 10 ppm or less by volume of total chlorinated HAP; or
  - iii. Achieve a treatment device outlet mass emission rate of 0.001 kg of total chlorinated HAP mass per megagram (0.002 pounds per ton) of oven-dried pulp. [Reg.19.304 and 40 C.F.R. § 63.445(c)]
- d. The permittee shall install, calibrate, certify, operate and maintain according to the manufacturer's specifications, a continuous monitoring system (CMS, as defined in § 63.2 of this part) as specified in § 63.453(c) and (d), except as allowed in § 63.453(m). The CMS shall include continuous recorders for measuring the recirculation flow rate and the inlet pH of the scrubbing liquor. [Reg.19.304 and 40 C.F.R. § 63.453(a)]
- e. A CMS shall be operated to measure the following parameters for each gas scrubber used to comply with the bleaching requirements of § 63.445(c).
  - i. The scrubbing liquor at all three bleaching units shall be maintained at a pH of 8.5 or greater to assure that the scrubber outlet concentration of chlorinated HAP is 10 ppm or less by volume based on hourly averages. If the minimum pH is not met on an hourly average basis, the reason for this control failure shall be determined and reported as necessary.
  - ii. The permittee shall determine the gas scrubber inlet flow rate under the requirements of § 63.453(m) by monitoring the amperage rates of the draft fans. The permittee shall maintain the amperage rates to the induced draft fans associated with the three scrubbers within the ranges listed in the following table.

SN	Minimum Amperage	Maximum Amperage
16	65	105
17	50	105
18	30	80

- iii. The flow rates of the scrubbers shall be maintained at the following recirculation rates or higher for the three scrubbers. [Reg.19.304 and 40 C.F.R. § 63.445(c), Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN	Flow Rate (gpm)
16	300
17	300
18	350

- f. The flow of gaseous effluent into the scrubbers shall be determined indirectly by the amperage measured on the induced draft fans that blow pollutants to the Bleach Plant Scrubbers (SN-16, 17 and 18). To ensure compliance with Subpart S, the substituted parameter shall be monitored for effectiveness with the following tests and inspections. [Reg.19.304 and 40 C.F.R. § 63.453(a)]
- i. An annual pressure differential test shall be performed to ensure that the Bleach Plant Scrubber fans maintain the required negative pressure across the system;
  - ii. Monthly visual inspections under the Leak Detection and Repair plan for the scrubber fans and associated process;
  - iii. Periodic preventive maintenance of the Bleach Plant Scrubber fan to ensure proper operation;
  - iv. An initial performance test to determine the acceptable range of electrical current to the fans that provides an acceptable pressure differential across the scrubber system; and
  - v. The gas scrubber liquid influent flow rate.
- g. As an option to the requirements specified in 63.450(c), the permittee may opt to measure the chlorine outlet concentration of each gas scrubber used to comply with the bleaching system outlet concentration requirement specified in 40 C.F.R. § 63.445(c)(2). [Reg.19.304 and 40 C.F.R. § 63.453(d)]

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- h. The closed vent system must comply with the requirements in Plantwide Conditions #19.w through #19.dd, #24, and #25. [Reg.19.304 and 40 C.F.R. § 63.453(k)]
- i. The permittee shall set the flow indicator on each bypass line specified in § 63.450(d)(1) to provide a record of the presence of gas stream flow in the bypass line at least once every 15 minutes. [Reg.19.304 and 40 C.F.R. § 63.455(e)]
- j. The permittee shall comply with the recordkeeping requirements specified in Plantwide Condition #26. [Reg.19.304 and 40 C.F.R. § 63.455]

SN-20

ERCO ClO<sub>2</sub> Generator

Source Description

SN-20 is the ERCO ClO<sub>2</sub> Generator. The permit allows Domtar to operate the chlorine dioxide generator at capacity for 8,760 hours per year. Therefore, Domtar keeps no annual records for this source. Domtar will demonstrate compliance by the required testing and monitoring for this source. Domtar performed testing for volatile organic compounds from this source in the past. VOCs were below the detection level.

Specific Conditions

151. 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 #152. [Reg.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
20	ERCO ClO <sub>2</sub> Generator	Chlorine	0.30	1.32
		Chlorine Dioxide	N/A	13.14
		HAP	N/A	1.32

152. The permittee shall test this source a minimum of once every five years to verify compliance with the chlorine and chlorine dioxide emission rates using the testing method found in NCASI Special Report 91-07, *Measurement and Quality Assurance Procedures for Determining Chloroform, Chlorine and Chlorine Dioxide Releases from Pulp Bleach Plants*. This testing shall be conducted in accordance with Plantwide Condition #3. The permittee shall also monitor the temperature of the absorption water in order to determine a maximum temperature that demonstrates compliance with the emission rates found in Specific Condition #151. [Reg.18.1002 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
153. The permittee shall record the temperature of the absorption water once per eight-hour shift to demonstrate compliance with Specific Condition #152. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-21

Effluent Treatment Lagoons

Source Description

SN-21 designates the emissions from the surface of the Effluent Treatment Lagoons.

The effluent treatment system is also used as an affected source under the clean condensate alternative (CCA) described in 40 C.F.R. § 63, § 63.447. The treatment system includes the primary clarifiers, open trench and pre-settling ponds, as well as the aeration ponds used for biological treatment of the mill's effluent. Under CCA, the permittee offsets emissions from HVLC sources in the mill by routing pulping condensates through the hardpiped header directly beneath the surface of the aeration pond. This rerouting prevents uncontrolled emissions from the individual portions of the effluent treatment system by keeping the condensates out of open sewers where they could easily volatilize. The permittee has accepted more stringent condensate collection and treatment requirements in order to comply with the clean condensate alternative under 40 C.F.R. § 63, Subpart S.

Specific Conditions

154. 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 #156.a. [Reg.19.501 *et seq.* and 40 C.F.R. § 52, Subpart E]

SN	Description	Pollutant	lb/hr	tpy
21	Effluent Treatment Lagoons	VOC	248.9	1,090.2

155. 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 #156.a. [Reg.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
21	Effluent Treatment Lagoons	Chloroform	0.43	1.86
		Formaldehyde	0.08	0.32
		Methanol	248.40	1,088.00
		HAP	N/A	1090.18

156. The requirements of this section apply to owners or operators of Kraft processes subject to the requirements of 40 C.F.R. § 63, Subpart S - *National Emission Standards for Hazardous Air Pollutants from the Pulp and Paper Industry*. A copy of Subpart S may be found in Appendix D of this permit. [Reg.19.304 and 40 C.F.R. § 63.446(a)]

- a. The permittee shall conduct daily monitoring of the site-specific parameters established according to the procedures specified in § 63.453(n) and perform the following monitoring procedures: [Reg.19.304 and 40 C.F.R. § 63.453(j)(2)]
  - i. On a daily basis, the permittee shall monitor the outlet COD from the first aeration pond. If the COD exceeds 634 mg/l, the permittee shall implement the procedures for parametric excursions listed in § 63.453(p);
  - ii. On a daily basis, the permittee will monitor the horsepower-hours applied to the effluent treatment system. If the total horsepower-hours fall below 11,600 hp-hr, the permittee shall implement the procedures listed in § 63.453(p);
  - iii. Inlet liquid flow; and
  - iv. Liquid temperature.
- b. The permittee shall obtain daily inlet and outlet liquid grab samples from each biological treatment unit to have HAP data available to perform quarterly percent reduction tests specified in § 63.453(j) and (j)(2)(ii) and the compliance percent reduction tests specified in § 63.453(j)(p)(1)(i). The permittee shall perform the following procedures with the liquid samples:
  - i. Perform the percent reduction test procedures specified in § 63.457(l) within 45 days after the beginning of each quarter as follows;
    1. The percent reduction test performed in the first quarter (annually) will be performed for total HAP and the percent reduction obtained from the test shall be at least as great as the total HAP reduction specified in § 63.446(e)(2).
    2. The remaining quarterly percent reduction test shall be performed for methanol and the percent reduction obtained from the test will be at least as great as the methanol reduction determined in the first quarter test specified in § 63.453(j)(2)(ii)(A).
- c. The parameter values used to calculate the percent reductions required in § 63.453(j)(2)(ii)(A) and (B) shall be the parameter values measured and the samples taken under § 63.453(j)(1) of this section.
- d. Each owner or operator of a biological treatment system complying with § 63.453(j) shall meet all of the following requirements when the monitoring parameters specified in 40 C.F.R. § 63.453(j)(1)(i) through (iii) are below the minimum operating parameter values or above the maximum operating parameter



values established in 40 C.F.R. § 63.453(n). [Reg.19.304 and 40 C.F.R. § 63.453(p)]

- i. The following shall occur and be recorded as soon as practical:
  1. determine compliance with 40 C.F.R. § 63.446(e)(2) using the percent reduction test procedures specified in 40 C.F.R. § 63.457(l) and the monitoring data specified in 40 C.F.R. § 63.453(j)(1) that coincide with the time period of the parameter excursion;
  2. Steps shall be taken to repair or adjust the operation of the process to end the parameter excursion period; and
  3. Steps shall be taken to minimize total HAP emissions to the atmosphere during the parameter excursion period.
  
- e. A parameter excursion is not a violation of the applicable emission standard if the percent reduction test specified in 40 C.F.R. § 63.453(p)(1)(i) demonstrates compliance with 40 C.F.R.63.446(e)(2), and no maintenance or changes have been made to the process or control device after the beginning of a parameter excursion that would influence the results of the determination.
  
- f. The permittee shall perform an initial performance test (IPT) within 180 days of permit issuance in order to determine compliance with the clean condensate alternative. The level of over-collection g required to demonstrate compliance with the clean condensate alternative by offsetting the HVLC emissions shall be established by the IPT and shall be no less than 14.4 lb/odtp. Compliance with the collection requirements under 40 C.F.R. § 63.446 and § 63.447 shall be demonstrated by the new combined collection limit, at an appropriate averaging period. [Reg19.304 and 40 C.F.R. § 63.453(a)]

SN-22

No. 1A and 1B Brownstock Washers Vents

Source Description

Source SN-22 consists of the drum and belt washers used to wash the spent cooking chemicals from the brownstock. The liquid formed in this washing process is weak black liquor. The Weak Black Liquor Tanks (SN-36) store the weak black liquor from the washing process. No control equipment is associated with the brownstock washers.

Specific Conditions

157. 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 the methanol emission rates set forth in Specific Condition #160. [Reg.19.501 *et seq.* and 40 C.F.R. § 52, Subpart E]

SN	Description	Pollutant	lb/hr	tpy
22	No. 1A and 1B Brownstock Washers Vents	VOC	59.2	259.3

158. The permittee shall not exceed the emission rates set forth in the following table. The permittee shall demonstrate compliance with the acetone and methanol emission rates through compliance with Specific Condition #160. Compliance with the formaldehyde emission rates has been demonstrated through previous testing. Compliance with the TRS limit shall be demonstrated through compliance with Specific Condition # 160b. [Reg.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
22	No. 1A and 1B Brownstock Washers Vents	Acetone	N/A	38.54
		Formaldehyde	0.20	0.88
		Methanol	59.00	258.40
		TRS	18.55	81.24
		HAP	N/A	259.28

159. The methanol concentration in the shower water at this source shall not exceed 300 ppm and the acetone concentration shall not exceed 200 ppm. Compliance shall be demonstrated through compliance with Specific Condition #160. [Reg.18.1002 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
160. The permittee shall test the shower water at this source at least once per year to obtain the methanol and acetone concentrations using EPA Reference Method 25D or NCASI

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Method DI/MEOH-94-02, *Methanol in Processed Liquids by GC/FID*, August 1998, Methods Manual, NCASI, Research Triangle Park, NC. These records shall be maintained on site and made available to Department personnel upon request. If the test results exceed the limits established in Specific Condition #159, the permittee must test for that pollutant on a weekly basis for a minimum of ten consecutive weeks. Once ten consecutive tests give passing results, the permittee may resume annual testing. [Reg.18.1002 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

- 160b. The permittee shall not exceed a throughput of 420,480 air dried tons of unbleached pulp per consecutive 12-month period per washer. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
- 160c. The permittee shall maintain records of the tons of air dried unbleached pulp throughput at this source. These records shall be maintained on a monthly basis and updated by the fifteenth day of the month following the month to which the records pertain. These records shall be maintained on site and made available to Department personnel upon request. A copy of these records shall be submitted in accordance with General Provision 7. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-23 and SN-28

Storage Tanks

Source Description

These tanks store various chemicals used at this facility. Throughput records will demonstrate compliance with the emission rates.

Source SN-23, installed in 1989, is subject to the provisions of 40 C.F.R. § 60, Subpart Kb, due to its size and its date of installation. None of the other storage tanks listed in this section are subject to any of the New Source Performance Standards.

Specific Conditions

161. 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 Conditions #164 and #168. [Reg.19.501 *et seq.* and 40 C.F.R. § 52, Subpart E]

SN	Description	Pollutant	lb/hr	tpy
23	Methanol Storage Tank (29,000 gallon)	VOC	39.81	1.06
28	Formic Acid Storage Tank (9,500 gallon)	VOC	6.62	0.15

162. 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 #164 and #168. [Reg.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
23	Methanol Storage Tank (29,000 gallon)	Methanol HAP	39.81 N/A	1.06 1.06

163. SN-23 is considered an affected source under 40 C.F.R. § 60, Subpart A, General Provisions and 40 C.F.R. § 60, Subpart Kb - *Standards of Performance for Volatile Organic Liquid Storage Vessels for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984*. A copy of Subpart Kb may be found in Appendix G. This source is subject, but not limited to, the following conditions. [Reg.19.304 and 40 C.F.R. § 60, Subpart Kb]

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- a. The permittee shall keep readily accessible records showing the dimensions of this storage vessel and an analysis showing the capacity of the storage vessel. [Reg.19.304 and 40 C.F.R. § 60.116b(b)]
  - b. The permittee will notify the Administrator within 30 days when the maximum true vapor pressure exceeds 27.6 kPa. The vapor pressure may be obtained from standard reference texts, determined by ASTM Method D2879-83, measured by an appropriate method approved by the Administrator, or calculated by an appropriate method approved by the Administrator. The appropriate MSDS may be used to determine the vapor pressure of the material stored at source SN-23. [Reg.19.304 and 40 C.F.R. § 60.116b(d)]
164. The permittee shall store only methanol in SN-23. The methanol throughput at this source shall not exceed 18,850,000 lbs per consecutive twelve month period. The permittee shall maintain records of the methanol throughput at this source. These records shall be maintained on a monthly basis and updated by the fifteenth day of the month following the month to which the records pertain. These records shall be maintained on site and made available to Department personnel upon request. A copy of these records shall be submitted in accordance with General Provision 7. [Reg.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]
165. Reserved
166. Reserved
167. Reserved
168. The permittee shall store only formic acid in SN-28. The formic acid throughput at this source shall not exceed 5,336,000 lbs per consecutive twelve month period. The permittee shall maintain records of the formic acid throughput at this source. These records shall be maintained on a monthly basis and updated by the fifteenth day of the month following the month to which the records pertain. These records shall be maintained on site and made available to Department personnel upon request. A copy of these records shall be submitted in accordance with General Provision 7. [Reg.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]

SN-29

Recausticizer Vents

Source Description

The Recausticizer vents are Source SN-29. Normal operation of the two recausticizers includes slaking of lime with green liquor from one of the recovery boilers.

Scrubbers provide emission controls for the slakers on both of the recausticizers lines. While workers are in the kilns for inspection or maintenance, the scrubbers may also receive the vents from the lime silos that normally vent to the kilns in order to minimize dusting in the area.

Specific Conditions

169. 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 #171. [Reg.19.501 *et seq.* and 40 C.F.R. § 52, Subpart E]

SN	Description	Pollutant	lb/hr	tpy
29	Recausticizer Vents	PM <sub>10</sub>	1.8	7.9
		VOC	3.7	15.9

170. 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 #171. [Reg.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
29	Recausticizer Vents	PM	1.8	7.9
		Acetaldehyde	0.51	2.23
		Ammonia	26.50	116.10
		Methanol	3.11	13.62
		HAP	N/A	15.85

171. The permittee shall not process more than 420,500 tons of lime at this source per consecutive twelve month period. Compliance shall be demonstrated through compliance with Specific Condition #172. [Reg.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]
172. The permittee shall maintain records of the amount of lime processed at this source. These records shall be maintained on a monthly basis and updated by the fifteenth day of the month following the month to which the records pertain. These records shall be maintained on site and made available to Department personnel upon request. A copy of

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these records shall be submitted in accordance with General Provision 7. [Reg.19.705  
and 40 C.F.R. § 52, Subpart E]

SN-30A through F

PCC Carbonators

Source Description

The PCC Plant receives lime via rail or truck and stores the lime in on-site silos. The precipitated calcium carbonate (PCC) plant scrubs carbon dioxide from the two lime kiln stacks to manufacture PCC. The process takes the stack gases from either kiln, scrubs the gases to remove particulates, cools the gases to maintain product quality and reacts the gases with the slacked lime to produce PCC. The PCC is then stored in tanks until pumped to one of the paper machines.

The PCC plant is not a combustion source, and testing showed that NO<sub>x</sub> and VOC emissions decrease as they are processed through the calcium carbonate production process. Testing for TRS and SO<sub>2</sub> on similar plants showed reductions as high as 80%. Particulate emissions from each lime kiln are also reduced in the primary scrubbers and the subsequent scrubbing in the PCC process. The only emissions actually created in the PCC area are particulates. Because of the large reduction in particulate from the primary scrubbers, the net effect on particulate emissions is a large reduction.

Currently, there are six PCC Carbonators located at this facility. The PCC process does not create any new emissions. The lime kiln exhaust gases cause all emissions. Therefore, the annual emissions for these sources are included in the lime kiln emissions (SN-02). The hourly rates have been "bundled" for these individual sources.

Specific Conditions

173. 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 Conditions #175 and #176. [Reg.19.501 *et seq.* and 40 C.F.R. § 52, Subpart E]

SN	Description	Pollutant	lb/hr
30 A through F	PCC Carbonators	PM <sub>10</sub>	4.8
		SO <sub>2</sub>	2.4
		VOC	12.6
		CO	54.6
		NO <sub>x</sub>	65.4

174. 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 Conditions #175 and #176. [Reg.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
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SN	Description	Pollutant	lb/hr
30 A through F	PCC Carbonators	PM TRS	4.8 0.36

175. The permittee shall test at least two of the PCC carbonators a minimum of once every five years for the pollutants listed below using the indicated test methods. The Department reserves the right to determine which of the PCC carbonators to test. [Reg.19.702 and 40 C.F.R. § 52, Subpart E]

Pollutant	EPA Reference Method
SO <sub>2</sub>	6C
VOC	25A
NO <sub>x</sub>	7E
CO	10B

176. The permittee shall test at least two of the PCC carbonators at least once every five years for particulate matter using EPA Reference Methods 5. The PM<sub>10</sub> test shall use either EPA Reference Methods 201A or 5. By using Method 5 the facility shall assume all collected particulate matter is PM<sub>10</sub>. [Reg.19.702 and 40 C.F.R. § 52, Subpart E]

SN-36

Weak Black Liquor Tanks  
 (Tanks #1 through #9 and #10)

Source Description

Emissions for SN-36 are from the ten weak black liquor tanks. The weak black liquor washing lines send the weak black liquor to one of the weak black liquor tanks before sending the weak black liquor to the recovery process. No control equipment is associated with any of the weak black liquor tanks.

The tenth tank (SN-36-10T) is a 700,000 gallon tank. It was permitted for construction in 2009.

Specific Conditions

177. 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 #180. [Reg.19.501 *et seq.* and 40 C.F.R. § 52, Subpart E]

SN	Description	Pollutant	lb/hr	tpy
36	Weak Black Liquor Tanks	VOC	8.6	37.5

178. 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 #180. [Reg.19.901 *et seq.* and 40 C.F.R. § 52, Subpart E]

SN	Description	Pollutant	lb/hr	tpy
36	Weak Black Liquor Tanks No. 1 through 9	TRS	0.1	0.5

179. 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 #180. [Reg.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
36	Weak Black Liquor Tanks	Acetaldehyde	0.04	0.17
		Acetone	N/A	0.84
		Methanol	8.52	37.32
		TRS*	0.06	0.28
		HAP	N/A	37.49

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\* This limit applies to SN-36-T10 only, and compliance shall be demonstrated through compliance with Specific Condition #181. Tanks #1 through #9 shall demonstrate compliance with the TRS limits in Specific Condition #178.

180. The temperature at this source shall not exceed 203 °F. The permittee shall install, calibrate, maintain and operate a continuous monitoring system to monitor and record the temperature at this source. These records shall be maintained on site and made available to Department personnel upon request. [Reg.18.1003 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
181. The permittee shall not exceed a throughput of 2,018,304,000 gallons of weak black liquor per each consecutive 12-month period at SN-36-T10. [Reg.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]
182. The permittee shall maintain a 12-month rolling total of the gallons of weak black liquor throughput at SN-36-T10. These records shall be updated by the 15th day of the month following the month to which the records pertain, kept on site, made available to Department personnel upon request, and submitted every six months in accordance with the requirements of General Provision 7. [Reg.19.705 and 40 C.F.R. § 52, Subpart E]

SN-37

Pulp Dryer

Source Description

SN-37 consists of the Pulp Dryer Hood and Vacuum Exhausts. The main emissions from this source consist of residuals carried over from the bleaching process. The former exhaust fan, hood fans, and vacuum pump exhausts emit the pollutants. No control equipment is associated with the pulp drying process.

Specific Conditions

183. 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 #185. [Reg.19.501 *et seq.* and 40 C.F.R. § 52, Subpart E]

SN	Description	Pollutant	lb/hr	tpy
37	Pulp Dryer	VOC	4.7	20.5

184. 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 #185a. [Reg.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
37	Pulp Dryer	Acetaldehyde	1.49	6.51
		Methanol	3.20	13.99
		HAP	N/A	20.50

185. The VOC concentration in the white water at this source shall not exceed 20 ppm. The permittee shall test the white water using EPA Reference Method 25D a minimum of once per year in order to verify compliance with the 20 ppm VOC limit. The permittee shall maintain records of the results of the white water testing. These records shall be kept on site and made available to Department personnel upon request. A copy of these records shall be submitted in accordance with General Provision 7. [Reg.19.702 and 40 C.F.R. § 52, Subpart E]

- 185a. The permittee shall not exceed a throughput 328,500 tons of air dried pulp per consecutive 12-month period. [Reg.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]

- 185b. The permittee shall maintain monthly records to demonstrate compliance with Specific Condition #185a. The permittee shall update these records by the fifteenth day of the month following the month to which the records pertain. A twelve month rolling total

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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. [Reg.19.705 and 40 C.F.R. § 52, Subpart E]

SN-38

No. 2 and No. 3 Wood Yards

Source Description

The No. 2 and No. 3 Wood Yards provide storage for logs brought on-site. The wood yard also processes the logs for use in making pulp and fuel for the boilers (mainly bark). No control equipment is associated with the wood yards.

Due to the modification to the wood yard that installed a jetscreen, created an additional softwood chip pile, and installed associated handling equipment (*i.e.* conveyors, screens, transfer points, *etc.*) there was increase for particulate matter. The increase was based on projected actual emissions and was greater than fifty (50) percent of the PSD significant emission rate. Therefore, the requirements for “reasonable possibility” exists [40 C.F.R. §52.21 (r)(6)]. Specific Condition #187b lists these requirements.

Specific Conditions

186. 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 #187. [Reg.19.501 *et seq.* and 40 C.F.R. § 52, Subpart E]

SN	Description	Pollutant	lb/hr	tpy
38	No. 2 and No. 3 Wood Yards	PM <sub>10</sub>	3.3	14.4

186b. 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 #187. [Reg.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
38	No. 2 and No. 3 Wood Yards	PM	4.9	21.3

186c. 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 #187. [Reg.19.901 *et seq.* and 40 C.F.R. § 52, Subpart E]

SN	Description	Pollutant	lb/hr	tpy
38	No. 2 and No. 3 Wood Yards	VOC	532.6	2,332.8

187. The permittee shall not process more than 4,320,000 tons of wood chips per consecutive twelve month period. The permittee shall maintain records of the amount of wood chips processed at the wood yard on a monthly basis and these records shall be updated no later than the fifteenth day of the month following the month to which the records pertain. These records shall be kept on site and made available to Department personnel upon request. A copy of these records shall be submitted in accordance with General Provision 7. [Reg.19.901 *et seq.* and 40 C.F.R. § 52, Subpart E]
- 187b. A reasonable possibility exists that the modification resulting in issuance of Permit No. 287-AOP-R10 may result in a significant increase for particulate matter. The applicable requirements of “reasonable possibility” include, but are not limited to, the following:
- a. Before beginning actual construction of the project, the permittee shall document and maintain a record of the following information: [40 C.F.R. §52.21 (r)(6)(i)]
    - i. A description of the project;
    - ii. Identification of the emissions unit(s) whose emissions of a regulated NSR pollutant could be affected by the project; and
    - iii. A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including the baseline actual emissions, the projected actual emissions, the amount of emissions excluded under paragraph (b)(41)(ii)( c ) of 40 C.F.R. §52.21 and an explanation for why such amount was excluded, and any netting calculations, if applicable.
  - b. The permittee shall monitor the emissions of any regulated NSR pollutant that could increase as a result of the project and that is emitted by any emissions unit identified in Specific Condition 187b (a)(ii); and calculate and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of 5 years following resumption of regular operations after the change, or for a period of 10 years following resumption of regular operations after the change if the project increases the design capacity or potential to emit that regulated NSR pollutant at such emissions unit. [40 C.F.R. §52.21 (r)(6)(iii)]
  - c. The permittee shall submit a report if the annual emissions, in tons per year, from the project identified in Specific Condition 187b (a)(i), exceed the baseline actual emissions (as documented and maintained pursuant Specific Condition 187b (a)(iii)), by a significant amount (*i.e.* 25 tons PM, 15 tons PM<sub>10</sub>, or 10 tons PM<sub>2.5</sub>), and if such emissions differ from the preconstruction projection as documented and maintained pursuant to Specific Condition 187b (a)(iii). Such report shall be submitted within 60 days after the end of such year. The report shall contain the following: [40 C.F.R. §52.21 (r)(6)(v)]

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- i. The name, address and telephone number of the major stationary source;
- ii. The annual emissions as calculated pursuant to Specific Condition 187b.b.; and
- iii. Any other information that the owner or operator wishes to include in the report (e.g., an explanation as to why the emissions differ from the preconstruction projection).
- d. The permittee shall make the information required to be documented and maintained pursuant to Specific Condition 187b available for review upon a request for inspection by ADEQ, the EPA, or the general public. [40 C.F.R. §70.4(b)(3)(viii)]



SN-40

No. 1A and 1B Digester Chip Fill Exhaust

Source Description

SN-40 includes the No. 1A and No. 1B Digester Chip Fill Exhausts. The digesters cook the wood chips under pressure with white liquor and black liquor. Emissions result while blowing the chips from the digesters to the blow tanks. No control equipment is associated with this source.

Specific Conditions

188. 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 #191. [Reg.19.501 *et seq.* and 40 C.F.R. § 52, Subpart E]

SN	Description	Pollutant	lb/hr	tpy
40	No. 1A and 1B Digester Chip Fill Exhaust	VOC	10.0	44.0

189. 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 #191. [Reg.19.901 *et seq.* and 40 C.F.R. § 52, Subpart E, Reg.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
40	No. 1A and 1B Digester Chip Fill Exhaust	Methanol	5.75	25.10
		TRS	2.02	8.80
		HAP	N/A	25.10

190. Reserved

191. The spacing of the digester blows shall not fall below 25 minutes. Blowing the digesters in less than 25 minute intervals, shall be considered a violation of the emission rates for this source. [Reg.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]

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192. The permittee shall maintain records of the spacing of the digester blows. These records shall be maintained on a monthly basis and updated not later than the 15th day of the month following the month to which the records pertain. These records shall be maintained on site and made available to department personnel upon request.  
[Reg.19.705 and 40 C.F.R. § 52, Subpart E]

SN-41

Sludge Landfill

Source Description

SN-41 is the Sludge Landfill. The mill landfills sludge from the mill at the Sludge Landfill. The hourly emission rates are for a worst-case scenario.

Specific Conditions

193. 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 #195. [Reg.19.501 *et seq.* and 40 C.F.R. § 52, Subpart E]

SN	Description	Pollutant	lb/hr	tpy
41	Sludge Landfill	PM <sub>10</sub>	0.1	0.1
		VOC	63.2	23.05
		CO	4.8	1.8

194. 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 #195. [Reg.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
41	Sludge Landfill	PM	0.1	0.1
		Benzene	0.18	0.07
		Chloroform	4.00E-03	1.60E-03
		Dichloromethane	1.45	0.53
		Ethylene Dibromide	2.00E-04	8.40E-05
		Hexane	0.69	0.25
		Mercury	1.00E-04	2.60E-05
		HAP	N/A	4.45

195. The permittee shall not place in excess of 344,000 cubic yards (163,000 tons) of sludge in the landfill during any consecutive twelve-month period. [Reg.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]

196. The permittee shall maintain records of the amount of sludge placed in the landfill. These records shall be maintained on a quarterly basis. The permittee may use the records required by the Solid Waste Division of the Department to fulfill this record keeping requirement. These records shall be maintained on site and made available to Department personnel upon request. A copy of these records shall be submitted in accordance with General Provision 7. [Reg.19.705 and 40 C.F.R. § 52, Subpart E]

SN-42

No. 2 Decker

Source Description

The No. 2 Decker thickens the brownstock before routing to one of the brownstock high-density storage tanks. No control equipment is associated with this source.

Specific Conditions

197. 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 #200. [Reg.19.501 *et seq.* and 40 C.F.R. § 52, Subpart E]

SN	Description	Pollutant	lb/hr	tpy
42	No. 2 Decker	VOC	5.6	24.5

198. 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 #199 for methanol and acetone and Specific Condition #200a for acetaldehyde, formaldehyde, and TRS. [Reg.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
42	No. 2 Decker	Acetaldehyde	0.35	1.52
		Acetone	N/A	32.90
		Formaldehyde	0.20	0.85
		Methanol	3.30	14.42
		TRS	2.58	11.28
		HAP	N/A	16.79

199. The methanol concentration in the shower water at this source shall not exceed 300 ppm, and the acetone concentration shall not exceed 200 ppm. Compliance shall be demonstrated through compliance with Specific Condition #200. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
200. The permittee shall test the shower water at this source at least once per year to obtain the methanol and acetone concentration using EPA Reference Method 25D or NCASI Method DI/MEOH-94-02, *Methanol in Processed Liquids by GC/FID*, August 1998, Methods Manual, NCASI, Research Triangle Park, NC. These records shall be maintained on site and made available to Department personnel upon request. If the test results exceed the limits established in Specific Condition #199, the permittee must test for that pollutant on a weekly basis for a minimum ten consecutive weeks. Once ten consecutive tests give passing results, the permittee may resume annual testing.

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[Reg.18.1002 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

- 200a. The permittee shall not exceed a throughput 427,123 tons of air dried unbleached pulp per consecutive 12-month period. [Reg.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]
- 200b. The permittee shall maintain monthly records to demonstrate compliance with Specific Condition #200a. The permittee shall update these records by the fifteenth day of the month following the month to which the records pertain. A twelve month rolling total 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. [Reg.19.705 and 40 C.F.R. § 52, Subpart E]

SN-43

Tub Grinder

Source Description

The Tub Grinder (SN-43) grinds various wood waste products at this facility. Diesel fuel powers the tub grinder's engine. No control equipment is associated with this source.

Specific Conditions

201. 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 #204. [Reg.19.501 *et seq.* and 40 C.F.R. § 52, Subpart E]

SN	Description	Pollutant	lb/hr	tpy
43	Tub Grinder (4 MMBtu/hr)	PM <sub>10</sub>	1.3	5.6
		SO <sub>2</sub>	1.2	5.3
		VOC	1.5	6.5
		CO	3.9	17.2
		NO <sub>x</sub>	18.2	79.6

202. 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 #204. [Reg.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
43	Tub Grinder (4 MMBtu/hr)	PM	1.3	5.6
		Acetaldehyde	3.16E-03	1.39E-02
		Acrolein	3.81E-04	1.67E-03
		Benzene	3.85E-03	1.69E-02
		Formaldehyde	4.87E-03	2.13E-02
		PAH	6.93E-04	3.03E-03
		HAP	N/A	0.07

203. The permittee shall use only No. 2 fuel oil to fire the tub grinder's engine. [Reg.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]
204. The permittee shall not use in excess of 258,000 gallons of no. 2 fuel oil at the tub grinder during any consecutive twelve month period. The permittee shall maintain records of the amount of No. 2 fuel oil used at the tub grinder. These records shall be maintained on a monthly basis and updated by the 15th day of the month following the month to which the records pertain. These records shall be maintained on site and made available to Department personnel upon request. A copy of these records shall be submitted in

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accordance with General Provision 7. [Reg.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]

SN-44A through 44D

Paper Machines

Source Description

The mill has four Paper Machines of varying sizes. No control equipment is associated with the paper machines.

The permittee conducted tests in September of 1997 for emissions of several HAPs. The tests detected no HAP emissions. However, previous tests detected methanol emissions at sources SN-44B, SN-44C, and SN-44D. Therefore, the permit contains methanol emission limits for those sources based on the previous testing.

A mist eliminator has been added to SN-44D, consisting of a separator chamber to collect condensed water and fibers. The exhaust will consist of moist air. The mill installed some false ceilings above other exhaust fans to minimize condensation on the paper.

Specific Conditions

205. 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 #208. [Reg.19.501 *et seq.* and 40 C.F.R. § 52, Subpart E]

SN	Description	Pollutant	lb/hr	tpy
44A	61 Paper Machine	VOC	2.0	8.8
44B	62 Paper Machine	VOC	4.7	20.6
44C	63 Paper Machine	VOC	5.6	24.6
44D	64 Paper Machine	VOC	10.3	44.9

206. 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 #210 for methanol and Specific Condition #210a for acetaldehyde, acrolein, and formaldehyde. [Reg.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
44A	61 Paper Machine	Acetaldehyde	0.76	3.32
		Acrolein	0.04	0.16
		Formaldehyde	0.15	0.65
		Methanol	2.00	8.76
		HAP	N/A	12.89



SN	Description	Pollutant	lb/hr	tpy
44B	62 Paper Machine	Acetaldehyde	1.22	5.34
		Acrolein	0.06	0.26
		Formaldehyde	0.24	1.04
		Methanol	4.70	20.59
		HAP	N/A	27.23
44C	63 Paper Machine	Acetaldehyde	1.22	5.34
		Acrolein	0.06	0.26
		Formaldehyde	0.24	1.04
		Methanol	5.60	24.60
		HAP	N/A	31.24
44D	64 Paper Machine	Acetaldehyde	3.17	13.86
		Acrolein	0.16	0.68
		Formaldehyde	0.62	2.69
		Methanol	6.80	29.78
		HAP	N/A	47.01

207. The VOC concentration in the shower water at SN-44a shall not exceed 20 ppm. Compliance shall be demonstrated through compliance with Specific Condition #208. [Reg.19.705 and 40 C.F.R. § 52, Subpart E]
208. The permittee shall test the shower water at SN-44a at least once per year to obtain the VOC concentration using EPA Reference Method 25D. The permittee shall maintain records of these test results. These records shall be maintained on site and made available to Department personnel upon request. A copy of these records shall be submitted in accordance with General Provision 7. [Reg.19.702 and 40 C.F.R. § 52, Subpart E]
209. The methanol concentration in the shower water at SN-44b, 44c, and 44d shall not exceed 20 ppm. Compliance shall be demonstrated through compliance with Specific Condition #210. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
210. The permittee shall test the shower water at SN-44b, 44c, and 44d at least once per year to obtain the methanol concentration using EPA Reference Method 25A or NCASI Method DI/MEOH-94-02, *Methanol in Processed Liquids by GC/FID*, August 1998, Methods Manual, NCASI, Research Triangle Park, NC. The permittee shall keep records of these test results. These records shall be maintained on site and made available to Department personnel upon request. [Reg.18.1002 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
- 210a. The permittee shall not exceed the throughputs listed below per any consecutive 12-month period. [Reg.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]

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SN	Description	Maximum 12-month rolling total (air dried ton of finished product)
44A	61 Paper Machine	167,316
44B	62 Paper Machine	269,553
44C	63 Paper Machine	269,553
44D	64 Paper Machine*	700,070

\* Equipment was modified to produce fluff pulp and baled pulp

- 210b. The permittee shall maintain monthly records to demonstrate compliance with Specific Condition #210a. The permittee shall update these records by the fifteenth day of the month following the month to which the records pertain. A twelve month rolling total 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. [Reg.19.705 and 40 C.F.R. § 52, Subpart E]

SN-45

Oxygen Delignification System

Source Description

The Oxygen Delignification System (SN-45) reacts elemental oxygen with the brownstock before the bleaching process. The oxidation of the organic chemicals releases carbon monoxide and some volatile organic compounds, primarily methanol.

Specific Conditions

211. 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 #213, #213a, and #213c. [Reg.19.501 *et seq.* and 40 C.F.R. § 52, Subpart E]

SN	Description	Pollutant	lb/hr	tpy
45	Oxygen Delignification System	VOC*	9.1	39.9
		CO	16.50	72.27

\* This limit was proposed by the permittee to avoid triggering PSD requirements.

212. 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 the VOC emission rates listed above for methanol and with Specific Condition #213a for all other pollutants listed below. [Reg.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
45	Oxygen Delignification System	Acetaldehyde	1.23	5.39
		Formaldehyde	0.10	0.44
		Methanol	9.10	39.90
		TRS	2.00	8.76
		HAP	N/A	45.73

213. The permittee shall conduct testing to verify compliance with the CO emission rate for this source. This testing shall be performed using EPA Reference 10 respectively. Testing shall be conducted once every five years. This testing shall be performed in accordance with Plantwide Condition #3. [Reg.19.702 and 40 C.F.R. § 52, Subpart E]
- 213a. The permittee shall not exceed a throughput of 427,123 ADTUBP per consecutive 12-month period. [Reg.19.501 *et seq.* and 40 C.F.R. § 52, Subpart E]

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- 213b. The permittee shall maintain records to demonstrate compliance with Specific Condition #213a. The permittee shall update these records by the fifteenth day of the month following the month to which the records pertain. A twelve month rolling total 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. [Reg.19.705 and 40 C.F.R. § 52, Subpart E]
- 213c. The permittee shall conduct testing to verify compliance with the VOC emission rate for this source. This testing shall be performed using EPA Reference 25A. Testing shall be conducted within 180 days of issuance of Permit No. 287-AOP-R9 and repeated once every five years thereafter. This testing shall be performed in accordance with Plantwide Condition #3. A complete copy of the test report shall be submitted within 30 days following the test and shall include a summary page with the results of the test and the average production rate in ADTUBP/hr for each test run. [Reg.19.702 and 40 C.F.R. § 52, Subpart E]

SN-46

Haul Roads

Source Description

Materials are delivered to and moved throughout the facility on a series of both paved and unpaved roads.

Specific Conditions

214. 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 #216. [Reg.19.501 *et seq.* and 40 C.F.R. § 52, Subpart E]

SN	Description	Pollutant	lb/hr	tpy
46	Haul Roads	PM <sub>10</sub>	39.1	171.0

215. 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 #216. [Reg.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
46	Haul Roads	PM	167.0	731.4

216. The permittee shall maintain onsite and make available to Department personnel upon request a detailed haul road maintenance plan. This plan shall include a map showing which road segments have been paved. The plan shall also show which road segments will be treated with a chemical dust suppressant and a schedule of when these roads shall be treated. This plan shall be designed to minimize emissions from the roads. The permittee shall post a speed limit of 10 mph on all unpaved facility roads. [Reg.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]
217. Nothing in this permit shall be construed to authorize a violation of the Arkansas Water and Air Pollution Control Act or the federal National Pollutant Discharge Elimination System (NPDES). [Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-39

High Density Storage Tanks

Source Description

The unbleached high density storage tanks are used to store the brown stock before it is sent to the bleach plants. The bleached high density storage tanks are used to store the final bleached stock before it is sent to the pulp dryer or to one of the four paper machines for processing into market pulp or paper products. There are 11 tanks which store pulp at this source.

Specific Conditions

218. The permittee shall not exceed the emission rates set forth in the following table. Compliance with this condition is based on 8,760 hours per year of operation. [Reg.19.501 *et seq.* and 40 C.F.R. § 52, Subpart E]

SN	Description	Pollutant	lb/hr	tpy
39	High Density Storage Tanks	VOC	2.0	8.8

219. The permittee shall not exceed the emission rates set forth in the following table. Compliance with this condition is based on 8,760 hours per year of operation. [Reg.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
39	High Density Storage Tanks	Acetaldehyde	0.27	1.16
		Acetone	N/A	1.56
		Chloroform	0.15	0.67
		Methanol	1.59	6.94
		TRS	4.61	20.18
		HAP	N/A	8.77

220.-230. RESERVED

SN-50, SN-51, SN-53, SN-54a, SN-54b, SN-57, and SN-58

Stationary RICE

Source Description

The permittee operates seven (7) reciprocating internal combustion engines (RICE) that are affected sources under 40 C.F.R. § 63, Subpart ZZZZ. 40 C.F.R. § 60 RICE NSPS (Subpart IIII or Subpart JJJJ) may become applicable upon modification or reconstruction if either action occurs after July 11, 2005 for CI RICE (SN-50, SN-51, SN-53, and SN-57) or June 12, 2006 for SI RICE (SN-54a and SN-54b). SN-58 was installed in 2015, and the engine is subject to both Subpart ZZZZ and Subpart IIII. The following table lists the engines and other information used in determining applicability

Source Number	Source Name	Year of Installation	Engine Size (hp)	Fuel
SN-50	Caterpillar 3412 Emergency Generator	1992 or earlier	750	Diesel
SN-51	Cummins NH-220-IF Diesel Fired Pump #2	1968	200	Diesel
SN-53	Caterpillar 3408-D1 Diesel Fired Pump #8	1990 or earlier	510	Diesel
SN-54a	Ford LSG-875-6007ZA Lime Kiln Backup Motor #2	1978 or earlier	160	Propane
SN-54b	Ford CSG-6491-6007-YB Lime Kiln Backup Motor #3	1990 or earlier	125	Propane
SN-57	Caterpillar 3054 Radio Tower Emergency Generator	2002 or earlier	82	Diesel
SN-58	Cummins CFP7E-F30 Diesel Fire Pump #6	2015	260	Diesel

Note: SN-50, SN-51, SN-53, SN-57, and SN-58 are emergency engines. SN-54a and SN-54b are not emergency engines.

Specific Conditions

231. The permittee shall not exceed the emission rates set forth in the following table. Compliance with the hourly emission limits is based on the maximum equipment. Compliance with all annual emission limits shall be demonstrated through compliance with Specific Condition #238. [Reg.19.501 *et seq.* and 40 C.F.R. § 52, Subpart E]

SN	Description	Pollutant	lb/hr	tpy
50	Emergency Generator	PM <sub>10</sub>	1.7	0.5
		SO <sub>2</sub>	1.6	0.4

SN	Description	Pollutant	lb/hr	tpy
		VOC	1.9	0.5
		CO	5.0	1.3
		NO <sub>x</sub>	23.2	5.8
51	Fire Pump #2	PM <sub>10</sub>	0.5	0.2
		SO <sub>2</sub>	0.5	0.2
		VOC	0.6	0.2
		CO	1.4	0.4
		NO <sub>x</sub>	6.2	1.6
53	Fire Pump #8	PM <sub>10</sub>	1.2	0.3
		SO <sub>2</sub>	1.1	0.3
		VOC	1.3	0.4
		CO	3.4	0.9
		NO <sub>x</sub>	15.8	4.0
54a	Lime Kiln Backup Motor #2	PM <sub>10</sub>	0.1	0.1
		SO <sub>2</sub>	0.1	0.1
		VOC	0.1	0.1
		CO	4.2	1.1
		NO <sub>x</sub>	2.6	0.7
54b	Lime Kiln Backup Motor #3	PM <sub>10</sub>	0.1	0.1
		SO <sub>2</sub>	0.1	0.1
		VOC	0.1	0.1
		CO	3.3	0.9
		NO <sub>x</sub>	2.0	0.5
57	Radio Tower Emergency Generator	PM <sub>10</sub>	0.2	0.1
		SO <sub>2</sub>	0.2	0.1
		VOC	0.3	0.1
		CO	0.6	0.2
		NO <sub>x</sub>	2.6	0.7
58	Fire Pump #6	PM <sub>10</sub>	0.1	0.1
		SO <sub>2</sub>	0.5	0.2
		VOC	0.6	0.2
		CO	0.7	0.2
		NO <sub>x</sub>	1.5	0.4

232. The permittee shall not exceed the emission rates set forth in the following table. Compliance with the hourly emission limits is based on the maximum equipment. Compliance with all annual emission limits shall be demonstrated through compliance with Specific Condition #231. [Reg.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
50	Emergency Generator	PM	1.7	0.5
		Acetaldehyde	4.03E-03	1.01E-03
		Acrolein	4.86E-04	1.21E-04



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SN	Description	Pollutant	lb/hr	tpy
		Benzene	4.90E-03	1.22E-03
		Formaldehyde	6.20E-03	1.55E-03
		PAH	8.82E-04	2.21E-04
		HAP	N/A	5.20E-03
51	Fire Pump #2	PM	0.5	0.2
		Acetaldehyde	1.07E-03	2.68E-04
		Acrolein	1.30E-04	3.24E-05
		Benzene	1.31E-03	3.27E-04
		Formaldehyde	1.65E-03	4.13E-04
		PAH	2.35E-04	5.88E-05
		HAP	N/A	1.39E-03
53	Fire Pump #8	PM	1.2	0.3
		Acetaldehyde	2.74E-03	6.85E-04
		Acrolein	3.30E-04	8.26E-05
		Benzene	3.33E-03	8.33E-04
		Formaldehyde	4.21E-03	1.05E-03
		PAH	6.00E-04	1.50E-04
		HAP	N/A	3.53E-03
54a	Lime Kiln Backup Motor #2	PM	0.1	0.1
		Acetaldehyde	3.12E-03	7.81E-04
		Acrolein	2.95E-03	7.36E-04
		Benzene	1.77E-03	4.42E-04
		Chloroform	1.53E-05	3.84E-06
		Dichloromethane	4.61E-05	1.15E-05
		Ethylene Dibromide	2.39E-05	5.96E-06
		Formaldehyde	2.30E-02	5.74E-03
		Methanol	3.43E-03	8.57E-04
		PAH	1.58E-04	3.95E-05
		HAP	N/A	9.08E-03
54b	Lime Kiln Backup Motor #3	PM	0.1	0.1
		Acetaldehyde	2.46E-03	6.14E-04
		Acrolein	2.31E-03	5.79E-04
		Benzene	1.39E-03	3.48E-04
		Chloroform	1.21E-05	3.01E-06
		Dichloromethane	3.63E-05	9.06E-06
		Ethylene Dibromide	1.87E-05	4.69E-06
		Formaldehyde	1.80E-02	4.51E-03
		Methanol	2.69E-03	6.73E-04
		PAH	1.24E-04	3.10E-05
		HAP	N/A	7.13E-03
57	Radio Tower Emergency Generator	PM	0.2	0.1
		Acetaldehyde	4.40E-04	1.10E-04
		Acrolein	5.31E-05	1.33E-05
		Benzene	5.36E-04	1.34E-04
		Formaldehyde	6.77E-04	1.69E-04
		PAH	9.64E-05	2.41E-05
		HAP	N/A	5.62E-04

SN	Description	Pollutant	lb/hr	tpy
58	Fire Pump #6	PM	0.1	0.1
		Acetaldehyde	1.23E-03	3.09E-04
		Acrolein	1.49E-04	3.72E-05
		Benzene	1.50E-03	3.76E-04
		Formaldehyde	1.90E-03	4.75E-04
		PAH	2.70E-04	6.76E-05
		HAP	N/A	1.59E-03

233. 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 condition is demonstrated by complying with Specific Condition #234.

SN	Fuel Type	Limit	Regulatory Citation
50, 51, 53, 57, 58	Diesel	20%	Reg.19.503 and 40 C.F.R. § 52, Subpart E
54a, 54b	Propane	5%	Reg.18.501 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311

234. The permittee shall conduct annual visible emissions observations as a method of compliance verification for the opacity limits assigned for SN-50, SN-51, SN-53, SN-54a, SN-54b, SN-57, and SN-58. Observations shall be conducted by someone trained in EPA Reference Method 9. Whenever an event requires a source to be in operation for more than 24 consecutive hours, the permittee shall conduct daily visible emissions observations as a method of compliance verification for the opacity limit until that particular event has ended. The permittee shall maintain records related to all visible emission observations and Method 9 readings. These records shall be updated on an as-performed basis. These records shall be kept on site and made available to Department personnel upon request. These records shall contain:

- a. The time and date of each observation/reading,
- b. Any observance of visible emissions appearing to be above permitted limits or any Method 9 reading which indicates exceedance,
- c. The cause of any observed exceedance of opacity limits, corrective actions taken, and results of the reassessment, and
- d. The name of the person conducting the observation/reading
- e. If during the observations, visible emissions are detected which appear to be in excess of the permitted opacity limit, the permittee shall:

- i. Take immediate action to identify the cause of the visible emissions,
  - ii. Implement corrective action and document that visible emissions do not exceed the opacity limit, and
  - iii. If excessive visible emissions are still detected, an opacity reading shall be conducted in accordance with EPA Reference Method 9. This reading shall be conducted by a person trained and certified in the reference method. If the opacity reading exceeds the permitted limit, further corrective measures shall be taken.
- f. If no excessive visible emissions are detected, the observation shall be noted in the records.

[Reg.19.705 and 40 C.F.R. § 52, Subpart E]

235. SN-50 and SN-53 are existing emergency CI RICE that are larger than 500 hp and located at a major source of HAP. Those engines are subject to the requirements of 40 C.F.R. § 63, Subpart ZZZZ - *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines* with a compliance date of June 15, 2007. The applicable requirements include but are not limited to the following:
- a. There is no time limit on the use of emergency stationary RICE in emergency situations. [Reg.19.304 and 40 C.F.R. § 63.6640(f)(2)]
  - b. The permittee may operate the emergency stationary RICE for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by the manufacturer, the vendor, or the insurance company associated with the engine. Required testing of such units should be minimized, but there is no time limit on the use of emergency stationary RICE in emergency situations and for routine testing and maintenance. [Reg.19.304 and 40 C.F.R. § 63.6640(f)(2)]
  - c. The permittee may operate the emergency stationary RICE for an additional 50 hours per year in non-emergency situations. The 50 hours per year for non-emergency situations cannot be used for peak shaving 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. [Reg.19.304 and 40 C.F.R. § 63.6640(f)(2)]
  - d. Provided that the permittee operates the engine as an emergency stationary RICE, the permittee does not have to meet any other requirements, including initial notification requirements of 40 C.F.R. § 63, Subpart ZZZZ or 40 C.F.R. § 63, Subpart A. [Reg.19.304 and 40 C.F.R. § 63.6590(b)(3)(iii)]

- e. If the permittee does not operate the engine according to the requirements in the preceding paragraphs, the engine will not be considered an emergency engine under Subpart ZZZZ, and the permittee will need to meet all requirements for non-emergency engines. [Reg.19.304 and 40 C.F.R. § 63.6640(f)(2)]
236. SN-51 and SN-57 are existing emergency CI RICE that are less than 500 hp and located at a major source of HAP. Those engines are subject to the requirements of 40 C.F.R. § 63, Subpart ZZZZ - *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines* with a compliance date of May 3, 2013. The applicable requirements include but are not limited to the following:
- a. There is no time limit on the use of emergency stationary RICE in emergency situations. [Reg.19.304 and 40 C.F.R. § 63.6640(f)(1)]
  - b. The permittee may operate the emergency stationary RICE for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. The permittee 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 permittee maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency RICE beyond 100 hours per year. [Reg.19.304 and 40 C.F.R. § 63.6640(f)(1)]
  - c. The permittee may operate the emergency stationary RICE up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours per year provided for maintenance and testing. The 50 hours per year for non-emergency situations cannot be used for peak shaving 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; except that owners and operators may operate the emergency engine for a maximum of 15 hours per year as part of a demand response program if the regional transmission organization or equivalent balancing authority and transmission operator has determined there are emergency conditions that could lead to a potential electrical blackout, such as unusually low frequency, equipment overload, capacity or energy deficiency, or unacceptable voltage level. The engine may not be operated for more than 30 minutes prior to the time when the emergency condition is expected to occur, and the engine operation must be terminated immediately after the facility is notified that the emergency condition is no longer imminent. The 15 hours per year of demand response operation are counted as part of the 50 hours of operation per year provided for non-emergency situations. The supply of emergency power to another entity or entities pursuant to financial arrangement is not limited by this paragraph (f)(1)(iii), as long as the power provided by the financial arrangement is limited to emergency power [Reg.19.304 and 40 C.F.R. § 63.6640(f)(2)]

- d. If the permittee does not operate the engine according to the requirements in the preceding paragraph, the engine will not be considered an emergency engine under Subpart ZZZZ, and the permittee will need to meet all requirements for non-emergency engines. [Reg.19.304 and 40 C.F.R. § 63.6640(f)(2)]
- e. For each engine, the permittee shall install a non-resettable hour meter if one is not already installed. [Reg.19.304 and 40 C.F.R. § 63.6625 (f)]
- f. The permittee must operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions, or the permittee may develop their 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. [Reg.19.304 and 40 C.F.R. § 63.6625 (e)]
- g. The permittee shall 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. [Reg.19.304 and 40 C.F.R. § 63.6625 (h)]
- h. For each engine, the permittee shall change the oil and filter and inspect all hoses and belts every 500 hours of operation or annually, whichever comes first. The permittee may utilize an oil analysis program in accordance with 40 C.F.R. § 63.6625(i) in order to extend oil change requirement. The oil analysis must be performed at the same frequency specified for changing the oil. [Reg.19.304 and 40 C.F.R. § 63.6602]
- i. For each engine, the permittee shall inspect the air cleaner every 1,000 hours of operation or annually, whichever comes first. [Reg.19.304 and 40 C.F.R. § 63.6602]
- j. The permittee must report each instance in which the permittee was not in compliance with paragraphs (f),(g),(h), (i), or any other applicable requirement of Subpart ZZZZ. These instances are deviations from the requirements of the subpart and must be reported in semiannual monitoring report. [Reg.19.304 and 40 C.F.R. § 63.6640 and 40 C.F.R. § 63.6650 (f)]
- k. The permittee must maintain records in order to comply with Subpart ZZZZ. These records must be in a form suitable and readily available for expeditious review. The permittee must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. The records the permittee must maintain include but are not limited to reports submitted, operating and maintenance instructions, maintenance records, malfunctions, and actions taken during malfunctions to minimize emissions. The

records pertaining to the hours of operation must include hours of emergency use, hours of non-emergency use, emergency classification, demand response use, and notifications. [Reg.19.304, 40 C.F.R. § 63.6655, and 40 C.F.R. § 63.660]

237. SN-54a and SN-54b are existing non-emergency, four stroke rich burn SI RICE that are less than 500 hp and located at a major source of HAP. Those engines are subject to the requirements of 40 C.F.R. § 63, Subpart ZZZZ - *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines* with a compliance date of October 19, 2013. The applicable requirements include but are not limited to the following:
- a. The permittee shall not discharge to the atmosphere any gases from either SN-54a or SN-54b that contains formaldehyde in excess of 10.3 ppmvd at 15 percent O<sub>2</sub>. Compliance with this condition is based on the average of three 1-hour runs using the test method stated in #3 of Table 4 of Subpart ZZZZ. To comply with this condition each engine must be tested. [Reg.19.304 and 40 C.F.R. § 63.6602]
  - b. The permittee must conduct the initial performance test required in paragraph (a) by no later than April 16, 2014. [Reg.19.304 and 40 C.F.R. § 63.6612 (a)]
    - i. The permittee shall submit a Notification of Intent to conduct performance testing at least 60 days prior to the date the test is scheduled to be performed. [Reg.19.304 and 40 C.F.R. § 63.6645 (g)]
    - ii. The permittee shall submit a 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 40 C.F.R. § 63.10(d)(2). [Reg.19.304 and 40 C.F.R. § 63.6645 (h)(2)]
  - c. The permittee 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 permittee must limit formaldehyde concentrations in accordance with paragraph (a). [Reg.19.304 and 40 C.F.R. § 63.6625 (h)]
  - d. The permittee must maintain records in order to comply with Subpart ZZZZ. These records must be in a form suitable and readily available for expeditious review. The permittee must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. The records the permittee must maintain include but are not limited to reports submitted, notifications, operating and maintenance instructions, maintenance records, hours of operation per the non-resettable hour meter, malfunctions, and actions taken during malfunctions to minimize emissions. [Reg.19.304, 40 C.F.R. § 63.6655, and 40 C.F.R. § 63.6660]

e. The permittee shall submit a semiannual Compliance report. The first and subsequent semiannual Compliance reports may be submitted according to a schedule already approved by the Department. The first semiannual Compliance report shall cover the period beginning October 19, 2013 through thirty days prior to the date the Department requires the report to be postmarked or delivered. Subsequent reports shall cover the six month period according to the already approved reporting period. The Compliance report must contain the following information: [Reg.19.304 and 40 C.F.R. § 63.6650 (b)(5)]

- i. Company name and address;
- ii. Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report;
- iii. Date of report and beginning and ending dates of the reporting period;
- iv. If malfunction occurred during the reporting period, the compliance 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 the permittee during a malfunction of an affected source to minimize emissions in accordance with § 63.6605(b), including actions taken to correct a malfunction; and
- v. If there are no deviations from any emission or operating limitations that apply, a statement that there were no deviations from the emission or operating limitations during the reporting period

[Reg.19.304 and 40 C.F.R. § 63.6650 (c)(1) through (c)(5)]

238. SN-58 is a new emergency CI RICE less than 500 hp and located at a major source of HAP. The engine is subject to the requirements of 40 C.F.R. § 63, Subpart ZZZZ - *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines* and 40 C.F.R. § 60, Subpart III – *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*. The applicable requirements include but are not limited to the following:

a. The permittee shall comply with the emission standards in the table below for all pollutants. [Reg.19.304 and 40 C.F.R. § 60.4205(c)]

Maximum engine power	Model year(s)	NMHC + NO <sub>x</sub>	CO	PM
130≤KW<225 (175≤HP<300)	2009 +	4.0 (3.0) <sup>A</sup>	3.5 (2.6) <sup>A</sup>	0.20 (0.15) <sup>A</sup>

<sup>A</sup> g/kW-hr (g/HP-hr)

Source: 71 FR 39172, July 11, 2006

- b. The permittee shall 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. [Reg.19.304 and 40 C.F.R. § 60.4206]
- c. The permittee shall do all of the following, except as permitted 40 C.F.R. § 60.4211(g): [Reg.19.304 and 40 C.F.R. § 60.4211(a)]
  - i. Operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions; [Reg.19.304 and 40 C.F.R. § 60.4211(a)(1)]
  - ii. Change only those emission-related settings that are permitted by the manufacturer; and [Reg.19.304 and 40 C.F.R. § 60.4211(a)(2)]
  - iii. Meet the requirements of 40 CFR parts 89, 94 and/or 1068, as applicable. [Reg.19.304 and 40 C.F.R. § 60.4211(a)(3)]
- d. The permittee shall 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 40 C.F.R. § 60.4211(g). [Reg.19.304 and 40 C.F.R. § 60.4211(c)]
- e. Reserved
- f. The permittee must operate the emergency stationary ICE according to the requirements in paragraphs (f)(i) through (iii). In order for the engine to be considered an emergency stationary ICE under this subpart, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (f)(i) through (iii), is prohibited. If the permittee does not operate the engine according to the requirements in paragraphs (f)(i) through (iii), the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines. [Reg.19.304 and 40 C.F.R. § 60.4211(f)]
  - i. There is no time limit on the use of emergency stationary ICE in emergency situations. [Reg.19.304 and 40 C.F.R. § 60.4211(f)(1)]
  - ii. The permittee may operate the emergency stationary ICE for any combination of the purposes specified in paragraphs (f)(ii)(1) through (3) of this section for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraph (f)(iii) of counts as part of the



100 hours per calendar year allowed by this paragraph (f)(ii). [Reg.19.304 and 40 C.F.R. § 60.4211(f)(2)]

1. 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 permittee 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 permittee maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year. [Reg.19.304 and 40 C.F.R. § 60.4211(f)(2)(i)]
  2. Emergency stationary ICE may be operated for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see §60.17), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3. [Reg.19.304 and 40 C.F.R. § 60.4211(f)(2)(i)]
  3. Emergency stationary ICE may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency. [Reg.19.304 and 40 C.F.R. § 60.4211(f)(2)(iii)]
- iii. Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph (f)(ii) of this section. Except as provided in paragraph (f)(iii)(1), the 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity. [Reg.19.304 and 40 C.F.R. § 60.4211(f)(3)]
1. 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: [Reg.19.304 and 40 C.F.R. § 60.4211(f)(3)(i)]

- A. The engine is dispatched by the local balancing authority or local transmission and distribution system operator; [Reg.19.304 and 40 C.F.R. § 60.4211(f)(3)(i)(A)]
  - 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. [Reg.19.304 and 40 C.F.R. § 60.4211(f)(3)(i)(B)]
  - C. The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines. [Reg.19.304 and 40 C.F.R. § 60.4211(f)(3)(i)(C)]
  - D. The power is provided only to the facility itself or to support the local transmission and distribution system. [Reg.19.304 and 40 C.F.R. § 60.4211(f)(3)(i)(D)]
  - E. The permittee 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 permittee. [Reg.19.304 and 40 C.F.R. § 60.4211(f)(3)(i)(E)]
- g. If the permittee does not install, configure, operate, and maintain the engine and control device according to the manufacturer's emission-related written instructions, or the permittee changes emission-related settings in a way that is not permitted by the manufacturer, the permittee must demonstrate compliance as follows: [Reg.19.304 and 40 C.F.R. § 60.4211(g)]
- i. 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. [Reg.19.304 and 40 C.F.R. § 60.4211(g)(1)]

- ii. 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. [Reg.19.304 and 40 C.F.R. § 60.4211(g)(2)]
- iii. 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. [Reg.19.304 and 40 C.F.R. § 60.4211(g)(3)]
- h. The permittee shall only combust diesel fuel with a maximum sulfur content of 15 ppm (0.0015%) by weight and either a minimum cetane index of 40 or a maximum aromatic content of 35% by volume. [Reg.19.304 and 40 C.F.R. § 60.4207(b)]
- i. Reserved
- j. The permittee shall install a non-resettable hour meter prior to startup of the engine. [Reg.19.304 and 40 C.F.R. § 60.4209(a)]
- k. If the stationary CI internal combustion engine is an emergency stationary internal combustion engine, the permittee is not required to submit an initial notification. Starting with the model years in Table 5 to Subpart III, if the emergency engine does not meet the standards applicable to non-emergency engines in the applicable model year, the permittee shall 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

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engine and the reason the engine was in operation during that time. [Reg.19.304 and 40 C.F.R. § 60.4214(b)]

- l. If the stationary CI internal combustion engine is equipped with a diesel particulate filter, the permittee must keep records of any corrective action taken after the backpressure monitor has notified the permittee that the high backpressure limit of the engine is approached. [Reg.19.304 and 40 C.F.R. § 60.4214(c)]
    - m. The permittee shall comply with all applicable parts of the General Provisions in §§60.1 through 60.19 as shown in Table 8 of Subpart III. [Reg.19.304 and 40 C.F.R. § 60.4218]
239. The permittee shall not exceed 500 hours of operation at any of SN-50, SN-51, SN-53, SN-54a, SN-54b, SN-57, or SN-58 per calendar year. For SN-50, SN-51, SN-53, SN-57, and SN-58 the maximum hours of operation are subject to additional limitations by Specific Conditions #235 and #236. [Reg.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]
240. The permittee shall maintain records of the hours of operation for each source to demonstrate compliance with Specific Condition #239. For SN-50, SN-51, SN-53, SN-57, and SN-58 the reason for operation shall be recorded. The permittee shall update these records following each event. The twelve month rolling 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. [Reg.19.705 and 40 C.F.R. § 52, Subpart E]

SN-55

Paper Additive Silos

Source Description

The paper additive silos store either starch or bentonite clay. There are five silos. Each silo is equipped with a fabric filter to control particulate emissions during filling and transfer operations.

Specific Conditions

241. 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 #242. [Reg.19.501 *et seq.* and 40 C.F.R. § 52, Subpart E]

SN	Description	Pollutant	lb/hr	tpy
55	Paper Additive Silos	PM <sub>10</sub>	2.6	11.3

242. 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 #242. [Reg.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
55	Paper Additive Silos	PM	2.6	11.3

243. The permittee shall maintain a fabric filter on the vent of each silo. The permittee shall install fabric filters that will limit outlet grain loading to 0.03 grains particulate per dry standard cubic foot. [Reg.19.303 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
244. The permittee shall demonstrate compliance with Specific Condition #242 by recording the date each filter is installed, replaced, and inspected according to manufacturer's recommendation. The filters shall be inspected for holes and proper installation no less frequent than annually. [Reg.19.705 and 40 C.F.R. § 52, Subpart E]

SN-56

Dye Operation

Source Description

Dyes are used to change the shade or increase the visual brightness of paper. Dyes are mixed and then feed into the discharge of the machine chest or blend chest where they mixed with stock (pulp) prior to the stock being sprayed onto the wire for sheet formation.

Specific Conditions

245. 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 #245. [Reg.19.501 *et seq.* and 40 C.F.R. § 52, Subpart E]

SN	Description	Pollutant	lb/hr	tpy
56	Dye Operation	VOC	2.9	12.8

246. The permittee shall maintain monthly records of the amount of each VOC-containing material as applied during each calendar month, as well as the corresponding VOC content for each material. The monthly emissions shall be calculated for each material by multiplying the usage by the corresponding VOC content(s). The total VOC emissions from all products shall also be indicated on these records. A copy of the MSDS sheet for each product used shall accompany these records. The permittee will update the records by the fifteenth day of the month following the month to which the records pertain. A twelve month rolling total of VOC emissions and each individual month's data shall be kept on-site and shall be made available to Department personnel upon request. The permittee shall submit these records in accordance with General Provision #7. [Reg.19.501 *et seq.* and 40 C.F.R. § 52, Subpart E]

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

Domtar A.W. LLC will continue to operate in compliance with those identified regulatory provisions. The facility will examine and analyze future 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. [Reg.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. [Reg.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 Department or within 180 days of permit issuance if no date is specified. The permittee must notify the Department 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 Department within thirty (30) calendar days after completing the testing. [Reg.19.702 and/or Reg.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.

[Reg.19.702 and/or Reg.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. [Reg.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. [Reg. 26 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]



7. A change in the published emission factors or development of other emissions data for pollutants whose emissions were previously estimated using those published emission factors shall not be considered a violation of the applicable permit limits. This condition does not apply to pollutants for which site specific test data is available, pollutants with an NSPS or NESHAP standard, or limits which have been set through a PSD permitting action (i.e., those pollutants which have undergone a BACT analysis or which netted out of PSD review). [Reg.19.501 and 40 C.F.R. § 52, Subpart E, or Reg.18.801 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

#### 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.

#### Tire Derived Fuel

13. The permittee may use tire-derived fuels (TDF) in the three Power Boilers (SN-01, SN-03 and SN-05). However, the total amount of TDF burned in any 24-hour period shall not exceed 220 tons for all three boilers. The permittee shall maintain records of the amount of TDF used in the three Power Boilers. These records shall be maintained on a daily basis. These records shall be kept on site and made available to Department personnel upon request. The permittee shall submit a copy of the annual total and each day’s individual data in accordance with General Provision 7. [Reg.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]

#### Testing Conditions

14. The permittee is not required to test those sources not in operation for a minimum of 25% of a calendar quarter for criteria pollutants. The permittee shall resume the testing schedule outlined for a particular source when its operation exceeds 25% of a calendar quarter. The Department reserves the right to require testing upon the equipment’s return to normal operations. [Reg.19.702 and 40 C.F.R. § 52, Subpart E]
15. The permittee is not required to test those sources for non-criteria pollutants not in operation for a minimum of 25% of a calendar quarter. The permittee shall resume the testing schedule outlined for a particular source when its operation exceeds 25% of a calendar quarter. The Department reserves the right to require testing upon the equipment’s return to normal operations. [Reg.18.1002 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

16. The permittee shall maintain records of the operation of the sources referenced in Plant Wide Conditions #14 and #15 to demonstrate that testing is not required. The permittee shall keep these records on-site and provide the records to Department personnel upon request. The permittee shall submit the records to the Department in accordance with General Provision 7. [ Reg.19.705 and 40 C.F.R. § 52, Subpart E or Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]
17. For those sources using both a portable analyzer and an independent third party, the permittee shall use the higher of the two results to determine compliance with the applicable emission rate. If the difference of the results of the independent third party test and the test done with the portable analyzer is more than 10%, the permittee shall perform future tests using an independent third party and not the portable analyzer. [Reg.19.702 and 40 C.F.R. § 52, Subpart E]
18. The permittee may submit one excess emissions report (EER) for those sources where an NSPS and/or the Department's CEMS standards requires the permittee to submit an EER. The EER must contain all information required by the applicable NSPS subpart and the Department's CEMS standards. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

Standards for the Pulping System at Kraft Processes - Low Volume  
High Concentration Sources

19. The facility is subject to the provisions of 40 C.F.R. § 63, Subpart A - General Provisions and 40 C.F.R. § 63, Subpart S - *National Emission Standards for Hazardous Air Pollutants from the Pulp and Paper Industry*. Appendix D contains a copy of Subpart S. [Reg.19.304 and 40 C.F.R. § 63, Subpart S]
  - a. The permittee shall control the total HAP emissions from the Low Volume High Concentration (LVHC) systems. A LVHC system includes the digesters, turpentine recovery, evaporators steam strippers, and any other equipment serving the same the same function. [Reg.19.304 and 40 C.F.R. § 63.443(a)(1)(i)]
  - b. The LVHC Equipment system listed in 40 C.F.R. § 63.443(a)(1)(i) shall be enclosed and vented into a closed-vent system and routed to a control device that meets the requirements specified in § 63.443(d). The enclosures and closed-vent system shall meet the requirements specified in paragraph § 63.450. [Reg.19.304 and 40 C.F.R. § 63.443(c)]
  - c. The control device used to reduce total HAP emissions from each equipment system listed in 40 C.F.R. § 63.443(a)(1)(i) shall reduce the total HAP emissions using a boiler, lime kiln, or recovery furnace by introducing the HAP emission stream with the primary fuel or into the flame zone. [Reg.19.304 and 40 C.F.R. § 63.443(d)(4)]

- d. Periods of excess emissions reported under § 63.455 shall not be a violation of §§ 63.443(c) and (d) provided that the time of excess emissions (excluding periods of startup, shutdown, or malfunction) divided by the total process operating time in a semi-annual reporting period does not exceed the following levels: [Reg.19.304 and 40 C.F.R. §§ 63.443(e)(1) through (e)(4)]
  - i. One percent for control devices used to reduce the total HAP emissions from the LVHC system; and
  - ii. Four percent for control devices used to reduce the total HAP emissions from the HVLC system; and
  - iii. Four percent for control devices used to reduce the total HAP emissions from both the LVHC and the HVLC systems.
- e. The permittee shall treat the pulping process condensates from the following equipment systems to meet the requirements specified in 40 C.F.R. §§ 63.446(c), (d), and (e): [Reg.19.304 and 40 C.F.R. § 63.446(b)]
  - i. Each digester system;
  - ii. Each turpentine recovery system;
  - iii. Each evaporator system condensate from:
  - iv. The vapors from each stage where weak liquor is introduced (feed stages); and
  - v. Each evaporator vacuum system for each stage where weak liquor is introduced (feed stages).
  - vi. Each HVLC collection system; and
  - vii. Each LVHC collection system.
- f. One of the following combinations of HAP-containing pulping process condensates generated, produced, or associated with the equipment systems listed in 40 C.F.R. § 63.446(b) shall be subject to the requirements 40 C.F.R. §§ 63.446(d) and (e): [Reg.19.304 and 40 C.F.R. § 63.446(c)]
  - i. All pulping process condensates from the equipment systems specified 40 C.F.R. §§ 63.446(b)(1) through (b)(5).
  - ii. The combined pulping process condensates from the equipment systems specified 40 C.F.R. §§ 63.446(b)(4) and (b)(5), plus pulping process

condensate stream(s) that in total contain at least 65 percent of the total HAP mass from the pulping process condensates from equipment systems listed in paragraphs 40 C.F.R. §§ 63.446(b)(1) through (b)(3).

- iii. The pulping process condensates from equipment systems listed in 40 C.F.R. §§ 63.446(b)(1) through (b)(5) that in total contain a total HAP mass of 5.5 kilograms or more of total HAP per megagram (11.1 pounds per ton) of oven-dried pulp for mills that perform bleaching.
- g. The pulping process condensates from the equipment systems listed 40 C.F.R. § 63.446(b) shall be conveyed in a closed collection system that is designed and operated to meet the requirements specified 40 C.F.R. §§ 63.446(d)(1) and (d)(2). [Reg.19.304 and 40 C.F.R. § 63.446(d)]
- h. Each closed collection system shall meet the individual drain system requirements specified in §§ 63.960, 63.961, and 63.962 40 C.F.R. § 63, Subpart RR except for closed vent systems and control devices shall be designed and operated in accordance with §§ 63.443(d) and 63.450, instead of in accordance with § 63.693 as specified in § 63.962 (a)(3)(ii), (b)(3)(ii)(A), and (b)(5)(iii).
- i. The owner or operator subject to this subpart shall control air emissions from the individual drain system using one or a combination of the following:
  - 1. Covers, water seals, and other air emission control equipment as specified in paragraph (b) of this section.
  - 2. Hard-piping.
  - 3. Venting of the individual drain system through a closed vent system to a control device in accordance with the following requirements:
    - a. The individual drain system is designed and operated such that an internal pressure in the vapor headspace in the system is maintained at a level less than atmospheric pressure when the control device is operating, and
    - b. The closed vent system and control device are designed and operated in accordance with the requirements of § 63.693 in 40 C.F.R. part 63, subpart DD – *National Emission Standards for Hazardous Air Pollutant Standards from Off-Site Waste and Recovery Operations*.

- ii. Owners and operators controlling air emissions from an individual drain system in accordance with paragraph (a)(1) of this section shall meet the following requirements:
  - 1. The individual drain system shall be designed to segregate the organic vapors from regulated material managed in the controlled individual drain system from entering any other individual drain system that is not controlled for air emissions in accordance with the standards specified in this subpart.
  - 2. Drain control requirements. Each drain shall be equipped with either a water seal or a closure device in accordance with the following requirements:
    - a. When a water seal is used, the water seal shall be designed such that either:
      - b. The outlet to the pipe discharging the regulated-material extends below the liquid surface in the water seal of the drain; or
        - i. A flexible shield or other device is installed which restricts wind motion across the open space between the outlet of the pipe discharging the regulated material and the drain.
        - ii. When a closure device is used (e.g., securing a cap or plug on a drain that is not receiving regulated-material), the closure device shall be designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the drain opening and the closure device.
- j. The Stripper Feed Tank at No. 3 Evaporator, Hotwell at No. 2 Evaporator and the Pulp Mill Foul Condensate Tank will meet the following conditions: [Reg.19.304 and 40 C.F.R. § 63.446(d)(2)]
  - i. The fixed roof and all openings (e.g., access hatches, sampling ports, gauge wells) shall be designed and operated with no detectable leaks as indicated by an instrument reading of less than 500 parts per million above background, and vented into a closed-vent system that meets the requirements in § 63.450 and routed to a control device that meets the requirements in § 63.443(d); and

- ii. Each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that the tank contains pulping process condensates or any HAP removed from a pulping process condensate stream except when it is necessary to use the opening for sampling, removal, or for equipment inspection, maintenance, or repair.
- k. The permittee will treat the pulping system condensate listed in Plant Wide Condition 19e by discharging the condensate below the liquid surface of a biological treatment system and treating the condensate to reduce or destroy the total HAPs by at least 92 percent or more by weight or treating the condensate to remove 10.2 pounds or more of total HAP per ton of oven-dried pulp or achieve a total HAP concentration of 330 ppmw or less at the outlet of the control device. [Reg.19.304 and 40 C.F.R. § 63.446(e)(3) or (5)]
- l. Each HAP removed from a pulping process condensate stream during treatment and handling under 40 C.F.R. §§ 63.446(d) or (e), except for those treated according to paragraph 40 C.F.R. § 63.446(e)(2) of this section, shall be controlled as specified in § 63.443(c) and (d).
- m. For each control device (e.g. steam stripper system or other equipment serving the same function) used to treat pulping process condensates to comply with the requirements specified in 40 C.F.R. § 63.446(e)(3) through (e)(5), periods of excess emissions reported under § 63.455 shall not be a violation of 40 C.F.R. § 63.446(d), (e)(3) through (e)(5), and (f) provided that the time of excess emissions (including periods of startup, shutdown, or malfunction) divided by the total process operating time in a semi-annual reporting period does not exceed 10 percent. The 10 percent excess emissions allowance does not apply to treatment of pulping process condensates according to 40 C.F.R. § 63.446 (e)(2) of this section (e.g. the biological wastewater treatment system used to treat multiple (primarily non-condensate) wastewater streams to comply with the Clean Water Act).
- n. The permittee shall evaluate all new or modified pulping process condensates or changes in the annual bleached or non-bleached oven-dried pulp used to comply with paragraph 40 C.F.R. § 63.446(i) of this section, to determine if they meet the applicable requirements of this section.
- o. Each enclosure and closed-vent system specified in § 63.443(c) for capturing and transporting vent streams that contain HAP shall meet the requirements specified in 40 C.F.R. §§ 63.450(a) through (d). [Reg.19.304 and 40 C.F.R. § 63.450(a)]
- p. Each enclosure shall maintain negative pressure at each enclosure or hood opening as demonstrated by the procedures specified in § 63.457(e). Each

enclosure or hood opening closed during the initial performance test specified in § 63.457(a) shall be maintained in the same closed and sealed position as during the performance test at all times except when necessary to use the opening for sampling, inspection, maintenance, or repairs. [Reg.19.304 and 40 C.F.R. § 63.450(b)]

- q. Each component of the closed-vent system used to comply with §§ 63.443(c) that is operated at positive pressure and located prior to a control device shall be designed for and operated with no detectable leaks as indicated by an instrument reading of less than 500 parts per million by volume above background, as measured by the procedures specified in § 63.457(d). [Reg.19.304 and 40 C.F.R. § 63.450(c)]
- r. Each bypass line in the closed vent system that could divert vent streams containing HAP to the atmosphere without meeting the emission limitations in § 63.443 shall comply with either of the requirements in Plant Wide Conditions s and t. [Reg.19.304 and 40 C.F.R. § 63.450(d)]
- s. On each bypass line, the owner or operator shall install, calibrate, maintain, and operate according to manufacturer's specifications a flow indicator that provides a record of the presence of gas stream flow in the bypass line at least once every fifteen minutes. The flow indicator shall be installed in the bypass line in such a way as to indicate flow in the bypass line. [Reg.19.304 and 40 C.F.R. § 63.450(d)(1)]
- t. For bypass line valves that are not computer controlled, the owner or operator shall maintain the bypass line valve in the closed position with a car seal or a seal placed on the valve or closure mechanism in such a way that valve or closure mechanism cannot be opened without breaking the seal. [Reg.19.304 and 40 C.F.R. § 63.450(d)(2)]
- u. Each owner or operator subject to the standards specified in § 63.443(c) and (d), 63.444(b) and (c), 63.445(b) and (c), 63.446(c), (d), and (e), 63.447(b) or § 63.450(d), shall install, calibrate, certify, operate, and maintain according to the manufacturer's specifications, a continuous monitoring system (CMS, as defined in § 63.2 of this part) as specified in 40 C.F.R. § 63.453(b) through (m). The CMS shall include a continuous recorder. (Note: Some of the specific monitoring requirements may be contained in other parts of this permit.) [Reg.19.304 and 40 C.F.R. § 63.453(a)]
- v. For each enclosure opening, a visual inspection of the closure mechanism specified in § 63.450(b) shall be performed at least once every thirty days to ensure the opening is maintained in the closed position and sealed. [Reg.19.304 and 40 C.F.R. § 63.453(k)(1)]



- w. Each closed-vent system required by § 63.450(a) shall be visually inspected every 30 days and at other times as requested by the Administrator. The visual inspection shall include inspection of ductwork, piping, enclosures, and connections to covers for visible evidence of defects. [Reg.19.304 and 40 C.F.R. § 63.453(k)(2)]
- x. For positive pressure closed-vent systems or portions of closed-vent systems, the permittee shall demonstrate no detectable leaks as specified in § 63.450(c) measured initially and annually by the procedures specified in § 63.457(d). [Reg.19.304 and 40 C.F.R. § 63.453(k)(3)]
- y. The permittee shall demonstrate initially and annually that each enclosure opening is maintained at negative pressure as specified in § 63.457(e). [Reg.19.304 and 40 C.F.R. § 63.453(k)(4)]
- z. The valve or closure mechanism specified in § 63.450(d)(2) shall be inspected at least once every 30 days to ensure that the valve is maintained in the closed position and the emission point gas stream is not diverted through the bypass line. [Reg.19.304 and 40 C.F.R. § 63.453(k)(5)]
- aa. If an inspection required by 40 C.F.R. § 63.453(k)(1) through (k)(5) identifies visible defects in ductwork, piping, enclosures or connections to covers required by § 63.450, or if an instrument reading of 500 parts per million by volume or greater above background concentration is measured, or if enclosure openings are not maintained at negative pressure, then the following corrective actions shall be taken as soon as practicable. [Reg.19.304 and 40 C.F.R. § 63.453(k)(6)]
  - i. A first effort to repair or correct the closed-vent system shall be made as soon as practicable but no later than 5 calendar days after the problem is identified.
  - ii. The repair or corrective action shall be completed no later than fifteen calendar days after the problem is identified.
- bb. Each owner or operator using a control device, technique, or an alternative parameter other than those specified in 40 C.F.R. § 63.453(b) through (l) of this section shall install a CMS and establish appropriate operating parameters to be monitored that demonstrate, to the Administrator's satisfaction, continuous compliance with the applicable control requirements. [Reg.19.304 and 40 C.F.R. § 63.453(m)]
- cc. To establish or reestablish the value for each operating parameter required to be monitored under 40 C.F.R. § 63.453(b) through (j), (l), and (m) or to establish appropriate parameters for 40 C.F.R. § 63.453(f), (i), and (m), the permittee shall use the following procedures:

- i. During the initial performance test required in § 63.457(a) or any subsequent performance test, continuously record the operating parameter.
  - ii. Determinations shall be based on the control performance and parameter data monitored during the performance test, supplemented if necessary by engineering assessments and the manufacturer's recommendations.
  - iii. The owner or operator shall provide for the Administrator's approval the rationale for selecting the monitoring parameters necessary to comply with (f), (i), and (m) of this section; and
  - iv. Provide for the Administrator's approval, the rationale for the selected operating parameter value, monitoring frequency, and averaging time. Include all data and calculations used to develop the value and a description of why the value, monitoring frequency, and averaging time demonstrate continuous compliance with the applicable emission standard. [Reg.19.304 and 40 C.F.R. § 63.453(n)(1) through (n)(4)]
- dd. A control device subject to the monitoring provisions of this section shall operate the control device in a manner consistent with the minimum or maximum (as appropriate) operating parameter value or procedure required to be monitored under 40 C.F.R. § 63.453(a) through (n) and established under Subpart S. Except as provided in 40 C.F.R. § 63.453(p), § 63.443(e), or § 63.446(g), operation of the control device below the minimum operating parameter values or above maximum operating parameter values established under this subpart or failure to perform procedures required by this subpart shall constitute a violation of the applicable emission standard of this subpart and be reported as a period of excess emissions. [Reg.19.304 and 40 C.F.R. § 63.453(o)]

#### Clean Condensate Alternative Requirements

- 20. The permittee shall install and operate a clean condensate alternative technology with a continuous monitoring system to reduce total HAP emissions by reducing uncontrolled HAP emissions from the effluent treatment system to the levels indicated in Specific Condition #156.f. [Reg.19.304 and 40 C.F.R. § 63.447(b)]
- 21. The permittee shall install, calibrate, maintain and operate a CMS to monitor the total amount of methanol entering the effluent treatment system through the hardpiping header for pulping condensate listed under Plantwide Condition #19.i.2. [Reg.19.304 and 40 C.F.R. § 63.453(a)]
- 22. The permittee shall install, calibrate, operate and maintain a CMS to monitor the shower water quality to the HVLC sources within the facility covered under 40 C.F.R. § 63.443(a)(1)(ii) through § 63.443(a)(1)(v) to ensure the methanol concentration in these

streams does not increase beyond the ranges of normal operating variability. The CMS shall include lockout indicators or blanks that prevent foul condensates from entering the HVLC shower water systems. [Reg.19.304 and 40 C.F.R. § 63.453(a) and § 63.453(m)]

23. The permittee shall incorporate the CMS monitoring equipment for the clean condensate alternative into the record keeping required under Plantwide Conditions 24 through 26 for LVHC systems to ensure compliance with the more stringent condensate collection and treatment requirements. [Reg.19.304 and 40 C.F.R. § 63.453(a) and § 63.453(m)]

#### Recordkeeping Requirements

24. The permittee shall comply with the recordkeeping requirements of § 63.10 of subpart A of this part, as shown in Table 1, and the requirements specified in 40 C.F.R. § 63.454(b) and (d) for the monitoring parameters specified in § 63.453. [Reg.19.304 and 40 C.F.R. § 63.454(a)]
25. For each applicable enclosure opening, closed-vent system, and closed collection system, the permittee shall prepare and maintain a site-specific inspection plan including a drawing or schematic of the components of applicable affected equipment and shall record the following information for each inspection:
  - a. Date of inspection;
  - b. The equipment type and identification;
  - c. Results of negative pressure tests for enclosures;
  - d. Results of leak detection tests;
  - e. The nature of the defect or leak and the method of detection (i.e., visual inspection or instrument detection);
  - f. The date the defect or leak was detected and the date of each attempt to repair the defect or leak;
  - g. Repair methods applied in each attempt to repair the defect or leak;
  - h. The reason for the delay if the defect or leak is not repaired within 15 days after discovery;
  - i. The expected date of successful repair of the defect or leak;
  - j. The date of successful repair of the defect or leak;

- k. The position and duration of opening bypass line valves and the condition of any valve seals; and
  - l. The duration of the use of the bypass valves on computer controlled valves. [Reg.19.304 and 40 C.F.R. § 63.454(b)(1) through (b)(12)]
26. The permittee shall record the CMS parameters specified in § 63.453 and meet the requirements specified in 40 C.F.R. § 63.454 (a) for any new affected process equipment or pulping process condensate stream that becomes subject to the standards in this subpart due to a process change or modification. [Reg.19.304 and 40 C.F.R. § 63.454(d)]

#### Test Methods and Procedures

27. An initial performance test is required for all emission sources subject to the limitations in §§ 63.443, 63.444, 63.445, 63.446, and 63.447, except those controlled by a combustion device that is designed and operated as specified in § 63.443(d)(3) or (d)(4). [Reg.19.304 and §19.702 and 40 C.F.R. § 63.457(a)]
28. For incinerators and fuel burning equipment, exclusively, emissions shall not exceed 20% opacity except that emissions greater than 20% opacity but not exceeding 60% opacity will be allowed for not more than six (6) minutes in the aggregate in any consecutive 60-minute period, provided that such emissions will not be permitted more than three (3) times during any 24-hour period. [Reg.19.503(B)(1) and 40 C.F.R. § 52, Subpart E]

#### Chemical Accident Prevention Plan

29. The facility is an affected source under 40 C.F.R. § 68 and shall maintain a risk management plan pursuant (RMP) to this subpart. A copy of the RMP shall be kept onsite and be made available to Department personnel upon request. [Reg.19.304 and 40 C.F.R. § 68.150]

#### Softwood Mix Project Prevention of Significant Deterioration

The modification to change the woodchip mix to predominately softwood resulted in modifications to the NCG system collecting emissions from the 1B pulping line. This modification triggered PSD review including BACT limitations for Permit No. 287-AOP-R10 as follows:

30. The VOC in the gases collected from the 1B pulping line by the NCG system shall be reduced by 98% by routing to either the No. 2 Power Boiler (SN-05) or the No. 2 Lime Kiln (SN-09). In order to ensure that these two sources are operate in such a manner to achieve the required minimum destruction efficiency, the permittee shall be in compliance with Specific Conditions #56a, #56b, and #57 (SN-05) and Specific

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Conditions #101c and #101d (SN-09) at all times when combusting NCG. [Reg.19.901 *et seq.* and 40 C.F.R. § 52 Subpart E]

Permit Shield

31. Compliance with the conditions of this permit shall be deemed compliance with all applicable requirements, as of the date of permit issuance, included in and specifically identified in the following table of this condition. The permit specifically identifies the following as applicable requirements based upon the information submitted by the permittee in an application dated December 19, 2014.

Applicable Regulations

Source No.	Regulation	Description
Facility	18	Arkansas Pollution Control Code
Facility	19	SIP
Facility	26	Regulations of the Arkansas Operating Air Permit Program (Title V)
Facility	40 C.F.R. §52.21	Prevention of Significant Deterioration
Facility	40 C.F.R. § 63, Subpart S	NESHAPS for Hazardous Air Pollutants from the Pulp and Paper Industry
Facility	40 C.F.R. § 60, Subpart A	General Provisions
Facility	40 C.F.R. § 64	Compliance Assurance Monitoring
Facility	40 C.F.R. § 68	Chemical Accident Prevention Plan
02, 05, 06, 08, 09, 14, 15	40 C.F.R. § 60, Subpart BB	Standards of Performance for Kraft Pulp Mills
05	40 C.F.R. § 60, Subpart D	Standards of Performance for Fossil-Fuel-Fired Steam Generators for Which Construction Is Commenced after August 17, 1971
01, 06, 14	40 C.F.R. § 60, Subpart Db	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units

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Source No.	Regulation	Description
23	40 C.F.R. § 60, Subpart Kb	Standards of Performance for Storage Vessels for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984
02, 06, 08, 09, 14	40 C.F.R. § 63, Subpart MM	NESHAPS for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfitic and Stand-Alone Semichemical Pulp Mills
50, 51, , 53, 54a, 54b, and SN-57	40 C.F.R. § 63, Subpart ZZZZ	NESHAP for Reciprocating Internal Combustion Engines
58	40 C.F.R. Subpart IIII	Standards of Performance for Compression Ignition Internal Combustion Engines

**SECTION VII: INSIGNIFICANT ACTIVITIES**

The following sources are insignificant activities. Any activity that has a state or federal applicable requirement shall be considered a significant activity even if this activity meets the criteria of Reg.26.304 or listed in the table below. Insignificant activity determinations rely upon the information submitted by the permittee in an application dated October 1, 2012.

Description	Category
250 gal lubricating/hydraulic oil tanks (5,000 gal site wide)	A2
Used Oil Storage Tank (10,000 gal)	A3
Wood Yard Diesel Tank (9,425 gal)	A3
Wood Yard Hydraulic Oil Tank (9,425 gal)	A3
Emergency Generator Tank (1,000 gal)	A3
Landfill Diesel Tank (2,961 gal)	A3
Ash Pond Diesel Tank (1,034 gal)	A3
Coal Unloading Pump Diesel Tank (131 gal)	A3
Brock Services Diesel Tank (552 gal)	A3
Paper Machine Tank (147 gal)	A3
Truck Wood West Diesel Tank (264 gal)	A3
Truck Wood West Diesel Tank (576 gal)	A3
Truck Wood West Diesel Tank (1,762 gal)	A3
#2 Water Pump Diesel Tank (300 gal)	A3
#6 Water Pump Diesel Tank (302 gal)	A3
#8 Water Pump Diesel Tank (658 gal)	A3
Brock Services Mobile Tank (diesel, 264 gal)	A3
Paper Machine Portable Tote Bins	A3
Caustic Storage Tanks	A4
Laboratory Hoods	A5
Mill Services (storeroom) gasoline Tank (9,425 gal)	A13
Converting Area Adhesives and Glues	A13
Brock Services Gasoline Tank (552 gal)	A13
Coal Pile	A13
Turpentine Storage Tank (18,612 gal)	A13
Cooling Tower (#3 EVAP)	A13
Cooling Tower (Water Plant North Tower)	A13
Cooling Tower (Water Plant South Tower)	A13
Cooling Tower (R-8 Tower ERCO)	A13
Cooling Tower (SVP Tower)	A13
Cooling Tower (No. 62 Tower)	A13
Cooling Tower (BAC 3642 Tower 61 PM Converting)	A13
Cooling Tower (61 PM Ground)	A13
Cooling Tower (63 PM)	A13
Cooling Tower (Pulp Mill MCC)	A13
Cooling Tower (Admin)	A13

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Description	Category
Cooling Tower (No. 4 Turbine Generator Tower)	A13
Cooling Tower (No. 64 Tower)	A13
Cooling Tower (Vacuum Pump Tower)	A13
Cooling Tower (ECF Conversion Tower)	A13



## SECTION VIII: GENERAL PROVISIONS

1. Any terms or conditions included in this permit which specify and reference Arkansas Pollution Control & Ecology Commission Regulation 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 Regulation 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 Regulation 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 Reg.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 Department takes final action on the renewal application. The Department will not necessarily notify the permittee when the permit renewal application is due. [Reg.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 Reg.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 Reg.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 Reg.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 Reg.26.2 must certify all required reports. The permittee will send the reports to the address below:

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

[40 C.F.R. § 70.6(a)(3)(iii)(A) and Reg.26.701(C)(3)(a)]

8. The permittee shall report to the Department all deviations from permit requirements, including those attributable to upset conditions as defined in the permit.
  - a. For all upset conditions (as defined in Reg.19.601), the permittee will make an initial report to the Department 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 Department 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.

[Reg.19.601, Reg.19.602, Reg.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 Regulation are declared to be separable and severable. [40 C.F.R. § 70.6(a)(5), Reg.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 Regulation 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 Reg.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 Reg.26.701(F)(2)]
12. The Department 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 Reg.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 Reg.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 Department 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 Reg.26.701(F)(5)]
15. The permittee must pay all permit fees in accordance with the procedures established in Regulation 9. [40 C.F.R. § 70.6(a)(7) and Reg.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 Reg.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 Reg.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 Department 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 Reg.26.702(A) and (B)]
19. Any document (including reports) required by this permit must contain a certification by a responsible official as defined in Reg.26.2. [40 C.F.R. § 70.6(c)(1) and Reg.26.703(A)]
20. The permittee must allow an authorized representative of the Department, upon presentation of credentials, to perform the following: [40 C.F.R. § 70.6(c)(2) and Reg.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 Department. All compliance certifications required by this permit must include the following: [40 C.F.R. § 70.6(c)(5) and Reg.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 Department 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: [Reg.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 Department approval. The Department 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.

[Reg.18.314(A), Reg.19.416(A), Reg.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 Department approval. Any such emissions shall be included in the facility's total emissions and reported as such. The Department 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 Department 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.

[Reg.18.314(B), Reg.19.416(B), Reg.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 Department approval. The Department 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.

[Reg.18.314(C), Reg.19.416(C), Reg.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]

Appendix A

40 CFR 60, Subpart Db, *Standards of Performance for Industrial-Commercial-Institutional  
Steam Generating Units*





## ELECTRONIC CODE OF FEDERAL REGULATIONS

e-CFR Data is current as of October 14, 2013

Title 40: Protection of Environment

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

### Subpart Db—Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units

#### Contents

- §60.40b Applicability and delegation of authority.
- §60.41b Definitions.
- §60.42b Standard for sulfur dioxide (SO<sub>2</sub>).
- §60.43b Standard for particulate matter (PM).
- §60.44b Standard for nitrogen oxides (NO<sub>x</sub>).
- §60.45b Compliance and performance test methods and procedures for sulfur dioxide.
- §60.46b Compliance and performance test methods and procedures for particulate matter and nitrogen oxides.
- §60.47b Emission monitoring for sulfur dioxide.
- §60.48b Emission monitoring for particulate matter and nitrogen oxides.
- §60.49b Reporting and recordkeeping requirements.

SOURCE: 72 FR 32742, June 13, 2007, unless otherwise noted.

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#### **§60.40b Applicability and delegation of authority.**

(a) The affected facility to which this subpart applies is each steam generating unit that commences construction, modification, or reconstruction after June 19, 1984, and that has a heat input capacity from fuels combusted in the steam generating unit of greater than 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/hr)).

(b) Any affected facility meeting the applicability requirements under paragraph (a) of this section and commencing construction, modification, or reconstruction after June 19, 1984, but on or before June 19, 1986, is subject to the following standards:

(1) Coal-fired affected facilities having a heat input capacity between 29 and 73 MW (100 and 250 MMBtu/hr), inclusive, are subject to the particulate matter (PM) and nitrogen oxides (NO<sub>x</sub>) standards under this subpart.

(2) Coal-fired affected facilities having a heat input capacity greater than 73 MW (250 MMBtu/hr) and meeting the applicability requirements under subpart D (Standards of performance for fossil-fuel-fired steam generators; §60.40) are subject to the PM and NO<sub>x</sub> standards under this subpart and to the sulfur dioxide (SO<sub>2</sub>) standards under subpart D (§60.43).

(3) Oil-fired affected facilities having a heat input capacity between 29 and 73 MW (100 and 250 MMBtu/hr), inclusive, are subject to the NO<sub>x</sub> standards under this subpart.

(4) Oil-fired affected facilities having a heat input capacity greater than 73 MW (250 MMBtu/hr) and meeting the applicability requirements under subpart D (Standards of performance for fossil-fuel-fired steam generators; §60.40) are also subject to the NO<sub>x</sub> standards under this subpart and the PM and SO<sub>2</sub> standards under subpart D (§60.42 and §60.43).

(c) 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.

(d) Affected facilities that also meet the applicability requirements under subpart E (Standards of performance for incinerators; §60.50) are subject to the NO<sub>x</sub> and PM standards under this subpart.

(e) Steam generating units meeting the applicability requirements under subpart Da (Standards of performance for electric utility steam generating units; §60.40Da) are not subject to this subpart.

(f) Any change to an existing steam generating unit for the sole purpose of combusting gases containing total reduced sulfur (TRS) as defined under §60.281 is not considered a modification under §60.14 and the steam generating unit is not subject to this subpart.

(g) In delegating implementation and enforcement authority to a State under section 111(c) of the Clean Air Act, the following authorities shall be retained by the Administrator and not transferred to a State.

(1) Section 60.44b(f).

(2) Section 60.44b(g).

(3) Section 60.49b(a)(4).

(h) Any affected facility that meets the applicability requirements and is subject to subpart Ea, subpart Eb, subpart AAAA, or subpart CCCC of this part is not subject to this subpart.

(i) Affected facilities (*i.e.*, heat recovery steam generators) that are associated with stationary combustion turbines and that 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 affected facilities (*i.e.* heat recovery steam generators with duct burners) that are capable of combusting more than 29 MW (100 MMBtu/h) heat input of fossil fuel. If the affected facility (*i.e.* heat recovery steam generator) 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.)

(j) Any affected facility meeting the applicability requirements under paragraph (a) of this section and commencing construction, modification, or reconstruction after June 19, 1986 is not subject to subpart D (Standards of Performance for Fossil-Fuel-Fired Steam Generators, §60.40).

(k) Any affected facility that meets the applicability requirements and is subject to an EPA approved State or Federal section 111(d)/129 plan implementing subpart Cb or subpart BBBB of this part is not covered by this subpart.

(l) Affected facilities that also meet the applicability requirements under subpart BB of this part (Standards of Performance for Kraft Pulp Mills) are subject to the SO<sub>2</sub> and NO<sub>x</sub> standards under this subpart and the PM standards under subpart BB.

(m) Temporary boilers are not subject to this subpart.

[72 FR 32742, June 13, 2007, as amended at 74 FR 5084, Jan. 28, 2009; 77 FR 9459, Feb. 16, 2012]

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#### **§60.41b 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 the fuels listed in §60.42b(a), §60.43b(a), or §60.44b(a), as applicable, during a calendar year and the potential heat input to the steam generating unit had it been operated for 8,760 hours during a calendar year at the maximum steady state 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 in a calendar year.

*Byproduct/waste* means any liquid or gaseous substance produced at chemical manufacturing plants, petroleum refineries, or pulp and paper mills (except natural gas, distillate oil, or residual oil) and combusted in a steam generating unit for heat recovery or for disposal. Gaseous substances with carbon dioxide (CO<sub>2</sub>) levels greater than 50 percent or carbon monoxide levels greater than 10 percent are not byproduct/waste for the purpose of this subpart.

*Chemical manufacturing plants* mean industrial plants that are classified by the Department of Commerce under Standard Industrial Classification (SIC) Code 28.

*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, including but not limited to solvent refined coal, gasified coal not meeting the definition of natural gas, coal-oil mixtures, coke oven gas, and coal-water mixtures, are also included in this definition for the purposes of this subpart.

*Coal refuse* means any byproduct 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 kJ/kg (6,000 Btu/lb) on a dry basis.

*Cogeneration*, also known as combined heat and power, means a facility that simultaneously produces both electric (or mechanical) and useful thermal energy from the same primary energy source.

*Coke oven gas* means the volatile constituents generated in the gaseous exhaust during the carbonization of bituminous coal to form coke.

*Combined cycle system* means a system in which a separate source, such as a gas turbine, internal combustion engine, kiln, etc., provides exhaust gas to a steam generating unit.

*Conventional technology* means wet flue gas desulfurization (FGD) technology, dry FGD technology, atmospheric fluidized bed combustion technology, and oil hydrodesulfurization technology.

*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 §60.17), diesel fuel oil numbers 1 and 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 downstream of the steam generating unit and 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 slurries or solutions used in dry flue gas desulfurization technology include but are not limited to lime and sodium.

*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 facility has applied to the Administrator and received approval to operate as an emerging technology under §60.49b(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 combustion of fuel in a bed or series of beds (including but not limited to bubbling bed units and circulating bed units) of limestone aggregate (or

other sorbent materials) in which these materials are forced upward by the flow of combustion air and the gaseous products of combustion.

*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.

*Full capacity* means operation of the steam generating unit at 90 percent or more of the maximum steady-state design heat input capacity.

*Gaseous fuel* means any fuel that is a gas at ISO conditions. This includes, but is not limited to, natural gas and gasified coal (including coke oven gas).

*Gross output* means the gross useful work performed by the steam generated. For units generating only electricity, the gross useful work performed is the gross electrical output from the turbine/generator set. For cogeneration units, the gross useful work performed is the gross electrical or mechanical output plus 75 percent of the useful thermal output measured relative to ISO conditions that is not used to generate additional electrical or mechanical output or to enhance the performance of the unit (*i.e.*, steam delivered to an industrial process).

*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 gas turbines, internal combustion engines, kilns, etc.

*Heat release rate* means the steam generating unit design heat input capacity (in MW or Btu/hr) divided by the furnace volume (in cubic meters or cubic feet); the furnace volume is that volume bounded by the front furnace wall where the burner is located, the furnace side waterwall, and extending to the level just below or in front of the first row of convection pass tubes.

*Heat transfer medium* means any material that is used to transfer heat from one point to another point.

*High heat release rate* means a heat release rate greater than 730,000 J/sec-m<sup>3</sup> (70,000 Btu/hr-ft<sup>3</sup>).

*ISO Conditions* means a temperature of 288 Kelvin, a relative humidity of 60 percent, and a pressure of 101.3 kilopascals.

*Lignite* means a type of coal classified as lignite A or lignite B by the American Society of Testing and Materials in ASTM D388 (incorporated by reference, see §60.17).

*Low heat release rate* means a heat release rate of 730,000 J/sec-m<sup>3</sup> (70,000 Btu/hr-ft<sup>3</sup>) or less.

*Mass-feed stoker steam generating unit* means a steam generating unit where solid fuel is introduced directly into a retort or is fed directly onto a grate where it is combusted.

*Maximum heat input capacity* means the ability of a steam generating unit to combust a stated maximum amount of fuel on a steady state basis, as determined by the physical design and characteristics of the steam generating unit.

*Municipal-type solid waste* means refuse, more than 50 percent of which is waste consisting of a mixture of paper, wood, yard wastes, food wastes, plastics, leather, rubber, and other combustible materials, and noncombustible materials such as glass and rock.

*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 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 and residual oil.

*Petroleum refinery* means industrial plants as classified by the Department of Commerce under Standard Industrial Classification (SIC) Code 29.

*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. For gasified coal or oil that is desulfurized prior to combustion, the *Potential sulfur dioxide emission rate* is the theoretical SO<sub>2</sub> emissions (ng/J or lb/MMBtu heat input) that would result from combusting fuel in a cleaned state without using any post combustion 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.

*Pulp and paper mills* means industrial plants that are classified by the Department of Commerce under North American Industry Classification System (NAICS) Code 322 or Standard Industrial Classification (SIC) Code 26.

*Pulverized coal-fired steam generating unit* means a steam generating unit in which pulverized coal is introduced into an air stream that carries the coal to the combustion chamber of the steam generating unit where it is fired in suspension. This includes both conventional pulverized coal-fired and micropulverized coal-fired steam generating units. Residual oil means crude oil, fuel oil numbers 1 and 2 that have a nitrogen content greater than 0.05 weight percent, and all fuel oil numbers 4, 5 and 6, as defined by the American Society of Testing and Materials in ASTM D396 (incorporated by reference, see §60.17).

*Spreader stoker steam generating unit* means a steam generating unit in which solid fuel is introduced to the combustion zone by a mechanism that throws the fuel onto a grate from above. Combustion takes place both in suspension and on the grate.

*Steam generating unit* means a device that combusts any fuel or byproduct/waste and produces steam or heats water or heats any heat transfer medium. This term includes any municipal-type solid waste incinerator with a heat recovery steam generating unit or any steam generating unit that combusts fuel and is part of a cogeneration system or a combined cycle system. This term does not include process heaters as they are 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 any gaseous or liquid fuel-fired steam generating unit 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 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.

*Very low sulfur oil* means for units constructed, reconstructed, or modified on or before February 28, 2005, oil that contains no more than 0.5 weight percent sulfur or that, when combusted without SO<sub>2</sub> emission control, has a SO<sub>2</sub> emission rate equal to or less than 215 ng/J (0.5 lb/MMBtu) heat

input. For units constructed, reconstructed, or modified after February 28, 2005 and not located in a noncontinental area, *very low sulfur oil* means oil that contains no more than 0.30 weight percent sulfur or that, when combusted without SO<sub>2</sub> emission control, has a SO<sub>2</sub> emission rate equal to or less than 140 ng/J (0.32 lb/MMBtu) heat input. For units constructed, reconstructed, or modified after February 28, 2005 and located in a noncontinental area, *very low sulfur oil* means oil that contains no more than 0.5 weight percent sulfur or that, when combusted without SO<sub>2</sub> emission control, has a SO<sub>2</sub> emission rate equal to or less than 215 ng/J (0.50 lb/MMBtu) heat input.

*Wet flue gas desulfurization technology* means a SO<sub>2</sub> control system that is located downstream of the steam generating unit and removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gas with an alkaline slurry or solution and forming a liquid material. This definition applies to devices where the aqueous liquid material product of this contact is subsequently converted to other forms. Alkaline reagents used in wet flue gas desulfurization technology include, but are not limited to, lime, limestone, and sodium.

*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 32742, June 13, 2007, as amended at 74 FR 5084, Jan. 28, 2009; 77 FR 9459, Feb. 16, 2012]

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#### **§60.42b Standard for sulfur dioxide (SO<sub>2</sub>).**

(a) Except as provided in paragraphs (b), (c), (d), or (j) of this section, on and after the date on which the performance test is completed or required to be completed under §60.8, whichever 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 oil shall cause to be discharged into the atmosphere any gases that contain SO<sub>2</sub> in excess of 87 ng/J (0.20 lb/MMBtu) or 10 percent (0.10) of the potential SO<sub>2</sub> emission rate (90 percent reduction) and the emission limit determined according to the following formula:

$$E_s = \frac{(K_a H_a + K_b H_b)}{(H_a + H_b)}$$

Where:

E<sub>s</sub> = SO<sub>2</sub> emission limit, in ng/J or lb/MMBtu heat input;

K<sub>a</sub> = 520 ng/J (or 1.2 lb/MMBtu);

K<sub>b</sub> = 340 ng/J (or 0.80 lb/MMBtu);

H<sub>a</sub> = Heat input from the combustion of coal, in J (MMBtu); and

H<sub>b</sub> = Heat input from the combustion of oil, in J (MMBtu).

For 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 in this paragraph. No credit is provided for the heat input to the affected facility from the combustion of natural gas, wood, municipal-type solid waste, or other fuels or heat derived from exhaust gases from other sources, such as gas turbines, internal combustion engines, kilns, etc.

(b) On and after the date on which the 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 refuse alone in a fluidized bed combustion steam generating unit shall cause to be discharged into the atmosphere any gases that contain SO<sub>2</sub> in excess of 87 ng/J (0.20 lb/MMBtu) or 20 percent (0.20) of the potential SO<sub>2</sub> emission rate (80 percent reduction) and 520 ng/J (1.2 lb/MMBtu) heat input. If coal or oil is fired with coal refuse, the affected facility is subject to paragraph (a) or (d) of this section, as applicable. For 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 in this paragraph. No credit is

provided for the heat input to the affected facility from the combustion of natural gas, wood, municipal-type solid waste, or other fuels or heat derived from exhaust gases from other sources, such as gas turbines, internal combustion engines, kilns, etc.

(c) On and after the date on which the performance test is completed or is required to be completed under §60.8, whichever comes first, no owner or operator of an affected facility that combusts coal or oil, either alone or in combination with any other fuel, and that uses an emerging technology for the control of SO<sub>2</sub> emissions, shall cause to be discharged into the atmosphere any gases that contain SO<sub>2</sub> in excess of 50 percent of the potential SO<sub>2</sub> emission rate (50 percent reduction) and that contain SO<sub>2</sub> in excess of the emission limit determined according to the following formula:

$$E_s = \frac{(K_c H_c + K_d H_d)}{(H_c + H_d)}$$

Where:

E<sub>s</sub> = SO<sub>2</sub> emission limit, in ng/J or lb/MM Btu heat input;

K<sub>c</sub> = 260 ng/J (or 0.60 lb/MMBtu);

K<sub>d</sub> = 170 ng/J (or 0.40 lb/MMBtu);

H<sub>c</sub> = Heat input from the combustion of coal, in J (MMBtu); and

H<sub>d</sub> = Heat input from the combustion of oil, in J (MMBtu).

For 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 in this paragraph. No credit is provided for the heat input to the affected facility from the combustion of natural gas, wood, municipal-type solid waste, or other fuels, or from the heat input derived from exhaust gases from other sources, such as gas turbines, internal combustion engines, kilns, etc.

(d) On and after the date on which the performance test is completed or required to be completed under §60.8, whichever comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before February 28, 2005 and listed in paragraphs (d)(1), (2), (3), or (4) of this section shall cause to be discharged into the atmosphere any gases that contain SO<sub>2</sub> in excess of 520 ng/J (1.2 lb/MMBtu) heat input if the affected facility combusts coal, or 215 ng/J (0.5 lb/MMBtu) heat input if the affected facility combusts oil other than very low sulfur oil. Percent reduction requirements are not applicable to affected facilities under paragraphs (d)(1), (2), (3) or (4) of this section. For facilities complying with paragraphs (d)(1), (2), or (3) of this section, only the heat input supplied to the affected facility from the combustion of coal and oil is counted in this paragraph. No credit is provided for the heat input to the affected facility from the combustion of natural gas, wood, municipal-type solid waste, or other fuels or heat derived from exhaust gases from other sources, such as gas turbines, internal combustion engines, kilns, etc.

(1) Affected facilities that have an annual capacity factor for coal and oil of 30 percent (0.30) or less and are subject to a federally enforceable permit limiting the operation of the affected facility to an annual capacity factor for coal and oil of 30 percent (0.30) or less;

(2) Affected facilities located in a noncontinental area; or

(3) Affected facilities combusting coal or oil, alone or in combination with any fuel, 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 and oil in the duct burner and 70 percent (0.70) or more of the heat entering the steam generating unit is from the exhaust gases entering the duct burner; or

(4) The affected facility burns coke oven gas alone or in combination with natural gas or very low sulfur distillate oil.

(e) Except as provided in paragraph (f) of this section, compliance with the emission limits, fuel oil sulfur limits, and/or percent reduction requirements under this section are determined on a 30-day rolling average basis.

(f) Except as provided in paragraph (j)(2) of this section, compliance with the emission limits or fuel oil sulfur limits under this section is determined on a 24-hour average basis for affected facilities

that (1) have a federally enforceable permit limiting the annual capacity factor for oil to 10 percent or less, (2) combust only very low sulfur oil, and (3) do not combust any other fuel.

(g) Except as provided in paragraph (i) of this section and §60.45b(a), the SO<sub>2</sub> emission limits and percent reduction requirements under this section apply at all times, including periods of startup, shutdown, and malfunction.

(h) Reductions in the potential SO<sub>2</sub> emission rate through fuel pretreatment are not credited toward the percent reduction requirement under paragraph (c) of this section unless:

(1) Fuel pretreatment results in a 50 percent or greater reduction in potential SO<sub>2</sub> emissions and

(2) Emissions from the pretreated fuel (without combustion or post-combustion SO<sub>2</sub> control) are equal to or less than the emission limits specified in paragraph (c) of this section.

(i) An affected facility subject to paragraph (a), (b), or (c) of this section may combust very low sulfur oil or natural gas when the SO<sub>2</sub> control system is not being operated because of malfunction or maintenance of the SO<sub>2</sub> control system.

(j) Percent reduction requirements are not applicable to affected facilities combusting only very low sulfur oil. The owner or operator of an affected facility combusting very low sulfur oil shall demonstrate that the oil meets the definition of very low sulfur oil by: (1) Following the performance testing procedures as described in §60.45b(c) or §60.45b(d), and following the monitoring procedures as described in §60.47b(a) or §60.47b(b) to determine SO<sub>2</sub> emission rate or fuel oil sulfur content; or (2) maintaining fuel records as described in §60.49b(r).

(k)(1) Except as provided in paragraphs (k)(2), (k)(3), and (k)(4) of this section, 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, natural gas, a mixture of these fuels, or a mixture of these fuels with any other fuels shall cause to be discharged into the atmosphere any gases that contain SO<sub>2</sub> in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 8 percent (0.08) of the potential SO<sub>2</sub> emission rate (92 percent reduction) and 520 ng/J (1.2 lb/MMBtu) heat input. For facilities complying with the percent reduction standard and paragraph (k)(3) of this section, only the heat input supplied to the affected facility from the combustion of coal and oil is counted in paragraph (k) of this section. No credit is provided for the heat input to the affected facility from the combustion of natural gas, wood, municipal-type solid waste, or other fuels or heat derived from exhaust gases from other sources, such as gas turbines, internal combustion engines, kilns, etc.

(2) Units firing only very low sulfur oil, gaseous fuel, a mixture of these fuels, or a mixture of these fuels with any other fuels with a potential SO<sub>2</sub> emission rate of 140 ng/J (0.32 lb/MMBtu) heat input or less are exempt from the SO<sub>2</sub> emissions limit in paragraph (k)(1) of this section.

(3) Units that are located in a noncontinental area and that combust coal, oil, or natural gas shall not discharge any gases that contain SO<sub>2</sub> in excess of 520 ng/J (1.2 lb/MMBtu) heat input if the affected facility combusts coal, or 215 ng/J (0.50 lb/MMBtu) heat input if the affected facility combusts oil or natural gas.

(4) As an alternative to meeting the requirements under paragraph (k)(1) of this section, modified facilities that combust coal or a mixture of coal with other fuels shall not cause to be discharged into the atmosphere 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) and 520 ng/J (1.2 lb/MMBtu) heat input.

[72 FR 32742, June 13, 2007, as amended at 74 FR 5084, Jan. 28, 2009; 76 FR 3523, Jan. 20, 2011]

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#### **§60.43b Standard for particulate matter (PM).**

(a) On and after the date on which the initial performance test is completed or is required to be completed under §60.8, whichever 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, 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, (i) If the affected facility combusts only coal, or
  - (ii) If the affected facility combusts coal and 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 and other fuels and 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.
- (3) 86 ng/J (0.20 lb/MMBtu) heat input if the affected facility combusts coal or coal and other fuels and
  - (i) Has an annual capacity factor for coal or coal and other fuels of 30 percent (0.30) or less,
  - (ii) Has a maximum heat input capacity of 73 MW (250 MMBtu/hr) or less,
  - (iii) Has a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor of 30 percent (0.30) or less for coal or coal and other solid fuels, and
  - (iv) Construction of the affected facility commenced after June 19, 1984, and before November 25, 1986.
- (4) An affected facility burning coke oven gas alone or in combination with other fuels not subject to a PM standard under §60.43b and not using a post-combustion technology (except a wet scrubber) for reducing PM or SO<sub>2</sub> emissions is not subject to the PM limits under §60.43b(a).
- (b) On and after the date on which the performance test is completed or required to be completed under §60.8, whichever comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before February 28, 2005, and that combusts oil (or mixtures of oil with other fuels) and uses a conventional or emerging technology to reduce SO<sub>2</sub> emissions 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.
- (c) On and after the date on which the initial performance test is completed or is required to be completed under §60.8, whichever comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before February 28, 2005, and that combusts wood, or wood with other fuels, except coal, shall cause to be discharged from that affected facility any gases that contain PM in excess of the following emission limits:
  - (1) 43 ng/J (0.10 lb/MMBtu) heat input if the affected facility has an annual capacity factor greater than 30 percent (0.30) for wood.
  - (2) 86 ng/J (0.20 lb/MMBtu) heat input if (i) The affected facility has an annual capacity factor of 30 percent (0.30) or less for wood;
    - (ii) Is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor of 30 percent (0.30) or less for wood; and
    - (iii) Has a maximum heat input capacity of 73 MW (250 MMBtu/hr) or less.
  - (d) 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 combusts municipal-type solid waste or mixtures of municipal-type solid waste with other fuels, 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) 43 ng/J (0.10 lb/MMBtu) heat input;
      - (i) If the affected facility combusts only municipal-type solid waste; or
      - (ii) If the affected facility combusts municipal-type solid waste and other fuels and has an annual capacity factor for the other fuels of 10 percent (0.10) or less.

(2) 86 ng/J (0.20 lb/MMBtu) heat input if the affected facility combusts municipal-type solid waste or municipal-type solid waste and other fuels; and

(i) Has an annual capacity factor for municipal-type solid waste and other fuels of 30 percent (0.30) or less;

(ii) Has a maximum heat input capacity of 73 MW (250 MMBtu/hr) or less;

(iii) Has a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor of 30 percent (0.30) or less for municipal-type solid waste, or municipal-type solid waste and other fuels; and

(iv) Construction of the affected facility commenced after June 19, 1984, but on or before November 25, 1986.

(e) For the purposes of this section, the annual capacity factor is determined by dividing the actual heat input to the steam generating unit during the calendar year from the combustion of coal, wood, or municipal-type solid waste, and other fuels, as applicable, by the potential heat input to the steam generating unit if the steam generating unit had been operated for 8,760 hours at the maximum heat input capacity.

(f) 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 combusts coal, oil, wood, or mixtures of these fuels with any other fuels shall cause to be discharged into the atmosphere 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. An owner or operator of an affected facility that elects to install, calibrate, maintain, and operate a continuous emissions monitoring system (CEMS) for measuring PM emissions according to the requirements of this subpart and is subject to a federally enforceable PM limit of 0.030 lb/MMBtu or less is exempt from the opacity standard specified in this paragraph.

(g) The PM and opacity standards apply at all times, except during periods of startup, shutdown, or malfunction.

(h)(1) Except as provided in paragraphs (h)(2), (h)(3), (h)(4), (h)(5), and (h)(6) of this section, 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 commenced 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 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,

(2) As an alternative to meeting the requirements of paragraph (h)(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, 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 maximum heat input capacity of 73 MW (250 MMBtu/h) or less 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) 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 maximum heat input capacity greater than 73 MW (250 MMBtu/h)

shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of 37 ng/J (0.085 lb/MMBtu) heat input.

(5) 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, an owner or operator of an affected facility not located in a noncontinental area that commences construction, reconstruction, or modification after February 28, 2005, and that combusts only oil that contains no more than 0.30 weight percent sulfur, coke oven gas, a mixture of these fuels, or either fuel (or a mixture of these fuels) in combination with other fuels not subject to a PM standard in §60.43b and not using a post-combustion technology (except a wet scrubber) to reduce SO<sub>2</sub> or PM emissions is not subject to the PM limits in (h)(1) of this section.

(6) 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, an owner or operator of an affected facility located in a noncontinental area that commences construction, reconstruction, or modification after February 28, 2005, and that combusts only oil that contains no more than 0.5 weight percent sulfur, coke oven gas, a mixture of these fuels, or either fuel (or a mixture of these fuels) in combination with other fuels not subject to a PM standard in §60.43b and not using a post-combustion technology (except a wet scrubber) to reduce SO<sub>2</sub> or PM emissions is not subject to the PM limits in (h)(1) of this section.

[72 FR 32742, June 13, 2007, as amended at 74 FR 5084, Jan. 28, 2009; 77 FR 9459, Feb. 16, 2012]

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#### §60.44b Standard for nitrogen oxides (NO<sub>x</sub>).

(a) Except as provided under paragraphs (k) and (l) of this section, 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 is subject to the provisions of this section and that combusts only coal, oil, or natural gas shall cause to be discharged into the atmosphere from that affected facility any gases that contain NO<sub>x</sub> (expressed as NO<sub>2</sub>) in excess of the following emission limits:

Fuel/steam generating unit type	Nitrogen oxide emission limits (expressed as NO <sub>2</sub> ) heat input	
	ng/J	lb/MMBTu
(1) Natural gas and distillate oil, except (4):		
(i) Low heat release rate	43	0.10
(ii) High heat release rate	86	0.20
(2) Residual oil:		
(i) Low heat release rate	130	0.30
(ii) High heat release rate	170	0.40
(3) Coal:		
(i) Mass-feed stoker	210	0.50
(ii) Spreader stoker and fluidized bed combustion	260	0.60
(iii) Pulverized coal	300	0.70
(iv) Lignite, except (v)	260	0.60
(v) Lignite mined in North Dakota, South Dakota, or Montana and combusted in a slag tap furnace	340	0.80
(vi) Coal-derived synthetic fuels	210	0.50
(4) Duct burner used in a combined cycle system:		
(i) Natural gas and distillate oil	86	0.20
(ii) Residual oil	170	0.40

(b) Except as provided under paragraphs (k) and (l) of this section, 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 simultaneously combusts mixtures of only coal, oil, or natural gas shall cause to be discharged into the atmosphere from that affected facility any gases that contain NO<sub>x</sub> in excess of a limit determined by the use of the following formula:

$$E_n = \frac{(EL_g H_g) + (EL_o H_o) + (EL_c H_c)}{(H_g + H_o + H_c)}$$

Where:

$E_n$  = NO<sub>x</sub> emission limit (expressed as NO<sub>2</sub>), ng/J (lb/MMBtu);

$EL_{go}$  = Appropriate emission limit from paragraph (a)(1) for combustion of natural gas or distillate oil, ng/J (lb/MMBtu);

$H_{go}$  = Heat input from combustion of natural gas or distillate oil, J (MMBtu);

$EL_{ro}$  = Appropriate emission limit from paragraph (a)(2) for combustion of residual oil, ng/J (lb/MMBtu);

$H_{ro}$  = Heat input from combustion of residual oil, J (MMBtu);

$EL_c$  = Appropriate emission limit from paragraph (a)(3) for combustion of coal, ng/J (lb/MMBtu); and

$H_c$  = Heat input from combustion of coal, J (MMBtu).

(c) Except as provided under paragraph (d) and (l) of this section, 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 simultaneously combusts coal or oil, natural gas (or any combination of the three), and wood, or any other fuel shall cause to be discharged into the atmosphere any gases that contain NO<sub>x</sub> in excess of the emission limit for the coal, oil, natural gas (or any combination of the three), combusted in the affected facility, as determined pursuant to paragraph (a) or (b) of this section. This standard does not apply to an affected facility that is subject to and in compliance with a federally enforceable requirement that limits operation of the affected facility to an annual capacity factor of 10 percent (0.10) or less for coal, oil, natural gas (or any combination of the three).

(d) 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 simultaneously combusts natural gas and/or distillate oil with a potential SO<sub>2</sub> emissions rate of 26 ng/J (0.060 lb/MMBtu) or less with wood, municipal-type solid waste, or other solid fuel, except coal, shall cause to be discharged into the atmosphere from that affected facility any gases that contain NO<sub>x</sub> in excess of 130 ng/J (0.30 lb/MMBtu) heat input unless the affected facility has an annual capacity factor for natural gas, distillate oil, or a mixture of these fuels of 10 percent (0.10) or less and is subject to a federally enforceable requirement that limits operation of the affected facility to an annual capacity factor of 10 percent (0.10) or less for natural gas, distillate oil, or a mixture of these fuels.

(e) Except as provided under paragraph (l) of this section, 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 simultaneously combusts only coal, oil, or natural gas with byproduct/waste shall cause to be discharged into the atmosphere any gases that contain NO<sub>x</sub> in excess of the emission limit determined by the following formula unless the affected facility has an annual capacity factor for coal, oil, and natural gas of 10 percent (0.10) or less and is subject to a federally enforceable requirement that limits operation of the affected facility to an annual capacity factor of 10 percent (0.10) or less:

(f) Any owner or operator of an affected facility that combusts byproduct/waste with either natural gas or oil may petition the Administrator within 180 days of the initial startup of the affected facility to establish a NO<sub>x</sub> emission limit that shall apply specifically to that affected facility when the byproduct/waste is combusted. The petition shall include sufficient and appropriate data, as determined by the Administrator, such as NO<sub>x</sub> emissions from the affected facility, waste composition (including nitrogen content), and combustion conditions to allow the Administrator to confirm that the affected facility is unable to comply with the emission limits in paragraph (e) of this section and to determine the appropriate emission limit for the affected facility.

(1) Any owner or operator of an affected facility petitioning for a facility-specific NO<sub>x</sub> emission limit under this section shall:

(i) Demonstrate compliance with the emission limits for natural gas and distillate oil in paragraph (a)(1) of this section or for residual oil in paragraph (a)(2) or (l)(1) of this section, as appropriate, by conducting a 30-day performance test as provided in §60.46b(e). During the performance test only natural gas, distillate oil, or residual oil shall be combusted in the affected facility; and

(ii) Demonstrate that the affected facility is unable to comply with the emission limits for natural gas and distillate oil in paragraph (a)(1) of this section or for residual oil in paragraph (a)(2) or (l)(1) of this section, as appropriate, when gaseous or liquid byproduct/waste is combusted in the affected facility under the same conditions and using the same technological system of emission reduction applied when demonstrating compliance under paragraph (f)(1)(i) of this section.

(2) The NO<sub>x</sub> emission limits for natural gas or distillate oil in paragraph (a)(1) of this section or for residual oil in paragraph (a)(2) or (l)(1) of this section, as appropriate, shall be applicable to the affected facility until and unless the petition is approved by the Administrator. If the petition is approved by the Administrator, a facility-specific NO<sub>x</sub> emission limit will be established at the NO<sub>x</sub> emission level achievable when the affected facility is combusting oil or natural gas and byproduct/waste in a manner that the Administrator determines to be consistent with minimizing NO<sub>x</sub> emissions. In lieu of amending this subpart, a letter will be sent to the facility describing the facility-specific NO<sub>x</sub> limit. The facility shall use the compliance procedures detailed in the letter and make the letter available to the public. If the Administrator determines it is appropriate, the conditions and requirements of the letter can be reviewed and changed at any point.

(g) Any owner or operator of an affected facility that combusts hazardous waste (as defined by 40 CFR part 261 or 40 CFR part 761) with natural gas or oil may petition the Administrator within 180 days of the initial startup of the affected facility for a waiver from compliance with the NO<sub>x</sub> emission limit that applies specifically to that affected facility. The petition must include sufficient and appropriate data, as determined by the Administrator, on NO<sub>x</sub> emissions from the affected facility, waste destruction efficiencies, waste composition (including nitrogen content), the quantity of specific wastes to be combusted and combustion conditions to allow the Administrator to determine if the affected facility is able to comply with the NO<sub>x</sub> emission limits required by this section. The owner or operator of the affected facility shall demonstrate that when hazardous waste is combusted in the affected facility, thermal destruction efficiency requirements for hazardous waste specified in an applicable federally enforceable requirement preclude compliance with the NO<sub>x</sub> emission limits of this section. The NO<sub>x</sub> emission limits for natural gas or distillate oil in paragraph (a)(1) of this section or for residual oil in paragraph (a)(2) or (l)(1) of this section, as appropriate, are applicable to the affected facility until and unless the petition is approved by the Administrator. (See 40 CFR 761.70 for regulations applicable to the incineration of materials containing polychlorinated biphenyls (PCB's).) In lieu of amending this subpart, a letter will be sent to the facility describing the facility-specific NO<sub>x</sub> limit. The facility shall use the compliance procedures detailed in the letter and make the letter available to the public. If the Administrator determines it is appropriate, the conditions and requirements of the letter can be reviewed and changed at any point.

(h) For purposes of paragraph (i) of this section, the NO<sub>x</sub> standards under this section apply at all times including periods of startup, shutdown, or malfunction.

(i) Except as provided under paragraph (j) of this section, compliance with the emission limits under this section is determined on a 30-day rolling average basis.

(j) Compliance with the emission limits under this section is determined on a 24-hour average basis for the initial performance test and on a 3-hour average basis for subsequent performance tests for any affected facilities that:

(1) Combust, alone or in combination, only natural gas, distillate oil, or residual oil with a nitrogen content of 0.30 weight percent or less;

(2) Have a combined annual capacity factor of 10 percent or less for natural gas, distillate oil, and residual oil with a nitrogen content of 0.30 weight percent or less; and

(3) Are subject to a federally enforceable requirement limiting operation of the affected facility to the firing of natural gas, distillate oil, and/or residual oil with a nitrogen content of 0.30 weight percent or less and limiting operation of the affected facility to a combined annual capacity factor of 10 percent or less for natural gas, distillate oil, and residual oil with a nitrogen content of 0.30 weight percent or less.

(k) Affected facilities that meet the criteria described in paragraphs (j)(1), (2), and (3) of this section, and that have a heat input capacity of 73 MW (250 MMBtu/hr) or less, are not subject to the NO<sub>x</sub> emission limits under this section.

(l) On and after the date on which the initial performance test is completed or is required to be completed under 60.8, whichever date is first, no owner or operator of an affected facility that

commenced construction after July 9, 1997 shall cause to be discharged into the atmosphere from that affected facility any gases that contain NO<sub>x</sub> (expressed as NO<sub>2</sub>) in excess of the following limits:

(1) 86 ng/J (0.20 lb/MMBtu) heat input if the affected facility combusts coal, oil, or natural gas (or any combination of the three), alone or with any other fuels. The affected facility is not subject to this limit if it is subject to and in compliance with a federally enforceable requirement that limits operation of the facility to an annual capacity factor of 10 percent (0.10) or less for coal, oil, and natural gas (or any combination of the three); or

(2) If the affected facility has a low heat release rate and combusts natural gas or distillate oil in excess of 30 percent of the heat input on a 30-day rolling average from the combustion of all fuels, a limit determined by use of the following formula:

$$E_n = \frac{(0.10 \times H_{go}) + (0.20 \times H_r)}{(H_{go} + H_r)}$$

Where:

$E_n$  = NO<sub>x</sub> emission limit, (lb/MMBtu);

$H_{go}$  = 30-day heat input from combustion of natural gas or distillate oil; and

$H_r$  = 30-day heat input from combustion of any other fuel.

(3) After February 27, 2006, units where more than 10 percent of total annual output is electrical or mechanical may comply with an optional limit of 270 ng/J (2.1 lb/MWh) gross energy output, based on a 30-day rolling average. Units complying with this output-based limit must demonstrate compliance according to the procedures of §60.48Da(i) of subpart Da of this part, and must monitor emissions according to §60.49Da(c), (k), through (n) of subpart Da of this part.

[72 FR 32742, June 13, 2007, as amended at 74 FR 5086, Jan. 28, 2009; 77 FR 9459, Feb. 16, 2012]

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#### **§60.45b Compliance and performance test methods and procedures for sulfur dioxide.**

(a) The SO<sub>2</sub> emission standards in §60.42b apply at all times. Facilities burning coke oven gas alone or in combination with any other gaseous fuels or distillate oil are allowed to exceed the limit 30 operating days per calendar year for SO<sub>2</sub> control system maintenance.

(b) In conducting the performance tests required under §60.8, the owner or operator shall use the methods and procedures in appendix A (including fuel certification and sampling) of this part or the methods and procedures as specified in this section, except as provided in §60.8(b). 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.

(c) The owner or operator of an affected facility shall conduct performance tests to determine compliance with the percent of potential SO<sub>2</sub> emission rate (% P<sub>s</sub>) and the SO<sub>2</sub> emission rate (E<sub>s</sub>) pursuant to §60.42b following the procedures listed below, except as provided under paragraph (d) and (k) of this section.

(1) The initial performance test shall be conducted over 30 consecutive operating days of the steam generating unit. Compliance with the SO<sub>2</sub> standards 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 affected facility will be operated, but not later than 180 days after initial startup of the facility.

(2) If only coal, only oil, or a mixture of coal and oil is combusted, the following procedures are used:

(i) The procedures in Method 19 of appendix A-7 of this part are used to determine the hourly SO<sub>2</sub> emission rate (E<sub>ho</sub>) and the 30-day average emission rate (E<sub>ao</sub>). The hourly averages used to compute the 30-day averages are obtained from the CEMS of §60.47b(a) or (b).

(ii) The percent of potential SO<sub>2</sub> emission rate (%P<sub>s</sub>) emitted to the atmosphere 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<sub>s</sub> = Potential SO<sub>2</sub> emission rate, percent;

%R<sub>g</sub> = 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<sub>f</sub> = SO<sub>2</sub> removal efficiency of fuel pretreatment as determined by Method 19 of appendix A of this part, in percent.

(3) If coal or oil is combusted with other fuels, the same procedures required in paragraph (c)(2) of this section are used, except as provided in the following:

(i) An adjusted hourly SO<sub>2</sub> emission rate (E<sub>ho</sub><sup>o</sup>) is used in Equation 19-19 of Method 19 of appendix A of this part to compute an adjusted 30-day average emission rate (E<sub>ao</sub><sup>o</sup>). The E<sub>ho</sub><sup>o</sup> is computed using the following formula:

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

Where:

E<sub>ho</sub><sup>o</sup> = Adjusted hourly SO<sub>2</sub> emission rate, 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 the fuel sampling and analysis procedures in Method 19 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; and

X<sub>k</sub> = Fraction of total heat input from fuel combustion derived from coal, oil, or coal and oil, as determined by applicable procedures in Method 19 of appendix A of this part.

(ii) To compute the percent of potential SO<sub>2</sub> emission rate (%P<sub>s</sub>), an adjusted %R<sub>g</sub> (%R<sub>g</sub><sup>o</sup>) is computed from the adjusted E<sub>ao</sub><sup>o</sup> from paragraph (b)(3)(i) of this section and an adjusted average SO<sub>2</sub> inlet rate (E<sub>ai</sub><sup>o</sup>) using the following formula:

$$\%R_g^o = 100 \left( 1.0 - \frac{E_{ao}^o}{E_{ai}^o} \right)$$

To compute E<sub>ai</sub><sup>o</sup>, an adjusted hourly SO<sub>2</sub> inlet rate (E<sub>hi</sub><sup>o</sup>) is used. The E<sub>hi</sub><sup>o</sup> is computed using the following formula:

$$E_{hi}^o = \frac{E_{hi} - E_w(1 - X_k)}{X_k}$$

Where:

E<sub>hi</sub><sup>o</sup> = Adjusted hourly SO<sub>2</sub> inlet rate, ng/J (lb/MMBtu); and

E<sub>hi</sub> = Hourly SO<sub>2</sub> inlet rate, ng/J (lb/MMBtu).

(4) The owner or operator of an affected facility subject to paragraph (c)(3) of this section does not have to measure parameters E<sub>w</sub> or X<sub>k</sub> if the owner or operator elects to assume that X<sub>k</sub> = 1.0. Owners or operators of affected facilities who assume X<sub>k</sub> = 1.0 shall:

(i) Determine %P<sub>s</sub> following the procedures in paragraph (c)(2) of this section; and

(ii) Sulfur dioxide emissions ( $E_s$ ) are considered to be in compliance with  $SO_2$  emission limits under §60.42b.

(5) The owner or operator of an affected facility that qualifies under the provisions of §60.42b(d) does not have to measure parameters  $E_w$  or  $X_k$  in paragraph (c)(3) of this section if the owner or operator of the affected facility elects to measure  $SO_2$  emission rates of the coal or oil following the fuel sampling and analysis procedures in Method 19 of appendix A-7 of this part.

(d) Except as provided in paragraph (j) of this section, the owner or operator of an affected facility that combusts only very low sulfur oil, natural gas, or a mixture of these fuels, has an annual capacity factor for oil of 10 percent (0.10) or less, and is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor for oil of 10 percent (0.10) or less shall:

(1) Conduct the initial performance test over 24 consecutive steam generating unit operating hours at full load;

(2) Determine compliance with the standards after the initial performance test based on the arithmetic average of the hourly emissions data during each steam generating unit operating day if a CEMS is used, or based on a daily average if Method 6B of appendix A of this part or fuel sampling and analysis procedures under Method 19 of appendix A of this part are used.

(e) The owner or operator of an affected facility subject to §60.42b(d)(1) shall demonstrate the maximum design capacity of the steam generating unit by operating the facility at maximum capacity for 24 hours. This demonstration will be made during the initial performance test and a subsequent demonstration may be requested at any other time. If the 24-hour average firing rate for the affected facility is less than the maximum design capacity provided by the manufacturer of the affected facility, the 24-hour average firing rate shall be used to determine the capacity utilization rate for the affected facility, otherwise the maximum design capacity provided by the manufacturer is used.

(f) For the initial performance test required under §60.8, compliance with the  $SO_2$  emission limits and percent reduction requirements under §60.42b is based on the average emission rates and the average percent reduction for  $SO_2$  for the first 30 consecutive steam generating unit operating days, except as provided under paragraph (d) of this section. The initial performance test is the only test for which at least 30 days prior notice is required unless otherwise specified by the Administrator. The initial performance test is to be scheduled so that the first steam generating unit operating day of the 30 successive steam generating unit operating days is completed within 30 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of the facility. The boiler load during the 30-day period does not have to be the maximum design load, but must be representative of future operating conditions and include at least one 24-hour period at full load.

(g) After the initial performance test required under §60.8, compliance with the  $SO_2$  emission limits and percent reduction requirements under §60.42b is based on the average emission rates and the average percent reduction for  $SO_2$  for 30 successive steam generating unit operating days, except as provided under paragraph (d). A separate performance test is completed at the end of each steam generating unit operating day after the initial performance test, and a new 30-day average emission rate and percent reduction for  $SO_2$  are calculated to show compliance with the standard.

(h) Except as provided under paragraph (i) of this section, the owner or operator of an affected facility shall use all valid  $SO_2$  emissions data in calculating  $\%P_s$  and  $E_{ho}$  under paragraph (c), of this section whether or not the minimum emissions data requirements under §60.46b are achieved. All valid emissions data, including valid  $SO_2$  emission data collected during periods of startup, shutdown and malfunction, shall be used in calculating  $\%P_s$  and  $E_{ho}$  pursuant to paragraph (c) of this section.

(i) During periods of malfunction or maintenance of the  $SO_2$  control systems when oil is combusted as provided under §60.42b(i), emission data are not used to calculate  $\%P_s$  or  $E_s$  under §60.42b(a), (b) or (c), however, the emissions data are used to determine compliance with the emission limit under §60.42b(i).

(j) The owner or operator of an affected facility that only combusts very low sulfur oil, natural gas, or a mixture of these fuels with any other fuels not subject to an  $SO_2$  standard is not subject to the compliance and performance testing requirements of this section if the owner or operator obtains fuel receipts as described in §60.49b(r).



(k) The owner or operator of an affected facility seeking to demonstrate compliance in §§60.42b(d)(4), 60.42b(j), 60.42b(k)(2), and 60.42b(k)(3) (when not burning coal) shall follow the applicable procedures in §60.49b(r).

[72 FR 32742, June 13, 2007, as amended at 74 FR 5086, Jan. 28, 2009]

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**§60.46b Compliance and performance test methods and procedures for particulate matter and nitrogen oxides.**

(a) The PM emission standards and opacity limits under §60.43b apply at all times except during periods of startup, shutdown, or malfunction. The NO<sub>x</sub> emission standards under §60.44b apply at all times.

(b) Compliance with the PM emission standards under §60.43b shall be determined through performance testing as described in paragraph (d) of this section, except as provided in paragraph (i) of this section.

(c) Compliance with the NO<sub>x</sub> emission standards under §60.44b shall be determined through performance testing under paragraph (e) or (f), or under paragraphs (g) and (h) of this section, as applicable.

(d) To determine compliance with the PM emission limits and opacity limits under §60.43b, the owner or operator of an affected facility shall conduct an initial performance test as required under §60.8, and shall conduct subsequent performance tests as requested by the Administrator, using the following procedures and reference methods:

(1) Method 3A or 3B of appendix A-2 of this part is used for gas analysis when applying Method 5 of appendix A-3 of this part or Method 17 of appendix A-6 of this part.

(2) 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 shall be used at affected facilities without wet flue gas desulfurization (FGD) systems; and

(ii) Method 17 of appendix A-6 of this part may be used at 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-3 of this part may be used in Method 17 of appendix A-6 of this part only if it is used after a wet FGD system. Do not use Method 17 of appendix A-6 of this part after wet FGD systems if the effluent is saturated or laden with water droplets.

(iii) Method 5B of appendix A of this part is to be used only after wet FGD systems.

(3) Method 1 of appendix A of this part is used to select the sampling site and the number of traverse sampling points. The sampling time for each run is at least 120 minutes and the minimum sampling volume is 1.7 dscm (60 dscf) except that smaller sampling times or volumes may be approved by the Administrator when necessitated by process variables or other factors.

(4) For Method 5 of appendix A of this part, the temperature of the sample gas in the probe and filter holder is monitored and is maintained at 160±14 °C (320±25 °F).

(5) For determination of PM emissions, the oxygen (O<sub>2</sub>) or CO<sub>2</sub> sample is 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.

(6) For each run using Method 5, 5B, or 17 of appendix A of this part, the emission rate expressed in ng/J heat input is 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.

(7) Method 9 of appendix A of this part is used for determining the opacity of stack emissions.

(e) To determine compliance with the emission limits for NO<sub>x</sub> required under §60.44b, the owner or operator of an affected facility shall conduct the performance test as required under §60.8 using the continuous system for monitoring NO<sub>x</sub> under §60.48(b).

(1) For the initial compliance test, NO<sub>x</sub> from the steam generating unit are monitored for 30 successive steam generating unit operating days and the 30-day average emission rate is used to determine compliance with the NO<sub>x</sub> emission standards under §60.44b. The 30-day average emission rate is calculated as the average of all hourly emissions data recorded by the monitoring system during the 30-day test period.

(2) Following the date on which the initial performance test is completed or is required to be completed in §60.8, whichever date comes first, the owner or operator of an affected facility which combusts coal (except as specified under §60.46b(e)(4)) or which combusts residual oil having a nitrogen content greater than 0.30 weight percent shall determine compliance with the NO<sub>x</sub> emission standards in §60.44b on a continuous basis through the use of a 30-day rolling average emission rate. A new 30-day rolling average emission rate is calculated for each steam generating unit operating day as the average of all of the hourly NO<sub>x</sub> emission data for the preceding 30 steam generating unit operating days.

(3) Following the date on which the initial performance test is completed or is required to be completed under §60.8, whichever date comes first, the owner or operator of an affected facility that has a heat input capacity greater than 73 MW (250 MMBtu/hr) and that combusts natural gas, distillate oil, or residual oil having a nitrogen content of 0.30 weight percent or less shall determine compliance with the NO<sub>x</sub> standards under §60.44b on a continuous basis through the use of a 30-day rolling average emission rate. A new 30-day rolling average emission rate is calculated each steam generating unit operating day as the average of all of the hourly NO<sub>x</sub> emission data for the preceding 30 steam generating unit operating days.

(4) Following the date on which the initial 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 has a heat input capacity of 73 MW (250 MMBtu/hr) or less and that combusts natural gas, distillate oil, gasified coal, or residual oil having a nitrogen content of 0.30 weight percent or less shall upon request determine compliance with the NO<sub>x</sub> standards in §60.44b through the use of a 30-day performance test. During periods when performance tests are not requested, NO<sub>x</sub> emissions data collected pursuant to §60.48b(g)(1) or §60.48b(g)(2) are used to calculate a 30-day rolling average emission rate on a daily basis and used to prepare excess emission reports, but will not be used to determine compliance with the NO<sub>x</sub> emission standards. A new 30-day rolling average emission rate is calculated each steam generating unit operating day as the average of all of the hourly NO<sub>x</sub> emission data for the preceding 30 steam generating unit operating days.

(5) If the owner or operator of an affected facility that combusts residual oil does not sample and analyze the residual oil for nitrogen content, as specified in §60.49b(e), the requirements of §60.48b(g)(1) apply and the provisions of §60.48b(g)(2) are inapplicable.

(f) To determine compliance with the emissions limits for NO<sub>x</sub> required by §60.44b(a)(4) or §60.44b(l) for duct burners used in combined cycle systems, either of the procedures described in paragraph (f)(1) or (2) of this section may be used:

(1) The owner or operator of an affected facility shall conduct the performance test required under §60.8 as follows:

(i) The emissions rate (E) of NO<sub>x</sub> shall be computed using Equation 1 in this section:

$$E = E_{zg} + \left( \frac{H_z}{H_b} \right) (E_{zg} - E_{zg}) \quad (\text{Eq.1})$$

Where:

E = Emissions rate of NO<sub>x</sub> from the duct burner, ng/J (lb/MMBtu) heat input;

$E_{sg}$  = Combined effluent emissions rate, in ng/J (lb/MMBtu) heat input using appropriate F factor as described in Method 19 of appendix A of this part;

$H_g$  = Heat input rate to the combustion turbine, in J/hr (MMBtu/hr);

$H_b$  = Heat input rate to the duct burner, in J/hr (MMBtu/hr); and

$E_g$  = Emissions rate from the combustion turbine, in ng/J (lb/MMBtu) heat input calculated using appropriate F factor as described in Method 19 of appendix A of this part.

(ii) Method 7E of appendix A of this part shall be used to determine the  $NO_x$  concentrations. Method 3A or 3B of appendix A of this part shall be used to determine  $O_2$  concentration.

(iii) The owner or operator shall identify and demonstrate to the Administrator's satisfaction suitable methods to determine the average hourly heat input rate to the combustion turbine and the average hourly heat input rate to the affected duct burner.

(iv) Compliance with the emissions limits under §60.44b(a)(4) or §60.44b(l) is determined by the three-run average (nominal 1-hour runs) for the initial and subsequent performance tests; or

(2) The owner or operator of an affected facility may elect to determine compliance on a 30-day rolling average basis by using the CEMS specified under §60.48b for measuring  $NO_x$  and  $O_2$  and meet the requirements of §60.48b. The sampling site shall be located at the outlet from the steam generating unit. The  $NO_x$  emissions rate at the outlet from the steam generating unit shall constitute the  $NO_x$  emissions rate from the duct burner of the combined cycle system.

(g) The owner or operator of an affected facility described in §60.44b(j) or §60.44b(k) shall demonstrate the maximum heat input capacity of the steam generating unit by operating the facility at maximum capacity for 24 hours. The owner or operator of an affected facility shall determine the maximum heat input capacity using the heat loss method or the heat input method described in sections 5 and 7.3 of the ASME *Power Test Codes* 4.1 (incorporated by reference, see §60.17). This demonstration of maximum heat input capacity shall be made during the initial performance test for affected facilities that meet the criteria of §60.44b(j). It shall be made within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial start-up of each facility, for affected facilities meeting the criteria of §60.44b(k). Subsequent demonstrations may be required by the Administrator at any other time. If this demonstration indicates that the maximum heat input capacity of the affected facility is less than that stated by the manufacturer of the affected facility, the maximum heat input capacity determined during this demonstration shall be used to determine the capacity utilization rate for the affected facility. Otherwise, the maximum heat input capacity provided by the manufacturer is used.

(h) The owner or operator of an affected facility described in §60.44b(j) that has a heat input capacity greater than 73 MW (250 MMBtu/hr) shall:

(1) Conduct an initial performance test as required under §60.8 over a minimum of 24 consecutive steam generating unit operating hours at maximum heat input capacity to demonstrate compliance with the  $NO_x$  emission standards under §60.44b using Method 7, 7A, 7E of appendix A of this part, or other approved reference methods; and

(2) Conduct subsequent performance tests once per calendar year or every 400 hours of operation (whichever comes first) to demonstrate compliance with the  $NO_x$  emission standards under §60.44b over a minimum of 3 consecutive steam generating unit operating hours at maximum heat input capacity using Method 7, 7A, 7E of appendix A of this part, or other approved reference methods.

(i) The owner or operator of an affected facility seeking to demonstrate compliance with the PM limit in paragraphs §60.43b(a)(4) or §60.43b(h)(5) shall follow the applicable procedures in §60.49b(r).

(j) 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 comply with the requirements specified in paragraphs (j)(1) through (j)(14) of this section.

- (1) Notify the Administrator one month before starting use of the system.
- (2) Notify the Administrator one 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 the 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 (j) 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 paragraphs (j)(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 (j)(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 (j)(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 per 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.

[72 FR 32742, June 13, 2007, as amended at 74 FR 5086, Jan. 28, 2009; 76 FR 3523, Jan. 20, 2011; 77 FR 9460, Feb. 16, 2012]

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#### **§60.47b Emission monitoring for sulfur dioxide.**

(a) Except as provided in paragraphs (b) and (f) of this section, the owner or operator of an affected facility subject to the SO<sub>2</sub> standards in §60.42b shall install, calibrate, maintain, and operate CEMS for measuring SO<sub>2</sub> concentrations and either O<sub>2</sub> or CO<sub>2</sub> concentrations and shall record the output of the systems. For units complying with the percent reduction standard, the SO<sub>2</sub> and either O<sub>2</sub> or CO<sub>2</sub> concentrations shall both be monitored at the inlet and outlet of the SO<sub>2</sub> control device. If the owner or operator has installed and certified SO<sub>2</sub> and O<sub>2</sub> or CO<sub>2</sub> CEMS according to the requirements of §75.20(c)(1) of this chapter and appendix A to part 75 of this chapter, and is continuing to meet the ongoing quality assurance requirements of §75.21 of this chapter and appendix B to part 75 of this chapter, those CEMS may be used to meet the requirements of this section, provided that:

(1) When relative accuracy testing is conducted, SO<sub>2</sub> concentration data and CO<sub>2</sub> (or O<sub>2</sub>) data are collected simultaneously; and

(2) In addition to meeting the applicable SO<sub>2</sub> and CO<sub>2</sub> (or O<sub>2</sub>) relative accuracy specifications in Figure 2 of appendix B to part 75 of this chapter, the relative accuracy (RA) standard in section 13.2 of Performance Specification 2 in appendix B to this part is met when the RA is calculated on a lb/MMBtu basis; and

(3) The reporting requirements of §60.49b are met. SO<sub>2</sub> and CO<sub>2</sub> (or O<sub>2</sub>) data used to meet the requirements of §60.49b shall not include substitute data values derived from the missing data procedures in subpart D of part 75 of this chapter, nor shall the SO<sub>2</sub> data have been bias adjusted according to the procedures of part 75 of this chapter.

(b) As an alternative to operating CEMS as required under paragraph (a) of this section, an owner or operator may elect to determine the average SO<sub>2</sub> emissions and percent reduction by:

(1) Collecting coal or oil samples in an as-fired condition at the inlet to the steam generating unit and analyzing them for sulfur and heat content according to 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, or

(2) Measuring SO<sub>2</sub> according to Method 6B of appendix A of this part at the inlet or outlet to 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 section 3.2 and the applicable procedures in section 7 of Performance Specification 2. Method 6B of appendix A of this part, Method 6A of appendix A of this part, or a combination of Methods 6 and 3 or 3B 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.

(3) A daily SO<sub>2</sub> emission rate, E<sub>D</sub>, shall be determined using the procedure described in Method 6A of appendix A of this part, section 7.6.2 (Equation 6A-8) and stated in ng/J (lb/MMBtu) heat input.

(4) The mean 30-day emission rate is calculated using the daily measured values in ng/J (lb/MMBtu) for 30 successive steam generating unit operating days using equation 19-20 of Method 19 of appendix A of this part.

(c) The owner or operator of an affected facility shall obtain emission data for at least 75 percent of the operating hours in at least 22 out of 30 successive boiler 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 or the reference methods and procedures as described in paragraph (b) of this section.

(d) The 1-hour average SO<sub>2</sub> emission rates measured by the CEMS required by paragraph (a) of this section and required under §60.13(h) is expressed in ng/J or lb/MMBtu heat input and is used to calculate the average emission rates under §60.42(b). Each 1-hour average SO<sub>2</sub> emission rate must be based on 30 or more minutes of steam generating unit operation. The hourly averages shall be calculated according to §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 given clock hour and are not counted toward determination of a steam generating unit operating day.

(e) The procedures under §60.13 shall be followed for installation, evaluation, and operation of the CEMS.

(1) Except as provided for in paragraph (e)(4) of this section, 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) Except as provided for in paragraph (e)(4) of this section, 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 combusting coal or oil, alone or in combination with other fuels, the span value of the SO<sub>2</sub> CEMS at the inlet to the SO<sub>2</sub> control device is 125 percent of the maximum estimated hourly potential SO<sub>2</sub> emissions of the fuel combusted, and the span value of the CEMS at the outlet to the SO<sub>2</sub> control device is 50 percent of the maximum estimated hourly potential SO<sub>2</sub> emissions of the fuel combusted. Alternatively, SO<sub>2</sub> span values determined according to section 2.1.1 in appendix A to part 75 of this chapter may be used.

(4) As an alternative to meeting the requirements of requirements of paragraphs (e)(1) and (e)(2) of this section, the owner or operator may elect to implement the following alternative data accuracy assessment procedures:

(i) For all required CO<sub>2</sub> and O<sub>2</sub> monitors and for SO<sub>2</sub> and NO<sub>x</sub> monitors with span values greater than or equal to 100 ppm, the daily calibration error test and calibration adjustment procedures described in sections 2.1.1 and 2.1.3 of appendix B to part 75 of this chapter may be followed instead of the CD assessment procedures in Procedure 1, section 4.1 of appendix F to this part.

(ii) For all required CO<sub>2</sub> and O<sub>2</sub> monitors and for SO<sub>2</sub> and NO<sub>x</sub> monitors with span values greater than 30 ppm, quarterly linearity checks may be performed in accordance with section 2.2.1 of appendix B to part 75 of this chapter, instead of performing the cylinder gas audits (CGAs) described in Procedure 1, section 5.1.2 of appendix F to this part. If this option is selected: The frequency of the linearity checks shall be as specified in section 2.2.1 of appendix B to part 75 of this chapter; the applicable linearity specifications in section 3.2 of appendix A to part 75 of this chapter shall be met; the data validation and out-of-control criteria in section 2.2.3 of appendix B to part 75 of this chapter shall be followed instead of the excessive audit inaccuracy and out-of-control criteria in Procedure 1, section 5.2 of appendix F to this part; and the grace period provisions in section 2.2.4 of appendix B to part 75 of this chapter shall apply. For the purposes of data validation under this subpart, the cylinder gas audits described in Procedure 1, section 5.1.2 of appendix F to this part shall be performed for SO<sub>2</sub> and NO<sub>x</sub> span values less than or equal to 30 ppm; and

(iii) For SO<sub>2</sub>, CO<sub>2</sub>, and O<sub>2</sub> monitoring systems and for NO<sub>x</sub> emission rate monitoring systems, RATAs may be performed in accordance with section 2.3 of appendix B to part 75 of this chapter instead of following the procedures described in Procedure 1, section 5.1.1 of appendix F to this part. If this option is selected: The frequency of each RATA shall be as specified in section 2.3.1 of appendix B to part 75 of this chapter; the applicable relative accuracy specifications shown in Figure 2 in appendix B to part 75 of this chapter shall be met; the data validation and out-of-control criteria in section 2.3.2 of appendix B to part 75 of this chapter shall be followed instead of the excessive audit inaccuracy and out-of-control criteria in Procedure 1, section 5.2 of appendix F to this part; and the grace period provisions in section 2.3.3 of appendix B to part 75 of this chapter shall apply. For the purposes of data validation under this subpart, the relative accuracy specification in section 13.2 of Performance Specification 2 in appendix B to this part shall be met on a lb/MMBtu basis for SO<sub>2</sub> (regardless of the SO<sub>2</sub> emission level during the RATA), and for NO<sub>x</sub> when the average NO<sub>x</sub> emission rate measured by the reference method during the RATA is less than 0.100 lb/MMBtu.

(f) The owner or operator of an affected facility that combusts very low sulfur oil or is demonstrating compliance under §60.45b(k) is not subject to the emission monitoring requirements under paragraph (a) of this section if the owner or operator maintains fuel records as described in §60.49b(r).

[72 FR 32742, June 13, 2007, as amended at 74 FR 5087, Jan. 28, 2009]

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#### **§60.48b Emission monitoring for particulate matter and nitrogen oxides.**

(a) Except as provided in paragraph (j) of this section, the owner or operator of an affected facility subject to the opacity standard under §60.43b shall install, calibrate, maintain, and operate a continuous opacity monitoring systems (COMS) for measuring the opacity of 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 under §60.43b and meeting the conditions under paragraphs (j)(1), (2), (3), (4), (5), or (6) of this section who 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 §60.43b 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 §60.46d(d)(7).

(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) Except as provided under paragraphs (g), (h), and (i) of this section, the owner or operator of an affected facility subject to a NO<sub>x</sub> standard under §60.44b shall comply with either paragraphs (b)(1) or (b)(2) of this section.

(1) Install, calibrate, maintain, and operate CEMS for measuring NO<sub>x</sub> and O<sub>2</sub> (or CO<sub>2</sub>) emissions discharged to the atmosphere, and shall record the output of the system; or

(2) If the owner or operator has installed a NO<sub>x</sub> emission rate CEMS to meet the requirements of part 75 of this chapter and is continuing to meet the ongoing requirements of part 75 of this chapter, that CEMS may be used to meet the requirements of this section, except that the owner or operator shall also meet the requirements of §60.49b. Data reported to meet the requirements of §60.49b shall not include data substituted using the missing data procedures in subpart D of part 75 of this chapter, nor shall the data have been bias adjusted according to the procedures of part 75 of this chapter.

(c) The CEMS required under paragraph (b) of this section 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.

(d) The 1-hour average NO<sub>x</sub> emission rates measured by the continuous NO<sub>x</sub> monitor required by paragraph (b) of this section and required under §60.13(h) shall be expressed in ng/J or lb/MMBtu heat input and shall be used to calculate the average emission rates under §60.44b. The 1-hour averages shall be calculated using the data points required under §60.13(h)(2).

(e) The procedures under §60.13 shall be followed for installation, evaluation, and operation of the continuous monitoring systems.

(1) For affected facilities combusting coal, wood or municipal-type solid waste, the span value for a COMS shall be between 60 and 80 percent.

(2) For affected facilities combusting coal, oil, or natural gas, the span value for NO<sub>x</sub> is determined using one of the following procedures:

(i) Except as provided under paragraph (e)(2)(ii) of this section, NO<sub>x</sub> span values shall be determined as follows:

Fuel	Span values for NO <sub>x</sub> (ppm)
Natural gas	500.
Oil	500.
Coal	1,000.
Mixtures	500 (x + y) + 1,000z.



Where:

x = Fraction of total heat input derived from natural gas;

y = Fraction of total heat input derived from oil; and

z = Fraction of total heat input derived from coal.

(ii) As an alternative to meeting the requirements of paragraph (e)(2)(i) of this section, the owner or operator of an affected facility may elect to use the NO<sub>x</sub> span values determined according to section 2.1.2 in appendix A to part 75 of this chapter.

(3) All span values computed under paragraph (e)(2)(i) of this section for combusting mixtures of regulated fuels are rounded to the nearest 500 ppm. Span values computed under paragraph (e)(2)(ii) of this section shall be rounded off according to section 2.1.2 in appendix A to part 75 of this chapter.

(f) When NO<sub>x</sub> emission data are not obtained because of CEMS breakdowns, repairs, calibration checks and zero and span adjustments, emission data will be obtained by using standby monitoring systems, Method 7 of appendix A of this part, Method 7A of appendix A of this part, or other approved reference methods to provide emission data for a minimum of 75 percent of the operating hours in each steam generating unit operating day, in at least 22 out of 30 successive steam generating unit operating days.

(g) The owner or operator of an affected facility that has a heat input capacity of 73 MW (250 MMBtu/hr) or less, and that has an annual capacity factor for residual oil having a nitrogen content of 0.30 weight percent or less, natural gas, distillate oil, gasified coal, or any mixture of these fuels, greater than 10 percent (0.10) shall:

(1) Comply with the provisions of paragraphs (b), (c), (d), (e)(2), (e)(3), and (f) of this section; or

(2) Monitor steam generating unit operating conditions and predict NO<sub>x</sub> emission rates as specified in a plan submitted pursuant to §60.49b(c).

(h) The owner or operator of a duct burner, as described in §60.41b, that is subject to the NO<sub>x</sub> standards in §60.44b(a)(4), §60.44b(e), or §60.44b(l) is not required to install or operate a continuous emissions monitoring system to measure NO<sub>x</sub> emissions.

(i) The owner or operator of an affected facility described in §60.44b(j) or §60.44b(k) is not required to install or operate a CEMS for measuring NO<sub>x</sub> emissions.

(j) The owner or operator of an affected facility that meets the conditions in either paragraph (j)(1), (2), (3), (4), (5), (6), or (7) of this section is not required to install or operate a COMS if:

(1) The affected facility uses a PM CEMS to monitor PM emissions; or

(2) The affected facility burns only liquid (excluding residual oil) or gaseous fuels with potential SO<sub>2</sub> emissions rates of 26 ng/J (0.060 lb/MMBtu) or less and does not use a post-combustion technology to reduce SO<sub>2</sub> or PM emissions. The owner or operator must maintain fuel records of the sulfur content of the fuels burned, as described under §60.49b(r); or

(3) The affected facility burns coke oven gas alone or in combination with fuels meeting the criteria in paragraph (j)(2) of this section and does not use a post-combustion technology to reduce SO<sub>2</sub> or PM emissions; or

(4) The affected facility 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 0.30 weight percent sulfur, and is operated such that emissions of CO to the atmosphere from the affected facility are maintained at levels less than or equal to 0.15 lb/MMBtu on a steam generating unit operating day average basis. Owners and operators of affected facilities electing to comply with this paragraph must demonstrate compliance according to the procedures specified in paragraphs (j)(4)(i) through (iv) of this section; or

(i) You must monitor CO emissions using a CEMS according to the procedures specified in paragraphs (j)(4)(i)(A) through (D) of this section.

(A) 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.

(B) 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).

(C) 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).

(D) 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.

(ii) 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.

(iii) 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.

(iv) You must record the CO measurements and calculations performed according to paragraph (j) (4) 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.

(5) The affected facility uses a bag leak detection system to monitor the performance of a fabric filter (baghouse) according to the most current requirements in section §60.48Da of this part; or

(6) The affected facility uses an ESP as the primary PM control device and uses an ESP predictive model to monitor the performance of the ESP developed in accordance and operated according to the most current requirements in section §60.48Da of this part; or

(7) The affected facility burns only gaseous fuels or fuel oils that contain less than or equal to 0.30 weight percent sulfur and operates 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.

(k) 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 §60.46b(j). The CEMS specified in paragraph §60.46b(j) 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.

(l) An owner or operator of an affected facility that is subject to an opacity standard under §60.43b (f) is not required to operate a COMS provided that the unit burns only gaseous fuels and/or liquid fuels (excluding residue oil) with a potential SO<sub>2</sub> emissions rate no greater than 26 ng/J (0.060 lb/MMBtu), and the unit operates according to a written site-specific monitoring plan approved by the permitting authority is not required to operate a COMS. 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 §60.49b(h).

[72 FR 32742, June 13, 2007, as amended at 74 FR 5087, Jan. 28, 2009; 76 FR 3523, Jan. 20, 2011; 77 FR 9460, Feb. 16, 2012]

### **§60.49b Reporting and recordkeeping requirements.**

(a) The owner or operator of each affected facility shall submit notification of the date of initial startup, as provided by §60.7. This notification shall include:

(1) The design heat input capacity of the affected facility and identification of the 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 §§60.42b(d)(1), 60.43b(a)(2), (a)(3)(iii), (c)(2)(ii), (d)(2)(iii), 60.44b(c), (d), (e), (i), (j), (k), 60.45b(d), (g), 60.46b(h), or 60.48b(i);

(3) The annual capacity factor at which the owner or operator anticipates operating the facility based on all fuels fired and based on each individual fuel fired; and

(4) Notification that an emerging technology will be used for controlling emissions of SO<sub>2</sub>. The Administrator will examine the description of the emerging technology 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 §60.42b(a) 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>, PM, and/or NO<sub>x</sub> emission limits under §§60.42b, 60.43b, and 60.44b shall submit to the Administrator the performance test data from the initial performance test and the performance evaluation of the CEMS using the applicable performance specifications in appendix B of this part. The owner or operator of each affected facility described in §60.44b(j) or §60.44b(k) shall submit to the Administrator the maximum heat input capacity data from the demonstration of the maximum heat input capacity of the affected facility.

(c) The owner or operator of each affected facility subject to the NO<sub>x</sub> standard in §60.44b who seeks to demonstrate compliance with those standards through the monitoring of steam generating unit operating conditions in the provisions of §60.48b(g)(2) shall submit to the Administrator for approval a plan that identifies the operating conditions to be monitored in §60.48b(g)(2) and the records to be maintained in §60.49b(g). This plan shall be submitted to the Administrator for approval within 360 days of the initial startup of the affected facility. An affected facility burning coke oven gas alone or in combination with other gaseous fuels or distillate oil shall submit this plan to the Administrator for approval within 360 days of the initial startup of the affected facility or by November 30, 2009, whichever date comes later. If the plan is approved, the owner or operator shall maintain records of predicted nitrogen oxide emission rates and the monitored operating conditions, including steam generating unit load, identified in the plan. The plan shall:

(1) Identify the specific operating conditions to be monitored and the relationship between these operating conditions and NO<sub>x</sub> emission rates (*i.e.*, ng/J or lbs/MMBtu heat input). Steam generating unit operating conditions include, but are not limited to, the degree of staged combustion (*i.e.*, the ratio of primary air to secondary and/or tertiary air) and the level of excess air (*i.e.*, flue gas O<sub>2</sub> level);

(2) Include the data and information that the owner or operator used to identify the relationship between NO<sub>x</sub> emission rates and these operating conditions; and

(3) Identify how these operating conditions, including steam generating unit load, will be monitored under §60.48b(g) on an hourly basis by the owner or operator during the period of operation of the affected facility; the quality assurance procedures or practices that will be employed to ensure that the data generated by monitoring these operating conditions will be representative and accurate; and the type and format of the records of these operating conditions, including steam generating unit load, that will be maintained by the owner or operator under §60.49b(g).

(d) Except as provided in paragraph (d)(2) of this section, the owner or operator of an affected facility shall record and maintain records as specified in paragraph (d)(1) of this section.

(1) The owner or operator of an affected facility shall record and maintain records of the amounts of each fuel combusted during each day and calculate the annual capacity factor individually for coal, distillate oil, residual oil, natural gas, wood, and municipal-type solid waste for the reporting period. The annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of each calendar month.

(2) As an alternative to meeting the requirements of paragraph (d)(1) of this section, the owner or operator of an affected facility that is subject to a federally enforceable permit restricting fuel use to a single fuel such that the facility is not required to continuously monitor any emissions (excluding opacity) or parameters indicative of emissions may elect to record and maintain records of the amount of each fuel combusted during each calendar month.

(e) For an affected facility that combusts residual oil and meets the criteria under §§60.46b(e)(4), 60.44b(j), or (k), the owner or operator shall maintain records of the nitrogen content of the residual oil combusted in the affected facility and calculate the average fuel nitrogen content for the reporting period. The nitrogen content shall be determined using ASTM Method D4629 (incorporated by reference, see §60.17), or fuel suppliers. If residual oil blends are being combusted, fuel nitrogen specifications may be prorated based on the ratio of residual oils of different nitrogen content in the fuel blend.

(f) For an affected facility subject to the opacity standard in §60.43b, the owner or operator shall maintain records of opacity. In addition, an owner or operator that elects to monitor emissions according to the requirements in §60.48b(a) shall maintain records according to the requirements specified in paragraphs (f)(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 (f)(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 (f)(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.

(g) Except as provided under paragraph (p) of this section, the owner or operator of an affected facility subject to the NO<sub>x</sub> standards under §60.44b shall maintain records of the following information for each steam generating unit operating day:

(1) Calendar date;

(2) The average hourly NO<sub>x</sub> emission rates (expressed as NO<sub>2</sub>) (ng/J or lb/MMBtu heat input) measured or predicted;

(3) The 30-day average NO<sub>x</sub> emission rates (ng/J or lb/MMBtu heat input) calculated at the end of each steam generating unit operating day from the measured or predicted hourly nitrogen oxide emission rates for the preceding 30 steam generating unit operating days;

(4) Identification of the steam generating unit operating days when the calculated 30-day average NO<sub>x</sub> emission rates are in excess of the NO<sub>x</sub> emissions standards under §60.44b, with the reasons for such excess emissions as well as a description of corrective actions taken;

(5) Identification of the steam generating unit operating days for which pollutant data have not been obtained, including reasons for not obtaining sufficient data and a description of corrective actions taken;

(6) Identification of the times when emission data have been excluded from the calculation of average emission rates and the reasons for excluding data;

(7) Identification of "F" factor used for calculations, method of determination, and type of fuel combusted;

(8) Identification of the times when the pollutant concentration exceeded full span of the CEMS;

(9) Description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specification 2 or 3; and

(10) Results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1 of this part.

(h) The owner or operator of any affected facility in any category listed in paragraphs (h)(1) or (2) of this section is required to submit excess emission reports for any excess emissions that occurred during the reporting period.

(1) Any affected facility subject to the opacity standards in §60.43b(f) or to the operating parameter monitoring requirements in §60.13(i)(1).

(2) Any affected facility that is subject to the NO<sub>x</sub> standard of §60.44b, and that:

(i) Combusts natural gas, distillate oil, gasified coal, or residual oil with a nitrogen content of 0.3 weight percent or less; or

(ii) Has a heat input capacity of 73 MW (250 MMBtu/hr) or less and is required to monitor NO<sub>x</sub> emissions on a continuous basis under §60.48b(g)(1) or steam generating unit operating conditions under §60.48b(g)(2).

(3) For the purpose of §60.43b, excess emissions are defined as all 6-minute periods during which the average opacity exceeds the opacity standards under §60.43b(f).

(4) For purposes of §60.48b(g)(1), excess emissions are defined as any calculated 30-day rolling average NO<sub>x</sub> emission rate, as determined under §60.46b(e), that exceeds the applicable emission limits in §60.44b.

(i) The owner or operator of any affected facility subject to the continuous monitoring requirements for NO<sub>x</sub> under §60.48(b) shall submit reports containing the information recorded under paragraph (g) of this section.

(j) The owner or operator of any affected facility subject to the SO<sub>2</sub> standards under §60.42b shall submit reports.

(k) For each affected facility subject to the compliance and performance testing requirements of §60.45b and the reporting requirement in paragraph (j) of this section, the following information shall be reported to the Administrator:

(1) Calendar dates covered in the reporting period;

(2) Each 30-day average SO<sub>2</sub> emission rate (ng/J or lb/MMBtu heat input) measured during the reporting period, ending with the last 30-day period; reasons for noncompliance with the emission standards; and a description of corrective actions taken; For an exceedance due to maintenance of the SO<sub>2</sub> control system covered in paragraph 60.45b(a), the report shall identify the days on which the maintenance was performed and a description of the maintenance;

(3) Each 30-day average percent reduction in SO<sub>2</sub> emissions calculated during the reporting period, ending with the last 30-day period; reasons for noncompliance with the emission standards; and a description of corrective actions taken;

(4) Identification of the steam generating unit operating days that coal or oil was combusted and 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 in the steam generating unit operating day; justification for not obtaining sufficient data; and description of corrective action taken;

(5) Identification of the times when emissions data have been excluded from the calculation of average emission rates; justification for excluding data; and description of corrective action 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 "F" factor used for calculations, method of determination, and type of fuel combusted;

(7) Identification of times when hourly averages have been obtained based on manual sampling methods;

(8) Identification of the times when the pollutant concentration exceeded full span of the CEMS;

(9) Description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specification 2 or 3;

(10) Results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1 of this part; and

(11) The annual capacity factor of each fired as provided under paragraph (d) of this section.

(l) For each affected facility subject to the compliance and performance testing requirements of §60.45b(d) and the reporting requirements of paragraph (j) of this section, the following information shall be reported to the Administrator:

(1) Calendar dates when the facility was in operation during the reporting period;

(2) The 24-hour average SO<sub>2</sub> emission rate measured for each steam generating unit operating day during the reporting period that coal or oil was combusted, ending in the last 24-hour period in the quarter; reasons for noncompliance with the emission standards; and a description of corrective actions taken;

(3) Identification of the steam generating unit operating days that coal or oil was combusted 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 description of corrective action taken;

(4) Identification of the times when emissions data have been excluded from the calculation of average emission rates; justification for excluding data; and description of corrective action taken if data have been excluded for periods other than those during which coal or oil were not combusted in the steam generating unit;

(5) Identification of "F" factor used for calculations, method of determination, and type of fuel combusted;

(6) Identification of times when hourly averages have been obtained based on manual sampling methods;

(7) Identification of the times when the pollutant concentration exceeded full span of the CEMS;

(8) Description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specification 2 or 3; and

(9) Results of daily CEMS drift tests and quarterly accuracy assessments as required under Procedure 1 of appendix F 1 of this part. If the owner or operator elects to implement the alternative data assessment procedures described in §§60.47b(e)(4)(i) through (e)(4)(iii), each data assessment report shall include a summary of the results of all of the RATAs, linearity checks, CGAs, and calibration error or drift assessments required by §§60.47b(e)(4)(i) through (e)(4)(iii).

(m) For each affected facility subject to the SO<sub>2</sub> standards in §60.42(b) for which the minimum amount of data required in §60.47b(c) were not obtained during the reporting period, the following information is reported to the Administrator in addition to that required under paragraph (k) of this section:

- (1) The number of hourly averages available for outlet emission rates and inlet emission rates;
  - (2) The standard deviation of hourly averages for outlet emission rates and inlet emission rates, as determined in Method 19 of appendix A of this part, section 7;
  - (3) The lower confidence limit for the mean outlet emission rate and the upper confidence limit for the mean inlet emission rate, as calculated in Method 19 of appendix A of this part, section 7; and
  - (4) The ratio of the lower confidence limit for the mean outlet emission rate and the allowable emission rate, as determined in Method 19 of appendix A of this part, section 7.
- (n) If a percent removal efficiency by fuel pretreatment (*i.e.*, %R<sub>f</sub>) is used to determine the overall percent reduction (*i.e.*, %R<sub>o</sub>) under §60.45b, the owner or operator of the affected facility shall submit a signed statement with the report.
- (1) Indicating what removal efficiency by fuel pretreatment (*i.e.*, %R<sub>f</sub>) was credited during the reporting period;
  - (2) Listing the quantity, heat content, and date each pre-treated fuel shipment was received during the reporting period, the name and location of the fuel pretreatment facility; and the total quantity and total heat content of all fuels received at the affected facility during the reporting period;
  - (3) Documenting the transport of the fuel from the fuel pretreatment facility to the steam generating unit; and
  - (4) Including a signed statement from the owner or operator of the fuel pretreatment facility certifying that the percent removal efficiency achieved by fuel pretreatment was determined in accordance with the provisions of Method 19 of appendix A of this part and listing the heat content and sulfur content of each fuel before and after fuel pretreatment.
- (o) All records required under this section shall be maintained by the owner or operator of the affected facility for a period of 2 years following the date of such record.
- (p) The owner or operator of an affected facility described in §60.44b(j) or (k) shall maintain records of the following information for each steam generating unit operating day:
- (1) Calendar date;
  - (2) The number of hours of operation; and
  - (3) A record of the hourly steam load.
- (q) The owner or operator of an affected facility described in §60.44b(j) or §60.44b(k) shall submit to the Administrator a report containing:
- (1) The annual capacity factor over the previous 12 months;
  - (2) The average fuel nitrogen content during the reporting period, if residual oil was fired; and
  - (3) If the affected facility meets the criteria described in §60.44b(j), the results of any NO<sub>x</sub> emission tests required during the reporting period, the hours of operation during the reporting period, and the hours of operation since the last NO<sub>x</sub> emission test.
- (r) The owner or operator of an affected facility who elects to use the fuel based compliance alternatives in §60.42b or §60.43b shall either:
- (1) The owner or operator of an affected facility who elects to demonstrate that the affected facility combusts only very low sulfur oil, natural gas, wood, a mixture of these fuels, or any of these fuels (or a mixture of these fuels) in combination with other fuels that are known to contain an insignificant amount of sulfur in §60.42b(j) or §60.42b(k) shall obtain and maintain at the affected facility fuel receipts (such as a current, valid purchase contract, tariff sheet, or transportation contract) from the fuel supplier that certify that the oil meets the definition of distillate oil and gaseous fuel meets the definition of natural gas as defined in §60.41b and the applicable sulfur limit. For the purposes of this section, the distillate oil need not meet the fuel nitrogen content specification in the definition of distillate oil. Reports shall be submitted to the Administrator certifying that only very low sulfur oil

meeting this definition, natural gas, wood, and/or other fuels that are known to contain insignificant amounts of sulfur were combusted in the affected facility during the reporting period; or

(2) The owner or operator of an affected facility who elects to demonstrate compliance based on fuel analysis in §60.42b or §60.43b shall develop and submit a site-specific fuel analysis plan to the Administrator for review and approval no later than 60 days before the date you intend to demonstrate compliance. Each fuel analysis plan shall include a minimum initial requirement of weekly testing and each analysis report shall contain, at a minimum, the following information:

- (i) The potential sulfur emissions rate of the representative fuel mixture in ng/J heat input;
  - (ii) The method used to determine the potential sulfur emissions rate of each constituent of the mixture. For distillate oil and natural gas a fuel receipt or tariff sheet is acceptable;
  - (iii) The ratio of different fuels in the mixture; and
  - (iv) The owner or operator can petition the Administrator to approve monthly or quarterly sampling in place of weekly sampling.
- (s) Facility specific NO<sub>x</sub> standard for Cytec Industries Fortier Plant's C.AOG incinerator located in Westwego, Louisiana:

(1) *Definitions.*

*Oxidation zone* is defined as the portion of the C.AOG incinerator that extends from the inlet of the oxidizing zone combustion air to the outlet gas stack.

*Reducing zone* is defined as the portion of the C.AOG incinerator that extends from the burner section to the inlet of the oxidizing zone combustion air.

*Total inlet air* is defined as the total amount of air introduced into the C.AOG incinerator for combustion of natural gas and chemical by-product waste and is equal to the sum of the air flow into the reducing zone and the air flow into the oxidation zone.

(2) *Standard for nitrogen oxides.* (i) When fossil fuel alone is combusted, the NO<sub>x</sub> emission limit for fossil fuel in §60.44b(a) applies.

(ii) When natural gas and chemical by-product waste are simultaneously combusted, the NO<sub>x</sub> emission limit is 289 ng/J (0.67 lb/MMBtu) and a maximum of 81 percent of the total inlet air provided for combustion shall be provided to the reducing zone of the C.AOG incinerator.

(3) *Emission monitoring.* (i) The percent of total inlet air provided to the reducing zone shall be determined at least every 15 minutes by measuring the air flow of all the air entering the reducing zone and the air flow of all the air entering the oxidation zone, and compliance with the percentage of total inlet air that is provided to the reducing zone shall be determined on a 3-hour average basis.

(ii) The NO<sub>x</sub> emission limit shall be determined by the compliance and performance test methods and procedures for NO<sub>x</sub> in §60.46b(i).

(iii) The monitoring of the NO<sub>x</sub> emission limit shall be performed in accordance with §60.48b.

(4) *Reporting and recordkeeping requirements.* (i) The owner or operator of the C.AOG incinerator shall submit a report on any excursions from the limits required by paragraph (a)(2) of this section to the Administrator with the quarterly report required by paragraph (i) of this section.

(ii) The owner or operator of the C.AOG incinerator shall keep records of the monitoring required by paragraph (a)(3) of this section for a period of 2 years following the date of such record.

(iii) The owner or operator of the C.AOG incinerator shall perform all the applicable reporting and recordkeeping requirements of this section.

(t) Facility-specific NO<sub>x</sub> standard for Rohm and Haas Kentucky Incorporated's Boiler No. 100 located in Louisville, Kentucky:

(1) *Definitions.*



*Air ratio control damper* is defined as the part of the low NO<sub>x</sub> burner that is adjusted to control the split of total combustion air delivered to the reducing and oxidation portions of the combustion flame.

*Flue gas recirculation line* is defined as the part of Boiler No. 100 that recirculates a portion of the boiler flue gas back into the combustion air.

(2) *Standard for nitrogen oxides.* (i) When fossil fuel alone is combusted, the NO<sub>x</sub> emission limit for fossil fuel in §60.44b(a) applies.

(ii) When fossil fuel and chemical by-product waste are simultaneously combusted, the NO<sub>x</sub> emission limit is 473 ng/J (1.1 lb/MMBtu), and the air ratio control damper tee handle shall be at a minimum of 5 inches (12.7 centimeters) out of the boiler, and the flue gas recirculation line shall be operated at a minimum of 10 percent open as indicated by its valve opening position indicator.

(3) *Emission monitoring for nitrogen oxides.* (i) The air ratio control damper tee handle setting and the flue gas recirculation line valve opening position indicator setting shall be recorded during each 8-hour operating shift.

(ii) The NO<sub>x</sub> emission limit shall be determined by the compliance and performance test methods and procedures for NO<sub>x</sub> in §60.46b.

(iii) The monitoring of the NO<sub>x</sub> emission limit shall be performed in accordance with §60.48b.

(4) *Reporting and recordkeeping requirements.* (i) The owner or operator of Boiler No. 100 shall submit a report on any excursions from the limits required by paragraph (b)(2) of this section to the Administrator with the quarterly report required by §60.49b(i).

(ii) The owner or operator of Boiler No. 100 shall keep records of the monitoring required by paragraph (b)(3) of this section for a period of 2 years following the date of such record.

(iii) The owner or operator of Boiler No. 100 shall perform all the applicable reporting and recordkeeping requirements of §60.49b.

(u) *Site-specific standard for Merck & Co., Inc.'s Stonewall Plant in Elkton, Virginia.* (1) This paragraph (u) applies only to the pharmaceutical manufacturing facility, commonly referred to as the Stonewall Plant, located at Route 340 South, in Elkton, Virginia ("site") and only to the natural gas-fired boilers installed as part of the powerhouse conversion required pursuant to 40 CFR 52.2454(g). The requirements of this paragraph shall apply, and the requirements of §§60.40b through 60.49b(t) shall not apply, to the natural gas-fired boilers installed pursuant to 40 CFR 52.2454(g).

(i) The site shall equip the natural gas-fired boilers with low NO<sub>x</sub> technology.

(ii) The site shall install, calibrate, maintain, and operate a continuous monitoring and recording system for measuring NO<sub>x</sub> emissions discharged to the atmosphere and opacity using a continuous emissions monitoring system or a predictive emissions monitoring system.

(iii) Within 180 days of the completion of the powerhouse conversion, as required by 40 CFR 52.2454, the site shall perform a performance test to quantify criteria pollutant emissions.

(2) [Reserved]

(v) The owner or operator of an affected facility may submit electronic quarterly reports for SO<sub>2</sub> and/or NO<sub>x</sub> and/or opacity in lieu of submitting the written reports required under paragraphs (h), (i), (j), (k) or (l) of this section. The format of each quarterly electronic report shall be coordinated with the permitting authority. The electronic report(s) shall be submitted no later than 30 days after the end of the calendar quarter and shall be accompanied by a certification statement from the owner or operator, indicating whether compliance with the applicable emission standards and minimum data requirements of this subpart was achieved during the reporting period. Before submitting reports in the electronic format, the owner or operator shall coordinate with the permitting authority to obtain their agreement to submit reports in this alternative format.

(w) The reporting period for the reports required under this subpart is each 6 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.

(x) Facility-specific NO<sub>x</sub> standard for Weyerhaeuser Company's No. 2 Power Boiler located in New Bern, North Carolina:

(1) *Standard for nitrogen oxides.* (i) When fossil fuel alone is combusted, the NO<sub>x</sub> emission limit for fossil fuel in §60.44b(a) applies.

(ii) When fossil fuel and chemical by-product waste are simultaneously combusted, the NO<sub>x</sub> emission limit is 215 ng/J (0.5 lb/MMBtu).

(2) *Emission monitoring for nitrogen oxides.* (i) The NO<sub>x</sub> emissions shall be determined by the compliance and performance test methods and procedures for NO<sub>x</sub> in §60.46b.

(ii) The monitoring of the NO<sub>x</sub> emissions shall be performed in accordance with §60.48b.

(3) *Reporting and recordkeeping requirements.* (i) The owner or operator of the No. 2 Power Boiler shall submit a report on any excursions from the limits required by paragraph (x)(2) of this section to the Administrator with the quarterly report required by §60.49b(i).

(ii) The owner or operator of the No. 2 Power Boiler shall keep records of the monitoring required by paragraph (x)(3) of this section for a period of 2 years following the date of such record.

(iii) The owner or operator of the No. 2 Power Boiler shall perform all the applicable reporting and recordkeeping requirements of §60.49b.

(y) Facility-specific NO<sub>x</sub> standard for INEOS USA's AOGI located in Lima, Ohio:

(1) *Standard for NO<sub>x</sub>.* (i) When fossil fuel alone is combusted, the NO<sub>x</sub> emission limit for fossil fuel in §60.44b(a) applies.

(ii) When fossil fuel and chemical byproduct/waste are simultaneously combusted, the NO<sub>x</sub> emission limit is 645 ng/J (1.5 lb/MMBtu).

(2) *Emission monitoring for NO<sub>x</sub>.* (i) The NO<sub>x</sub> emissions shall be determined by the compliance and performance test methods and procedures for NO<sub>x</sub> in §60.46b.

(ii) The monitoring of the NO<sub>x</sub> emissions shall be performed in accordance with §60.48b.

(3) *Reporting and recordkeeping requirements.* (i) The owner or operator of the AOGI shall submit a report on any excursions from the limits required by paragraph (y)(2) of this section to the Administrator with the quarterly report required by paragraph (i) of this section.

(ii) The owner or operator of the AOGI shall keep records of the monitoring required by paragraph (y)(3) of this section for a period of 2 years following the date of such record.

(iii) The owner or operator of the AOGI shall perform all the applicable reporting and recordkeeping requirements of this section.

[72 FR 32742, June 13, 2007, as amended at 74 FR 5089, Jan. 28, 2009; 77 FR 9461, Feb. 16, 2012]

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## Appendix B

### ADEQ CEMS Operating Conditions



# Arkansas Department of Environmental Quality



## CONTINUOUS EMISSION MONITORING SYSTEMS CONDITIONS

Revised September 2013

## PREAMBLE

These conditions are intended to outline the requirements for facilities required to operate Continuous Emission Monitoring Systems/Continuous Opacity Monitoring Systems (CEMS/COMS). Generally there are three types of sources required to operate CEMS/COMS:

1. CEMS/COMS required by 40 CFR Part 60 or 63,
2. CEMS required by 40 CFR Part 75,
3. CEMS/COMS required by ADEQ permit for reasons other than Part 60, 63 or 75.

These CEMS/COMS conditions are not intended to supercede Part 60, 63 or 75 requirements.

- Only CEMS/COMS in the third category (those required by ADEQ permit for reasons other than Part 60, 63, or 75) shall comply with SECTION II, MONITORING REQUIREMENTS and SECTION IV, QUALITY ASSURANCE/QUALITY CONTROL.
- All CEMS/COMS shall comply with Section III, NOTIFICATION AND RECORDKEEPING.

## SECTION I

### DEFINITIONS

**Continuous Emission Monitoring System (CEMS)** - The total equipment required for the determination of a gas concentration and/or emission rate so as to include sampling, analysis and recording of emission data.

**Continuous Opacity Monitoring System (COMS)** - The total equipment required for the determination of opacity as to include sampling, analysis and recording of emission data.

**Calibration Drift (CD)** - The difference in the CEMS output reading from the established reference value after a stated period of operation during which no unscheduled maintenance, repair, or adjustments took place.

**Back-up CEMS (Secondary CEMS)** - A CEMS with the ability to sample, analyze and record stack pollutant to determine gas concentration and/or emission rate. This CEMS is to serve as a back-up to the primary CEMS to minimize monitor downtime.

**Excess Emissions** - Any period in which the emissions exceed the permit limits.

**Monitor Downtime** - Any period during which the CEMS/COMS is unable to sample, analyze and record a minimum of four evenly spaced data points over an hour, except during one daily zero-span check during which two data points per hour are sufficient.

**Out-of-Control Period** - Begins with the time corresponding to the completion of the fifth, consecutive, daily CD check with a CD in excess of two times the allowable limit, or the time corresponding to the completion of the daily CD check preceding the daily CD check that results in a CD in excess of four times the allowable limit and the time corresponding to the completion of the sampling for the Relative Accuracy Test Audit (RATA), Relative Accuracy Audit (RAA), or Cylinder Gas Audit (CGA) which exceeds the limits outlined in Section IV. Out-of-Control Period ends with the time corresponding to the completion of the CD check following corrective action with the results being within the allowable CD limit or the completion of the sampling of the subsequent successful RATA, RAA, or CGA.

**Primary CEMS** - The main reporting CEMS with the ability to sample, analyze, and record stack pollutant to determine gas concentration and/or emission rate.

**Relative Accuracy (RA)** - The absolute mean difference between the gas concentration or emission rate determined by the CEMS and the value determined by the reference method plus the 2.5 percent error confidence coefficient of a series of tests divided by the mean of the reference method tests of the applicable emission limit.

**Span Value** – The upper limit of a gas concentration measurement range.

## SECTION II

### MONITORING REQUIREMENTS

\*\* Only CEMS/COMS required by ADEQ permit for reasons other than Part 60, 63 or 75 shall comply with this section.

- A. For new sources, the installation date for the CEMS/COMS shall be no later than thirty (30) days from the date of start-up of the source.
- B. For existing sources, the installation date for the CEMS/COMS shall be no later than sixty (60) days from the issuance of the permit unless the permit requires a specific date.
- C. Within sixty (60) days of installation of a CEMS/COMS, a performance specification test (PST) must be completed. PST's are defined in 40 CFR, Part 60, Appendix B, PS 1-9. The Department may accept alternate PST's for pollutants not covered by Appendix B on a case-by-case basis. Alternate PST's shall be approved, in writing, by the ADEQ CEM Coordinator prior to testing.
- D. Each CEMS/COMS shall have, as a minimum, a daily zero-span check. The zero-span shall be adjusted whenever the 24-hour zero or 24-hour span drift exceeds two times the limits in the applicable performance specification in 40 CFR, Part 60, Appendix B. Before any adjustments are made to either the zero or span drifts measured at the 24-hour interval, the excess zero and span drifts measured must be quantified and recorded.
- E. All CEMS/COMS shall be in continuous operation and shall meet minimum frequency of operation requirements of 95% up-time for each quarter for each pollutant measured. Percent of monitor down-time is calculated by dividing the total minutes the monitor is not in operation by the total time in the calendar quarter and multiplying by one hundred. Failure to maintain operation time shall constitute a violation of the CEMS conditions.
- F. Percent of excess emissions are calculated by dividing the total minutes of excess emissions by the total time the source operated and multiplying by one hundred. Failure to maintain compliance may constitute a violation of the CEMS conditions.
- G. All CEMS measuring emissions shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive fifteen minute period unless more cycles are required by the permit. For each CEMS, one-hour averages shall be computed from four or more data points equally spaced over each one hour period unless more data points are required by the permit.
- H. All COMS shall complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive 6-minute period.
- I. When the pollutant from a single affected facility is released through more than one point, a CEMS/COMS shall be installed on each point unless installation of fewer systems is approved, in writing, by the ADEQ



CEM Coordinator. When more than one CEM/COM is used to monitor emissions from one affected facility the owner or operator shall report the results as required from each CEMS/COMS.

## SECTION III

### NOTIFICATION AND RECORD KEEPING

\*\* All CEMS/COMS shall comply with this section.

- A. When requested to do so by an owner or operator, the ADEQ CEM Coordinator will review plans for installation or modification for the purpose of providing technical advice to the owner or operator.
- B. Each facility which operates a CEMS/COMS shall notify the ADEQ CEM Coordinator of the date for which the demonstration of the CEMS/COMS performance will commence (i.e. PST, RATA, RAA, CGA). Notification shall be received in writing no less than 15 business days prior to testing. Performance test results shall be submitted to the Department within thirty days after completion of testing.
- C. Each facility which operates a CEMS/COMS shall maintain records of the occurrence and duration of start up/shut down, cleaning/soot blowing, process problems, fuel problems, or other malfunction in the operation of the affected facility which causes excess emissions. This includes any malfunction of the air pollution control equipment or any period during which a continuous monitoring device/system is inoperative.
- D. Each facility required to install a CEMS/COMS shall submit an excess emission and monitoring system performance report to the Department (Attention: Air Division, CEM Coordinator) at least quarterly, unless more frequent submittals are warranted to assess the compliance status of the facility. Quarterly reports shall be postmarked no later than the 30th day of the month following the end of each calendar quarter.
- E. All excess emissions shall be reported in terms of the applicable standard. Each report shall be submitted on ADEQ Quarterly Excess Emission Report Forms. Alternate forms may be used with prior written approval from the Department.
- F. Each facility which operates a CEMS/COMS must maintain on site a file of CEMS/COMS data including all raw data, corrected and adjusted, repair logs, calibration checks, adjustments, and test audits. This file must be retained for a period of at least five years, and is required to be maintained in such a condition that it can easily be audited by an inspector.
- G. Quarterly reports shall be used by the Department to determine compliance with the permit.

## SECTION IV

### QUALITY ASSURANCE/QUALITY CONTROL

\*\* Only CEMS/COMS required by ADEQ permit for reasons other than Part 60, 63 or 75 shall comply with this section.

- A. For each CEMS/COMS a Quality Assurance/Quality Control (QA/QC) plan shall be submitted to the Department (Attn.: Air Division, CEM Coordinator). CEMS quality assurance procedures are defined in 40 CFR, Part 60, Appendix F. This plan shall be submitted within 180 days of the CEMS/COMS installation. A QA/QC plan shall consist of procedure and practices which assures acceptable level of monitor data accuracy, precision, representativeness, and availability.
- B. The submitted QA/QC plan for each CEMS/COMS shall not be considered as accepted until the facility receives a written notification of acceptance from the Department.
- C. Facilities responsible for one, or more, CEMS/COMS used for compliance monitoring shall meet these minimum requirements and are encouraged to develop and implement a more extensive QA/QC program, or to continue such programs where they already exist. Each QA/QC program must include written procedures which should describe in detail, complete, step-by-step procedures and operations for each of the following activities:
  - 1. Calibration of CEMS/COMS
    - a. Daily calibrations (including the approximate time(s) that the daily zero and span drifts will be checked and the time required to perform these checks and return to stable operation)
  - 2. Calibration drift determination and adjustment of CEMS/COMS
    - a. Out-of-control period determination
    - b. Steps of corrective action
  - 3. Preventive maintenance of CEMS/COMS
    - a. CEMS/COMS information
      - 1) Manufacture
      - 2) Model number
      - 3) Serial number
    - b. Scheduled activities (check list)
    - c. Spare part inventory
  - 4. Data recording, calculations, and reporting
  - 5. Accuracy audit procedures including sampling and analysis methods
  - 6. Program of corrective action for malfunctioning CEMS/COMS
- D. A Relative Accuracy Test Audit (RATA), shall be conducted at least once every four calendar quarters. A Relative Accuracy Audit (RAA), or a Cylinder Gas Audit (CGA), may be conducted in the other three

quarters but in no more than three quarters in succession. The RATA should be conducted in accordance with the applicable test procedure in 40 CFR Part 60 Appendix A and calculated in accordance with the applicable performance specification in 40 CFR Part 60 Appendix B. CGA's and RAA's should be conducted and the data calculated in accordance with the procedures outlined on 40 CFR Part 60 Appendix F.

If alternative testing procedures or methods of calculation are to be used in the RATA, RAA or CGA audits prior authorization must be obtained from the ADEQ CEM Coordinator.

E. Criteria for excessive audit inaccuracy.

**RATA**

All Pollutants except Carbon Monoxide	> 20% Relative Accuracy
Carbon Monoxide	> 10% Relative Accuracy
All Pollutants except Carbon Monoxide	> 10% of the Applicable Standard
Carbon Monoxide	> 5% of the Applicable Standard
Diluent (O <sub>2</sub> & CO <sub>2</sub> )	> 1.0 % O <sub>2</sub> or CO <sub>2</sub>
Flow	> 20% Relative Accuracy

**CGA**

Pollutant	> 15% of average audit value or 5 ppm difference
Diluent (O <sub>2</sub> & CO <sub>2</sub> )	> 15% of average audit value or 5 ppm difference

**RAA**

Pollutant	> 15% of the three run average or > 7.5 % of the applicable standard
Diluent (O <sub>2</sub> & CO <sub>2</sub> )	> 15% of the three run average or > 7.5 % of the applicable standard

- F. If either the zero or span drift results exceed two times the applicable drift specification in 40 CFR, Part 60, Appendix B for five consecutive, daily periods, the CEMS is out-of-control. If either the zero or span drift results exceed four times the applicable drift specification in Appendix B during a calibration drift check, the CEMS is out-of-control. If the CEMS exceeds the audit inaccuracies listed above, the CEMS is out-of-control. If a CEMS is out-of-control, the data from that out-of-control period is not counted towards meeting the minimum data availability as required and described in the applicable subpart. The end of the out-of-control period is the time corresponding to the completion of the successful daily zero or span drift or completion of the successful CGA, RAA or RATA.
- G. A back-up monitor may be placed on an emission source to minimize monitor downtime. This back-up CEMS is subject to the same QA/QC procedure and practices as the primary CEMS. The back-up CEMS shall be certified by a PST. Daily zero-span checks must be performed and recorded in accordance with standard practices. When the primary CEMS goes down, the back-up CEMS may then be engaged to sample, analyze and record the emission source pollutant until repairs are made and the primary unit is placed back in service. Records must be maintained on site when the back-up CEMS is placed in service, these records shall include at a minimum the reason the primary CEMS is out of service, the date and time the primary CEMS was out of service and the date and time the primary CEMS was placed back in service.



Appendix C

40 CFR Part 60, Subpart BB, *Standards of Performance for Kraft Pulp Mills*





## ELECTRONIC CODE OF FEDERAL REGULATIONS

e-CFR Data is current as of October 14, 2013

Title 40: Protection of Environment  
PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

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### Subpart BB—Standards of Performance for Kraft Pulp Mills

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#### §60.280 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities in kraft pulp mills: Digester system, brown stock washer system, multiple-effect evaporator system, recovery furnace, smelt dissolving tank, lime kiln, and condensate stripper system. In pulp mills where kraft pulping is combined with neutral sulfite semichemical pulping, the provisions of this subpart are applicable when any portion of the material charged to an affected facility is produced by the kraft pulping operation.

(b) Except as noted in §60.283(a)(1)(iv), any facility under paragraph (a) of this section that commences construction or modification after September 24, 1976, is subject to the requirements of this subpart.

[51 FR 18544, May 20, 1986]

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#### §60.281 Definitions.

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

(a) *Kraft pulp mill* means any stationary source which produces pulp from wood by cooking (digesting) wood chips in a water solution of sodium hydroxide and sodium sulfide (white liquor) at high temperature and pressure. Regeneration of the cooking chemicals through a recovery process is also considered part of the kraft pulp mill.

(b) *Neutral sulfite semichemical pulping operation* means any operation in which pulp is produced from wood by cooking (digesting) wood chips in a solution of sodium sulfite and sodium bicarbonate, followed by mechanical defibrating (grinding).

(c) *Total reduced sulfur (TRS)* means the sum of the sulfur compounds hydrogen sulfide, methyl mercaptan, dimethyl sulfide, and dimethyl disulfide, that are released during the kraft pulping operation and measured by Method 16.

(d) *Digester system* means each continuous digester or each batch digester used for the cooking of wood in white liquor, and associated flash tank(s), blow tank(s), chip steamer(s), and condenser(s).

(e) *Brown stock washer system* means brown stock washers and associated knotters, vacuum pumps, and filtrate tanks used to wash the pulp following the digester system. Diffusion washers are excluded from this definition.

(f) *Multiple-effect evaporator system* means the multiple-effect evaporators and associated condenser(s) and hotwell(s) used to concentrate the spent cooking liquid that is separated from the pulp (black liquor).

(g) *Black liquor oxidation system* means the vessels used to oxidize, with air or oxygen, the black liquor, and associated storage tank(s).

(h) *Recovery furnace* means either a straight kraft recovery furnace or a cross recovery furnace, and includes the direct-contact evaporator for a direct-contact furnace.

(i) *Straight kraft recovery furnace* means a furnace used to recover chemicals consisting primarily of sodium and sulfur compounds by burning black liquor which on a quarterly basis contains 7 weight percent or less of the total pulp solids from the neutral sulfite semichemical process or has green liquor sulfidity of 28 percent or less.

(j) *Cross recovery furnace* means a furnace used to recover chemicals consisting primarily of sodium and sulfur compounds by burning black liquor which on a quarterly basis contains more than 7 weight percent of the total pulp solids from the neutral sulfite semichemical process and has a green liquor sulfidity of more than 28 percent.

(k) *Black liquor solids* means the dry weight of the solids which enter the recovery furnace in the black liquor.

(l) *Green liquor sulfidity* means the sulfidity of the liquor which leaves the smelt dissolving tank.

(m) *Smelt dissolving tank* means a vessel used for dissolving the smelt collected from the recovery furnace.

(n) *Lime kiln* means a unit used to calcine lime mud, which consists primarily of calcium carbonate, into quicklime, which is calcium oxide.

(o) *Condensate stripper system* means a column, and associated condensers, used to strip, with air or steam, TRS compounds from condensate streams from various processes within a kraft pulp mill.

[43 FR 7572, Feb. 23, 1978, as amended at 51 FR 18544, May 20, 1986; 65 FR 61758, Oct. 17, 2000]

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#### **§60.282 Standard for particulate matter.**

(a) On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere:

(1) From any recovery furnace any gases which:

(i) Contain particulate matter in excess of 0.10 g/dscm (0.044 gr/dscf) corrected to 8 percent oxygen.

(ii) Exhibit 35 percent opacity or greater.

(2) From any smelt dissolving tank any gases which contain particulate matter in excess of 0.1 g/kg black liquor solids (dry weight)[0.2 lb/ton black liquor solids (dry weight)].

(3) From any lime kiln any gases which contain particulate matter in excess of:

(i) 0.15 g/dscm (0.066 gr/dscf) corrected to 10 percent oxygen, when gaseous fossil fuel is burned.

(ii) 0.30 g/dscm (0.13 gr/dscf) corrected to 10 percent oxygen, when liquid fossil fuel is burned.

[43 FR 7572, Feb. 23, 1978, as amended at 65 FR 61758, Oct. 17, 2000]

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**§60.283 Standard for total reduced sulfur (TRS).**

(a) On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere:

(1) From any digester system, brown stock washer system, multiple-effect evaporator system, or condensate stripper system any gases which contain TRS in excess of 5 ppm by volume on a dry basis, corrected to 10 percent oxygen, unless the following conditions are met:

(i) The gases are combusted in a lime kiln subject to the provisions of paragraph (a)(5) of this section; or

(ii) The gases are combusted in a recovery furnace subject to the provisions of paragraphs (a)(2) or (a)(3) of this section; or

(iii) The gases are combusted with other waste gases in an incinerator or other device, or combusted in a lime kiln or recovery furnace not subject to the provisions of this subpart, and are subjected to a minimum temperature of 650 °C (1200 °F) for at least 0.5 second; or

(iv) It has been demonstrated to the Administrator's satisfaction by the owner or operator that incinerating the exhaust gases from a new, modified, or reconstructed brown stock washer system is technologically or economically unfeasible. Any exempt system will become subject to the provisions of this subpart if the facility is changed so that the gases can be incinerated.

(v) The gases from the digester system, brown stock washer system, or condensate stripper system are controlled by a means other than combustion. In this case, this system shall not discharge any gases to the atmosphere which contain TRS in excess of 5 ppm by volume on a dry basis, uncorrected for oxygen content.

(vi) The uncontrolled exhaust gases from a new, modified, or reconstructed digester system contain TRS less than 0.005 g/kg air dried pulp (ADP) (0.01 lb/ton ADP).

(2) From any straight kraft recovery furnace any gases which contain TRS in excess of 5 ppm by volume on a dry basis, corrected to 8 percent oxygen.

(3) From any cross recovery furnace any gases which contain TRS in excess of 25 ppm by volume on a dry basis, corrected to 8 percent oxygen.

(4) From any smelt dissolving tank any gases which contain TRS in excess of 0.016 g/kg black liquor solids as H<sub>2</sub>S (0.033 lb/ton black liquor solids as H<sub>2</sub>S).

(5) From any lime kiln any gases which contain TRS in excess of 8 ppm by volume on a dry basis, corrected to 10 percent oxygen.

[43 FR 7572, Feb. 23, 1978, as amended at 50 FR 6317, Feb. 14, 1985; 51 FR 18544, May 20, 1986; 65 FR 61758, Oct. 17, 2000]

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**§60.284 Monitoring of emissions and operations.**

(a) Any owner or operator subject to the provisions of this subpart shall install, calibrate, maintain, and operate the following continuous monitoring systems:

(1) A continuous monitoring system to monitor and record the opacity of the gases discharged into the atmosphere from any recovery furnace. The span of this system shall be set at 70 percent opacity.

(2) Continuous monitoring systems to monitor and record the concentration of TRS emissions on a dry basis and the percent of oxygen by volume on a dry basis in the gases discharged into the atmosphere from any lime kiln, recovery furnace, digester system, brown stock washer system, multiple-effect evaporator system, or condensate stripper system, except where the provisions of §60.283(a)(1) (iii) or (iv) apply. These systems shall be located downstream of the control device(s) and the spans of these continuous monitoring system(s) shall be set:

(i) At a TRS concentration of 30 ppm for the TRS continuous monitoring system, except that for any cross recovery furnace the span shall be set at 50 ppm.

(ii) At 25 percent oxygen for the continuous oxygen monitoring system.

(b) Any owner or operator subject to the provisions of this subpart shall install, calibrate, maintain, and operate the following continuous monitoring devices:

(1) For any incinerator, a monitoring device which measures and records the combustion temperature at the point of incineration of effluent gases which are emitted from any digester system, brown stock washer system, multiple-effect evaporator system, black liquor oxidation system, or condensate stripper system where the provisions of §60.283(a)(1)(iii) apply. The monitoring device is to be certified by the manufacturer to be accurate within  $\pm 1$  percent of the temperature being measured.

(2) For any lime kiln or smelt dissolving tank using a scrubber emission control device:

(i) A monitoring device for the continuous measurement of the pressure loss of the gas stream through the control equipment. The monitoring device is to be certified by the manufacturer to be accurate to within a gage pressure of  $\pm 500$  pascals (ca.  $\pm 2$  inches water gage pressure).

(ii) A monitoring device for the continuous measurement of the scrubbing liquid supply pressure to the control equipment. The monitoring device is to be certified by the manufacturer to be accurate within  $\pm 15$  percent of design scrubbing liquid supply pressure. The pressure sensor or tap is to be located close to the scrubber liquid discharge point. The Administrator may be consulted for approval of alternative locations.

(c) Any owner or operator subject to the provisions of this subpart shall, except where the provisions of §60.283(a)(1)(iii) or (iv) apply, perform the following:

(1) Calculate and record on a daily basis 12-hour average TRS concentrations for the two consecutive periods of each operating day. Each 12-hour average shall be determined as the arithmetic mean of the appropriate 12 contiguous 1-hour average total reduced sulfur concentrations provided by each continuous monitoring system installed under paragraph (a)(2) of this section.

(2) Calculate and record on a daily basis 12-hour average oxygen concentrations for the two consecutive periods of each operating day for the recovery furnace and lime kiln. These 12-hour averages shall correspond to the 12-hour average TRS concentrations under paragraph (c)(1) of this section and shall be determined as an arithmetic mean of the appropriate 12 contiguous 1-hour average oxygen concentrations provided by each continuous monitoring system installed under paragraph (a)(2) of this section.

(3) Using the following equation, correct all 12-hour average TRS concentrations to 10 volume percent oxygen, except that all 12-hour average TRS concentrations from a recovery furnace shall be corrected to 8 volume percent oxygen instead of 10 percent, and all 12-hour average TRS concentrations from a facility to which the provisions of §60.283(a)(1)(v) apply shall not be corrected for oxygen content:

$$C_{\text{corr}} = C_{\text{meas}} \times (21 - X/21 - Y)$$

where:

$C_{\text{corr}}$  = the concentration corrected for oxygen.

$C_{\text{meas}}$  = the concentration uncorrected for oxygen.

$X$  = the volumetric oxygen concentration in percentage to be corrected to (8 percent for recovery furnaces and 10 percent for lime kilns, incinerators, or other devices).

$Y$  = the measured 12-hour average volumetric oxygen concentration.

(4) Record once per shift measurements obtained from the continuous monitoring devices installed under paragraph (b)(2) of this section.

(d) For the purpose of reports required under §60.7(c), any owner or operator subject to the provisions of this subpart shall report semiannually periods of excess emissions as follows:

(1) For emissions from any recovery furnace periods of excess emissions are:

(i) All 12-hour averages of TRS concentrations above 5 ppm by volume for straight kraft recovery furnaces and above 25 ppm by volume for cross recovery furnaces.

(ii) All 6-minute average opacities that exceed 35 percent.

(2) For emissions from any lime kiln, periods of excess emissions are all 12-hour average TRS concentration above 8 ppm by volume.

(3) For emissions from any digester system, brown stock washer system, multiple-effect evaporator system, or condensate stripper system periods of excess emissions are:

(i) All 12-hour average TRS concentrations above 5 ppm by volume unless the provisions of §60.283(a)(1) (i), (ii), or (iv) apply; or

(ii) All periods in excess of 5 minutes and their duration during which the combustion temperature at the point of incineration is less than 650 °C (1200 °F), where the provisions of §60.283(a)(1)(iii) apply.

(e) The Administrator will not consider periods of excess emissions reported under paragraph (d) of this section to be indicative of a violation of §60.11(d) provided that:

(1) The percent of the total number of possible contiguous periods of excess emissions in a quarter (excluding periods of startup, shutdown, or malfunction and periods when the facility is not operating) during which excess emissions occur does not exceed:

(i) One percent for TRS emissions from recovery furnaces.

(ii) Six percent for average opacities from recovery furnaces.

(2) The Administrator determines that the affected facility, including air pollution control equipment, is maintained and operated in a manner which is consistent with good air pollution control practice for minimizing emissions during periods of excess emissions.

(f) The procedures under §60.13 shall be followed for installation, evaluation, and operation of the continuous monitoring systems required under this section. All continuous monitoring systems shall be operated in accordance with the applicable procedures under Performance Specifications 1, 3, and 5 of appendix B of this part.

[43 FR 7572, Feb. 23, 1978, as amended at 51 FR 18545, May 20, 1986; 65 FR 61759, Oct. 17, 2000; 71 FR 55127, Sept. 21, 2006]

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### **§60.285 Test methods and procedures.**

(a) In conducting the performance tests required in §60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures in this section, except as provided in §60.8(b). Acceptable alternative methods and procedures are given in paragraph (f) of this section.

(b) The owner or operator shall determine compliance with the particulate matter standards in §60.282(a) (1) and (3) as follows:

(1) Method 5 shall be used to determine the particulate matter concentration. The sampling time and sample volume for each run shall be at least 60 minutes and 0.90 dscm (31.8 dscf). Water shall be used as the cleanup solvent instead of acetone in the sample recovery procedure. The particulate concentration shall be corrected to the appropriate oxygen concentration according to §60.284(c)(3).

(2) The emission rate correction factor, integrated sampling and analysis procedure of Method 3B shall be used to determine the oxygen concentration. The gas sample shall be taken at the same time and at the same traverse points as the particulate sample.

(3) Method 9 and the procedures in §60.11 shall be used to determine opacity.

(c) The owner or operator shall determine compliance with the particulate matter standard in §60.282(a)(2) as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$$E = c_s Q_{sd} / \text{BLS}$$

where:

E=emission rate of particulate matter, g/kg (lb/ton) of BLS.

$c_s$  = Concentration of particulate matter, g/dscm (lb/dscf).

$Q_{sd}$ =volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

BLS=black liquor solids (dry weight) feed rate, kg/hr (ton/hr).

(2) Method 5 shall be used to determine the particulate matter concentration ( $c_s$ ) and the volumetric flow rate ( $Q_{sd}$ ) of the effluent gas. The sampling time and sample volume shall be at least 60 minutes and 0.90 dscm (31.8 dscf). Water shall be used instead of acetone in the sample recovery.

(3) Process data shall be used to determine the black liquor solids (BLS) feed rate on a dry weight basis.

(d) The owner or operator shall determine compliance with the TRS standards in §60.283, except §60.283(a)(1)(vi) and (4), as follows:

(1) Method 16 shall be used to determine the TRS concentration. The TRS concentration shall be corrected to the appropriate oxygen concentration using the procedure in §60.284(c)(3). The sampling time shall be at least 3 hours, but no longer than 6 hours.

(2) The emission rate correction factor, integrated sampling and analysis procedure of Method 3B shall be used to determine the oxygen concentration. The sample shall be taken over the same time period as the TRS samples.

(3) When determining whether a furnace is a straight kraft recovery furnace or a cross recovery furnace, TAPPI Method T.624 (incorporated by reference—see §60.17) shall be used to determine sodium sulfide, sodium hydroxide, and sodium carbonate. These determinations shall be made 3 times daily from the green liquor, and the daily average values shall be converted to sodium oxide ( $\text{Na}_2\text{O}$ ) and substituted into the following equation to determine the green liquor sulfidity:

$$GLS = 100 \frac{C_{\text{Na}_2\text{S}}}{C_{\text{Na}_2\text{S}} + C_{\text{NaOH}} + C_{\text{Na}_2\text{CO}_3}}$$

Where:

GLS=green liquor sulfidity, percent.

$C_{\text{Na}_2\text{S}}$ =concentration of  $\text{Na}_2\text{S}$  as  $\text{Na}_2\text{O}$ , mg/liter (gr/gal).

$C_{\text{NaOH}}$ =concentration of  $\text{NaOH}$  as  $\text{Na}_2\text{O}$ , mg/liter (gr/gal).

$C_{\text{Na}_2\text{CO}_3}$ =concentration of  $\text{Na}_2\text{CO}_3$  as  $\text{Na}_2\text{O}$ , mg/liter (gr/gal).

(e) The owner or operator shall determine compliance with the TRS standards in §60.283(a)(1)(vi) and (4) as follows:

(1) The emission rate (E) of TRS shall be computed for each run using the following equation:

$$E = C_{\text{TRS}} F Q_{sd} / P$$

where:

E=emission rate of TRS, g/kg (lb/ton) of BLS or ADP.

$C_{\text{TRS}}$ =average combined concentration of TRS, ppm.

F = conversion factor,  $0.001417 \text{ g H}_2\text{S}/\text{m}^3\text{-ppm}$  ( $8.846 \times 10^{-8} \text{ lb H}_2\text{S}/\text{ft}^3\text{-ppm}$ ).

$Q_{sd}$ =volumetric flow rate of stack gas, dscm/hr (dscf/hr).

P=black liquor solids feed or pulp production rate, kg/hr (ton/hr).

(2) Method 16 shall be used to determine the TRS concentration ( $C_{TRS}$ ).

(3) Method 2 shall be used to determine the volumetric flow rate ( $Q_{sd}$ ) of the effluent gas.

(4) Process data shall be used to determine the black liquor feed rate or the pulp production rate (P).

(f) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

(1) For Method 5, Method 17 may be used if a constant value of 0.009 g/dscm (0.004 gr/dscf) is added to the results of Method 17 and the stack temperature is no greater than 204 °C (400 °F).

(2) In place of Method 16, Method 16A or 16B may be used.

[54 FR 6673, Feb. 14, 1989; 54 FR 21344, May 17, 1989, as amended at 55 FR 5212, Feb. 14, 1990; 65 FR 61759, Oct. 17, 2000]

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Appendix D

CFR Part 63, Subpart S - *National Emission Standards for Hazardous Air Pollutants from the Pulp and Paper Industry*



## ELECTRONIC CODE OF FEDERAL REGULATIONS

e-CFR Data is current as of October 14, 2013

Title 40: Protection of Environment

PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES

### Subpart S—National Emission Standards for Hazardous Air Pollutants from the Pulp and Paper Industry

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Table 1 to Subpart S of Part 63—General Provisions Applicability to Subpart S	

SOURCE: 63 FR 18617, Apr. 15, 1998, unless otherwise noted.

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#### §63.440 Applicability.

(a) The provisions of this subpart apply to the owner or operator of processes that produce pulp, paper, or paperboard; that are located at a plant site that is a major source as defined in §63.2 of subpart A of this part; and that use the following processes and materials:

- (1) Kraft, soda, sulfite, or semi-chemical pulping processes using wood; or
- (2) Mechanical pulping processes using wood; or
- (3) Any process using secondary or non-wood fibers.

(b) The affected source to which the existing sourceprovisions of this subpart apply is as follows:

(1) For the processes specified in paragraph (a)(1) of this section, the affected source is the total of all HAP emission points in the pulping and bleaching systems; or

(2) For the processes specified in paragraphs (a)(2) or (a)(3) of this section, the affected source is the total of all HAP emission points in the bleaching system.

(c) The new source provisions of this subpart apply to the total of all HAP emission points at new or existing sources as follows:

(1) Each affected source defined in paragraph (b)(1) of this section that commences construction or reconstruction after December 17, 1993;

(2) Each pulping system or bleaching system for the processes specified in paragraph (a)(1) of this section that commences construction or reconstruction after December 17, 1993;

(3) Each additional pulping or bleaching line at the processes specified in paragraph (a)(1) of this section, that commences construction after December 17, 1993;

(4) Each affected source defined in paragraph (b)(2) of this section that commences construction or reconstruction after March 8, 1996; or

(5) Each additional bleaching line at the processes specified in paragraphs (a)(2) or (a)(3) of this section, that commences construction after March 8, 1996.

(d) Each existing source shall achieve compliance no later than April 16, 2001, except as provided in paragraphs (d)(1) through (d)(3) of this section.

(1) Each kraft pulping system shall achieve compliance with the pulping system provisions of §63.443 for the equipment listed in §63.443(a)(1)(ii) through (a)(1)(v) as expeditiously as practicable, but in no event later than April 17, 2006 and the owners and operators shall establish dates, update dates, and report the dates for the milestones specified in §63.455(b).

(2) Each dissolving-grade bleaching system at either kraft or sulfite pulping mills shall achieve compliance with the bleach plant provisions of §63.445 of this subpart as expeditiously as practicable, but in no event later than 3 years after the promulgation of the revised effluent limitation guidelines and standards under 40 CFR 430.14 through 430.17 and 40 CFR 430.44 through 430.47.

(3) Each bleaching system complying with the Voluntary Advanced Technology Incentives Program for Effluent Limitation Guidelines in 40 CFR 430.24, shall comply with the requirements specified in either paragraph (d)(3)(i) or (d)(3)(ii) of this section for the effluent limitation guidelines and standards in 40 CFR 430.24.

(i) Comply with the bleach plant provisions of §63.445 of this subpart as expeditiously as practicable, but in no event later than April 16, 2001.

(ii) Comply with paragraphs (d)(3)(ii)(A), (d)(3)(ii)(B), and (d)(3)(ii)(C) of this section.

(A) The owner or operator of a bleaching system shall comply with the bleach plant provisions of §63.445 of this subpart as expeditiously as practicable, but in no event later than April 15, 2004.

(B) The owner or operator of a bleaching system shall comply with the requirements specified in either paragraph (d)(3)(ii)(B)(1) or (d)(3)(ii)(B)(2) of this section.

(1) Not increase the application rate of chlorine or hypochlorite in kilograms (kg) of bleaching agent per megagram of ODP, in the bleaching system above the average daily rates used over the three months prior to June 15, 1998 until the requirements of paragraph (d)(3)(ii)(A) of this section are met and record application rates as specified in §63.454(c).

(2) Comply with enforceable effluent limitations guidelines for 2,3,7,8-tetrachloro-dibenzo-p-dioxin and adsorbable organic halides at least as stringent as the baseline BAT levels set out in 40 CFR 430.24(a)(1) as expeditiously as possible, but in no event later than April 16, 2001.

(C) Owners and operators shall establish dates, update dates, and report the dates for the milestones specified in §63.455(b).

(e) Each new source, specified as the total of all HAP emission points for the sources specified in paragraph (c) of this section, shall achieve compliance upon start-up or June 15, 1998, whichever is later, as provided in §63.6(b) of subpart A of this part.

(f) Each owner or operator of an affected source with affected process equipment shared by more than one type of pulping process, shall comply with the applicable requirement in this subpart that achieves the maximum degree of reduction in HAP emissions.

(g) Each owner or operator of an affected source specified in paragraphs (a) through (c) of this section must comply with the requirements of subpart A—General Provisions of this part, as indicated in table 1 to this subpart.

[63 FR 18617, Apr. 15, 1998, as amended at 63 FR 71389, Dec. 28, 1998]

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### **§63.441 Definitions.**

All terms used in this subpart shall have the meaning given them in the CAA, in subpart A of this part, and in this section as follows:

*Acid condensate storage tank* means any storage tank containing cooking acid following the sulfur dioxide gas fortification process.

*Affirmative defense* means, in the context of an enforcement proceeding, a response or defense put forward by a defendant, regarding which the defendant has the burden of proof, and the merits of which are independently and objectively evaluated in a judicial or administrative proceeding.

*Black liquor* means spent cooking liquor that has been separated from the pulp produced by the kraft, soda, or semi-chemical pulping process.

*Bleaching* means brightening of pulp by the addition of oxidizing chemicals or reducing chemicals.

*Bleaching line* means a group of bleaching stages arranged in series such that bleaching of the pulp progresses as the pulp moves from one stage to the next.

*Bleaching stage* means all process equipment associated with a discrete step of chemical application and removal in the bleaching process including chemical and steam mixers, bleaching towers, washers, seal (filtrate) tanks, vacuum pumps, and any other equipment serving the same function as those previously listed.

*Bleaching system* means all process equipment after high-density pulp storage prior to the first application of oxidizing chemicals or reducing chemicals following the pulping system, up to and including the final bleaching stage.

*Boiler* means any enclosed combustion device that extracts useful energy in the form of steam. A boiler is not considered a thermal oxidizer.

*Chip steamer* means a vessel used for the purpose of preheating or pretreating wood chips prior to the digester, using flash steam from the digester or live steam.

*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, including but not limited to, a thermal oxidizer, lime kiln, recovery furnace, process heater, or boiler, used for the thermal oxidation of organic hazardous air pollutant vapors.

*Decker system* means all equipment used to thicken the pulp slurry or reduce its liquid content after the pulp washing system and prior to high-density pulp storage. The decker system includes decker vents, filtrate tanks, associated vacuum pumps, and any other equipment serving the same function as those previously listed.

*Digester system* means each continuous digester or each batch digester used for the chemical treatment of wood or non-wood fibers. The digester system equipment includes associated flash tank (s), blow tank(s), chip steamer(s) not using fresh steam, blow heat recovery accumulator(s), relief gas condenser(s), prehydrolysis unit(s) preceding the pulp washing system, and any other equipment serving the same function as those previously listed. The digester system includes any of the liquid streams or condensates associated with batch or continuous digester relief, blow, or flash steam processes.

*Emission point* means any part of a stationary source that emits hazardous air pollutants regulated under this subpart, including emissions from individual process vents, stacks, open pieces of

process equipment, equipment leaks, wastewater and condensate collection and treatment system units, and those emissions that could reasonably be conveyed through a stack, chimney, or duct where such emissions first reach the environment.

*Evaporator system* means all equipment associated with increasing the solids content and/or concentrating spent cooking liquor from the pulp washing system including pre-evaporators, multi-effect evaporators, concentrators, and vacuum systems, as well as associated condensers, hotwells, and condensate streams, and any other equipment serving the same function as those previously listed.

*Flow indicator* means any device that indicates gas or liquid flow in an enclosed system.

*HAP* means a hazardous air pollutant as defined in §63.2 of subpart A of this part.

*High volume, low concentration or HVLC collection system* means the gas collection and transport system used to convey gases from the HVLC system to a control device.

*High volume, low concentration or HVLC system* means the collection of equipment including the pulp washing, knotter, screen, decker, and oxygen delignification systems, weak liquor storage tanks, and any other equipment serving the same function as those previously listed.

*Knotted system* means equipment where knots, oversized material, or pieces of uncooked wood are removed from the pulp slurry after the digester system and prior to the pulp washing system. The knotted system equipment includes the knotted, knot drainer tanks, ancillary tanks, and any other equipment serving the same function as those previously listed.

*Kraft pulping* means a chemical pulping process that uses a mixture of sodium hydroxide and sodium sulfide as the cooking liquor.

*Lime kiln* means an enclosed combustion device used to calcine lime mud, which consists primarily of calcium carbonate, into calcium oxide.

*Low volume, high concentration or LVHC collection system* means the gas collection and transport system used to convey gases from the LVHC system to a control device.

*Low volume, high concentration or LVHC system* means the collection of equipment including the digester, turpentine recovery, evaporator, steam stripper systems, and any other equipment serving the same function as those previously listed.

*Mechanical pulping* means a pulping process that only uses mechanical and thermo-mechanical processes to reduce wood to a fibrous mass. The mechanical pulping processes include, but are not limited to, stone groundwood, pressurized groundwood, refiner mechanical, thermal refiner mechanical, thermo-mechanical, and tandem thermo-mechanical.

*Non-wood pulping* means the production of pulp from fiber sources other than trees. The non-wood fiber sources include, but are not limited to, bagasse, cereal straw, cotton, flax straw, hemp, jute, kenaf, and leaf fibers.

*Oven-dried pulp or ODP* means a pulp sample at zero percent moisture content by weight. Pulp samples for applicability or compliance determinations for both the pulping and bleaching systems shall be unbleached pulp. For purposes of complying with mass emission limits in this subpart, megagram of ODP shall be measured to represent the amount of pulp entering and processed by the equipment system under the specified mass limit. For equipment that does not process pulp, megagram of ODP shall be measured to represent the amount of pulp that was processed to produce the gas and liquid streams.

*Oxygen delignification system* means the equipment that uses oxygen to remove lignin from pulp after high-density stock storage and prior to the bleaching system. The oxygen delignification system equipment includes the blow tank, washers, filtrate tanks, any interstage pulp storage tanks, and any other equipment serving the same function as those previously listed.

*Primary fuel* means the fuel that provides the principal heat input to the combustion device. To be considered primary, the fuel must be able to sustain operation of the combustion device without the addition of other fuels.

*Process wastewater treatment system* means a collection of equipment, a process, or specific technique that removes or destroys the HAPs in a process wastewater stream. Examples include, but are not limited to, a steam stripping unit, wastewater thermal oxidizer, or biological treatment unit.

*Pulp washing system* means all equipment used to wash pulp and separate spent cooking chemicals following the digester system and prior to the bleaching system, oxygen delignification system, or paper machine system (at unbleached mills). The pulp washing system equipment includes vacuum drum washers, diffusion washers, rotary pressure washers, horizontal belt filters, intermediate stock chests, and their associated vacuum pumps, filtrate tanks, foam breakers or tanks, and any other equipment serving the same function as those previously listed. The pulp washing system does not include deckers, screens, knotters, stock chests, or pulp storage tanks following the last stage of pulp washing.

*Pulping line* means a group of equipment arranged in series such that the wood chips are digested and the resulting pulp progresses through a sequence of steps that may include knotting, refining, washing, thickening, blending, storing, oxygen delignification, and any other equipment serving the same function as those previously listed.

*Pulping process condensates* means any HAP-containing liquid that results from contact of water with organic compounds in the pulping process. Examples of process condensates include digester system condensates, turpentine recovery system condensates, evaporator system condensates, LVHC system condensates, HVLC system condensates, and any other condensates from equipment serving the same function as those previously listed. Liquid streams that are intended for byproduct recovery are not considered process condensate streams.

*Pulping system* means all process equipment, beginning with the digester system, and up to and including the last piece of pulp conditioning equipment prior to the bleaching system, including treatment with ozone, oxygen, or peroxide before the first application of a chemical bleaching agent intended to brighten pulp. The pulping system includes pulping process condensates and can include multiple pulping lines.

*Recovery furnace* means an enclosed combustion device where concentrated spent liquor is burned to recover sodium and sulfur, produce steam, and dispose of unwanted dissolved wood components in the liquor.

*Screen system* means equipment in which oversized particles are removed from the pulp slurry prior to the bleaching or papermaking system washed stock storage.

*Secondary fiber pulping* means a pulping process that converts a fibrous material, that has previously undergone a manufacturing process, into pulp stock through the addition of water and mechanical energy. The mill then uses that pulp as the raw material in another manufactured product. These mills may also utilize chemical, heat, and mechanical processes to remove ink particles from the fiber stock.

*Semi-chemical pulping* means a pulping process that combines both chemical and mechanical pulping processes. The semi-chemical pulping process produces intermediate yields ranging from 55 to 90 percent.

*Soda pulping* means a chemical pulping process that uses sodium hydroxide as the active chemical in the cooking liquor.

*Spent liquor* means process liquid generated from the separation of cooking liquor from pulp by the pulp washing system containing dissolved organic wood materials and residual cooking compounds.

*Steam stripper system* means a column (including associated stripper feed tanks, condensers, or heat exchangers) used to remove compounds from wastewater or condensates using steam. The steam stripper system also contains all equipment associated with a methanol rectification process including rectifiers, condensers, decanters, storage tanks, and any other equipment serving the same function as those previously listed.

*Strong liquor storage tanks* means all storage tanks containing liquor that has been concentrated in preparation for combustion or oxidation in the recovery process.

*Sulfite pulping* means a chemical pulping process that uses a mixture of sulfurous acid and bisulfite ion as the cooking liquor.

*Temperature monitoring device* means a piece of equipment used to monitor temperature and having an accuracy of  $\pm 1.0$  percent of the temperature being monitored expressed in degrees Celsius or  $\pm 0.5$  degrees Celsius (( °deg;C), whichever is greater.

*Thermal oxidizer* means an enclosed device that destroys organic compounds by thermal oxidation.

*Turpentine recovery system* means all equipment associated with recovering turpentine from digester system gases including condensers, decanters, storage tanks, and any other equipment serving the same function as those previously listed. The turpentine recovery system includes any liquid streams associated with the turpentine recovery process such as turpentine decanter underflow. Liquid streams that are intended for byproduct recovery are not considered turpentine recovery system condensate streams.

*Weak liquor storage tank* means any storage tank except washer filtrate tanks containing spent liquor recovered from the pulping process and prior to the evaporator system.

[63 FR 18617, Apr. 15, 1998, as amended at 64 FR 17563, Apr. 12, 1999; 77 FR 55710, Sept. 11, 2012]

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### **§63.442 [Reserved]**

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### **§63.443 Standards for the pulping system at kraft, soda, and semi-chemical processes.**

(a) The owner or operator of each pulping system using the kraft process subject to the requirements of this subpart shall control the total HAP emissions from the following equipment systems, as specified in paragraphs (c) and (d) of this section.

(1) At existing affected sources, the total HAP emissions from the following equipment systems shall be controlled:

(i) Each LVHC system;

(ii) Each knotter or screen system with total HAP mass emission rates greater than or equal to the rates specified in paragraphs (a)(1)(ii)(A) or (a)(1)(ii)(B) of this section or the combined rate specified in paragraph (a)(1)(ii)(C) of this section.

(A) Each knotter system with emissions of 0.05 kilograms or more of total HAP per megagram of ODP (0.1 pounds per ton).

(B) Each screen system with emissions of 0.10 kilograms or more of total HAP per megagram of ODP (0.2 pounds per ton).

(C) Each knotter and screen system with emissions of 0.15 kilograms or more of total HAP per megagram of ODP (0.3 pounds per ton).

(iii) Each pulp washing system;

(iv) Each decker system that:

(A) Uses any process water other than fresh water or paper machine white water; or

(B) Uses any process water with a total HAP concentration greater than 400 parts per million by weight; and

(v) Each oxygen delignification system.

(2) At new affected sources, the total HAP emissions from the equipment systems listed in paragraphs (a)(1)(i), (a)(1)(iii), and (a)(1)(v) of this section and the following equipment systems shall be controlled:

(i) Each knotter system;

(ii) Each screen system;



(iii) Each decker system; and

(iv) Each weak liquor storage tank.

(b) The owner or operator of each pulping system using a semi-chemical or soda process subject to the requirements of this subpart shall control the total HAP emissions from the following equipment systems as specified in paragraphs (c) and (d) of this section.

(1) At each existing affected source, the total HAP emissions from each LVHC system shall be controlled.

(2) At each new affected source, the total HAP emissions from each LVHC system and each pulp washing system shall be controlled.

(c) Equipment systems listed in paragraphs (a) and (b) of this section shall be enclosed and vented into a closed-vent system and routed to a control device that meets the requirements specified in paragraph (d) of this section. The enclosures and closed-vent system shall meet the requirements specified in §63.450.

(d) The control device used to reduce total HAP emissions from each equipment system listed in paragraphs (a) and (b) of this section shall:

(1) Reduce total HAP emissions by 98 percent or more by weight; or

(2) Reduce the total HAP concentration at the outlet of the thermal oxidizer to 20 parts per million or less by volume, corrected to 10 percent oxygen on a dry basis; or

(3) Reduce total HAP emissions using a thermal oxidizer designed and operated at a minimum temperature of 871 °C (1600 °F) and a minimum residence time of 0.75 seconds; or

(4) Reduce total HAP emissions using one of the following:

(i) A boiler, lime kiln, or recovery furnace by introducing the HAP emission stream with the primary fuel or into the flame zone; or

(ii) A boiler or recovery furnace with a heat input capacity greater than or equal to 44 megawatts (150 million British thermal units per hour) by introducing the HAP emission stream with the combustion air.

(e) Periods of excess emissions reported under §63.455 shall not be a violation of §63.443(c) and (d) provided that the time of excess emissions divided by the total process operating time in a semi-annual reporting period does not exceed the following levels:

(1) One percent for control devices used to reduce the total HAP emissions from the LVHC system; and

(2) Four percent for control devices used to reduce the total HAP emissions from the HVLC system; and

(3) Four percent for control devices used to reduce the total HAP emissions from both the LVHC and HVLC systems.

[63 FR 18617, Apr. 15, 1998, as amended at 64 FR 17563, Apr. 12, 1999; 66 FR 80762, Dec. 22, 2000; 77 FR 55710, Sept. 11, 2012]

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#### **§63.444 Standards for the pulping system at sulfite processes.**

(a) The owner or operator of each sulfite process subject to the requirements of this subpart shall control the total HAP emissions from the following equipment systems as specified in paragraphs (b) and (c) of this section.

(1) At existing sulfite affected sources, the total HAP emissions from the following equipment systems shall be controlled:

(i) Each digester system vent;

- (ii) Each evaporator system vent; and
- (iii) Each pulp washing system.

(2) At new affected sources, the total HAP emissions from the equipment systems listed in paragraph (a)(1) of this section and the following equipment shall be controlled:

- (i) Each weak liquor storage tank;
- (ii) Each strong liquor storage tank; and
- (iii) Each acid condensate storage tank.

(b) Equipment listed in paragraph (a) of this section shall be enclosed and vented into a closed-vent system and routed to a control device that meets the requirements specified in paragraph (c) of this section. The enclosures and closed-vent system shall meet the requirements specified in §63.450. Emissions from equipment listed in paragraph (a) of this section that is not necessary to be reduced to meet paragraph (c) of this section is not required to be routed to a control device.

(c) The total HAP emissions from both the equipment systems listed in paragraph (a) of this section and the vents, wastewater, and condensate streams from the control device used to reduce HAP emissions, shall be controlled as follows.

(1) Each calcium-based or sodium-based sulfite pulping process shall:

- (i) Emit no more than 0.44 kilograms of total HAP or methanol per megagram (0.89 pounds per ton) of ODP; or
- (ii) Remove 92 percent or more by weight of the total HAP or methanol.

(2) Each magnesium-based or ammonium-based sulfite pulping process shall:

- (i) Emit no more than 1.1 kilograms of total HAP or methanol per megagram (2.2 pounds per ton) of ODP; or
- (ii) Remove 87 percent or more by weight of the total HAP or methanol.

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#### **§63.445 Standards for the bleaching system.**

(a) Each bleaching system that does not use any chlorine or chlorinated compounds for bleaching is exempt from the requirements of this section. Owners or operators of the following bleaching systems shall meet all the provisions of this section:

- (1) Bleaching systems that use chlorine;
- (2) Bleaching systems bleaching pulp from kraft, sulfite, or soda pulping processes that use any chlorinated compounds; or
- (3) Bleaching systems bleaching pulp from mechanical pulping processes using wood or from any process using secondary or non-wood fibers, that use chlorine dioxide.

(b) The equipment at each bleaching stage, of the bleaching systems listed in paragraph (a) of this section, where chlorinated compounds are introduced shall be enclosed and vented into a closed-vent system and routed to a control device that meets the requirements specified in paragraph (c) of this section. The enclosures and closed-vent system shall meet the requirements specified in §63.450. If process modifications are used to achieve compliance with the emission limits specified in paragraphs (c)(2) or (c)(3), enclosures and closed-vent systems are not required, unless appropriate.

(c) The control device used to reduce chlorinated HAP emissions (not including chloroform) from the equipment specified in paragraph (b) of this section shall:

- (1) Reduce the total chlorinated HAP mass in the vent stream entering the control device by 99 percent or more by weight;

(2) Achieve a treatment device outlet concentration of 10 parts per million or less by volume of total chlorinated HAP; or

(3) Achieve a treatment device outlet mass emission rate of 0.001 kg of total chlorinated HAP mass per megagram (0.002 pounds per ton) of ODP.

(d) The owner or operator of each bleaching system subject to paragraph (a)(2) of this section shall comply with paragraph (d)(1) or (d)(2) of this section to reduce chloroform air emissions to the atmosphere, except the owner or operator of each bleaching system complying with extended compliance under §63.440(d)(3)(ii) shall comply with paragraph (d)(1) of this section.

(1) Comply with the following applicable effluent limitation guidelines and standards specified in 40 CFR part 430:

(i) Dissolving-grade kraft bleaching systems and lines, 40 CFR 430.14 through 430.17;

(ii) Paper-grade kraft and soda bleaching systems and lines, 40 CFR 430.24(a)(1) and (e), and 40 CFR 430.26 (a) and (c);

(iii) Dissolving-grade sulfite bleaching systems and lines, 40 CFR 430.44 through 430.47; or

(iv) Paper-grade sulfite bleaching systems and lines, 40 CFR 430.54(a) and (c), and 430.56(a) and (c).

(2) Use no hypochlorite or chlorine for bleaching in the bleaching system or line.

[63 FR 18617, Apr. 15, 1998, as amended at 64 FR 17563, Apr. 12, 1999]

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#### **§63.446 Standards for kraft pulping process condensates.**

(a) The requirements of this section apply to owners or operators of kraft processes subject to the requirements of this subpart.

(b) The pulping process condensates from the following equipment systems shall be treated to meet the requirements specified in paragraphs (c), (d), and (e) of this section:

(1) Each digester system;

(2) Each turpentine recovery system;

(3) Each evaporator system condensate from:

(i) The vapors from each stage where weak liquor is introduced (feed stages); and

(ii) Each evaporator vacuum system for each stage where weak liquor is introduced (feed stages).

(4) Each HVLC collection system; and

(5) Each LVHC collection system.

(c) One of the following combinations of HAP-containing pulping process condensates generated, produced, or associated with the equipment systems listed in paragraph (b) of this section shall be subject to the requirements of paragraphs (d) and (e) of this section:

(1) All pulping process condensates from the equipment systems specified in paragraphs (b)(1) through (b)(5) of this section.

(2) The combined pulping process condensates from the equipment systems specified in paragraphs (b)(4) and (b)(5) of this section, plus pulping process condensate stream(s) that in total contain at least 65 percent of the total HAP mass from the pulping process condensates from equipment systems listed in paragraphs (b)(1) through (b)(3) of this section.

(3) The pulping process condensates from equipment systems listed in paragraphs (b)(1) through (b)(5) of this section that in total contain a total HAP mass of 3.6 kilograms or more of total HAP per

megagram (7.2 pounds per ton) of ODP for mills that do not perform bleaching or 5.5 kilograms or more of total HAP per megagram (11.1 pounds per ton) of ODP for mills that perform bleaching.

(d) The pulping process condensates from the equipment systems listed in paragraph (b) of this section shall be conveyed in a closed collection system that is designed and operated to meet the requirements specified in paragraphs (d)(1) and (d)(2) of this section.

(1) Each closed collection system shall meet the individual drain system requirements specified in §§63.960, 63.961, and 63.962 of subpart RR of this part, except for closed vent systems and control devices shall be designed and operated in accordance with §§63.443(d) and 63.450, instead of in accordance with §63.693 as specified in §63.962 (a)(3)(ii), (b)(3)(ii)(A), and (b)(5)(iii); and

(2) If a condensate tank is used in the closed collection system, the tank shall meet the following requirements:

(i) The fixed roof and all openings (e.g., access hatches, sampling ports, gauge wells) shall be designed and operated with no detectable leaks as indicated by an instrument reading of less than 500 parts per million above background, and vented into a closed-vent system that meets the requirements in §63.450 and routed to a control device that meets the requirements in §63.443(d); and

(ii) Each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that the tank contains pulping process condensates or any HAP removed from a pulping process condensate stream except when it is necessary to use the opening for sampling, removal, or for equipment inspection, maintenance, or repair.

(e) Each pulping process condensate from the equipment systems listed in paragraph (b) of this section shall be treated according to one of the following options:

(1) Recycle the pulping process condensate to an equipment system specified in §63.443(a) meeting the requirements specified in §63.443(c) and (d); or

(2) Discharge the pulping process condensate below the liquid surface of a biological treatment system and treat the pulping process condensates to meet the requirements specified in paragraph (e) (3), (4), or (5) of this section, and total HAP shall be measured as specified in §63.457(g); or

(3) Treat the pulping process condensates to reduce or destroy the total HAPs by at least 92 percent or more by weight; or

(4) At mills that do not perform bleaching, treat the pulping process condensates to remove 3.3 kilograms or more of total HAP per megagram (6.6 pounds per ton) of ODP, or achieve a total HAP concentration of 210 parts per million or less by weight at the outlet of the control device; or

(5) At mills that perform bleaching, treat the pulping process condensates to remove 5.1 kilograms or more of total HAP per megagram (10.2 pounds per ton) of ODP, or achieve a total HAP concentration of 330 parts per million or less by weight at the outlet of the control device.

(f) Each HAP removed from a pulping process condensate stream during treatment and handling under paragraphs (d) or (e) of this section, except for those treated according to paragraph (e)(2) of this section, shall be controlled as specified in §63.443(c) and (d).

(g) For each control device (e.g., steam stripper system or other equipment serving the same function) used to treat pulping process condensates to comply with the requirements specified in paragraphs (e)(3) through (5) of this section, periods of excess emissions reported under §63.455 shall not be a violation of paragraphs (d), (e)(3) through (5), and (f) of this section provided that the time of excess emissions divided by the total process operating time in a semi-annual reporting period does not exceed 10 percent. The 10 percent excess emissions allowance does not apply to treatment of pulping process condensates according to paragraph (e)(2) of this section (e.g., the biological wastewater treatment system used to treat multiple (primarily non-condensate) wastewater streams to comply with the Clean Water Act).

(h) Each owner or operator of a new or existing affected source subject to the requirements of this section shall evaluate all new or modified pulping process condensates or changes in the annual bleached or non-bleached ODP used to comply with paragraph (i) of this section, to determine if they meet the applicable requirements of this section.

(i) For the purposes of meeting the requirements in paragraph (c)(2) or (3) or paragraph (e)(4) or (5) of this section at mills producing both bleached and unbleached pulp products, owners and operators may meet a prorated mass standard that is calculated by prorating the applicable mass standards (kilograms of total HAP per megagram of ODP) for bleached and unbleached mills specified in paragraph (c)(2) or (3) or paragraph (e)(4) or (5) of this section by the ratio of annual megagrams of bleached and unbleached ODP.

[63 FR 18617, Apr. 15, 1998; 63 FR 42239, Aug. 7, 1998, as amended at 63 FR 49459, Sept. 16, 1998; 64 FR 17563, Apr. 12, 1999; 65 FR 80762, Dec. 22, 2000; 77 FR 55711, Sept. 11, 2012]

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#### **§63.447 Clean condensate alternative.**

As an alternative to the requirements specified in §63.443(a)(1)(ii) through (a)(1)(v) for the control of HAP emissions from pulping systems using the kraft process, an owner or operator must demonstrate to the satisfaction of the Administrator, by meeting all the requirements below, that the total HAP emissions reductions achieved by this clean condensate alternative technology are equal to or greater than the total HAP emission reductions that would have been achieved by compliance with §63.443(a)(1)(ii) through (a)(1)(v).

(a) For the purposes of this section only the following additional definitions apply.

(1) *Clean condensate alternative affected source* means the total of all HAP emission points in the pulping, bleaching, causticizing, and papermaking systems (exclusive of HAP emissions attributable to additives to paper machines and HAP emission points in the LVHC system).

(2) *Causticizing system* means all equipment associated with converting sodium carbonate into active sodium hydroxide. The equipment includes smelt dissolving tanks, lime mud washers and storage tanks, white and mud liquor clarifiers and storage tanks, slakers, slaker grit washers, lime kilns, green liquor clarifiers and storage tanks, and dreg washers ending with the white liquor storage tanks prior to the digester system, and any other equipment serving the same function as those previously listed.

(3) *Papermaking system* means all equipment used to convert pulp into paper, paperboard, or market pulp, including the stock storage and preparation systems, the paper or paperboard machines, and the paper machine white water system, broke recovery systems, and the systems involved in calendering, drying, on-machine coating, slitting, winding, and cutting.

(b) Each owner or operator shall install and operate a clean condensate alternative technology with a continuous monitoring system to reduce total HAP emissions by treating and reducing HAP concentrations in the pulping process water used within the clean condensate alternative affected source.

(c) Each owner or operator shall calculate HAP emissions on a kilogram per megagram of ODP basis and measure HAP emissions according to the appropriate procedures contained in §63.457.

(d) Each owner or operator shall determine the baseline HAP emissions for each equipment system and the total of all equipment systems in the clean condensate alternative affected source based on the following:

(1) Process and air pollution control equipment installed and operating on December 17, 1993, and

(2) Compliance with the following requirements that affect the level of HAP emissions from the clean condensate alternative affected source:

(i) The pulping process condensates requirements in §63.446;

(ii) The applicable effluent limitation guidelines and standards in 40 CFR part 430, subparts A, B, D, and E; and

(iii) All other applicable requirements of local, State, or Federal agencies or statutes.

(e) Each owner or operator shall determine the following HAP emission reductions from the baseline HAP emissions determined in paragraph (d) of this section for each equipment system and the total of all equipment systems in the clean condensate alternative affected source:

(1) The HAP emission reduction occurring by complying with the requirements of §63.443(a)(1)(ii) through (a)(1)(v); and

(2) The HAP emissions reduction occurring by complying with the clean condensate alternative technology.

(f) For the purposes of all requirements in this section, each owner or operator may use as an alternative, individual equipment systems (instead of total of all equipment systems) within the clean condensate alternative affected source to determine emissions and reductions to demonstrate equal or greater than the reductions that would have been achieved by compliance with §63.443(a)(1)(ii) through (a)(1)(v).

(g) The initial and updates to the control strategy report specified in §63.455(b) shall include to the extent possible the following information:

(1) A detailed description of:

(i) The equipment systems and emission points that comprise the clean condensate alternative affected source;

(ii) The air pollution control technologies that would be used to meet the requirements of §63.443(a)(1)(ii) through (a)(1)(v); and

(iii) The clean condensate alternative technology to be used.

(2) Estimates and basis for the estimates of total HAP emissions and emission reductions to fulfill the requirements of paragraphs (d), (e), and (f) of this section.

(h) Each owner or operator shall report to the Administrator by the applicable compliance date specified in §63.440(d) or (e) the rationale, calculations, test procedures, and data documentation used to demonstrate compliance with all the requirements of this section.

[63 FR 18617, Apr. 15, 1998; 63 FR 42239, Aug. 7, 1998, as amended at 64 FR 17563, Apr. 12, 1999]

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### **§§63.448-63.449 [Reserved]**

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### **§63.450 Standards for enclosures and closed-vent systems.**

(a) Each enclosure and closed-vent system specified in §§63.443(c), 63.444(b), and 63.445(b) for capturing and transporting vent streams that contain HAP shall meet the requirements specified in paragraphs (b) through (d) of this section.

(b) Each enclosure shall maintain negative pressure at each enclosure or hood opening as demonstrated by the procedures specified in §63.457(e). Each enclosure or hood opening closed during the initial performance test specified in §63.457(a) shall be maintained in the same closed and sealed position as during the performance test at all times except when necessary to use the opening for sampling, inspection, maintenance, or repairs.

(c) Each component of the closed-vent system used to comply with §§63.443(c), 63.444(b), and 63.445(b) that is operated at positive pressure and located prior to a control device shall be designed for and operated with no detectable leaks as indicated by an instrument reading of less than 500 parts per million by volume above background, as measured by the procedures specified in §63.457(d).

(d) Each bypass line in the closed-vent system that could divert vent streams containing HAP to the atmosphere without meeting the emission limitations in §§63.443, 63.444, or 63.445 shall comply with either of the following requirements:

(1) On each bypass line, the owner or operator shall install, calibrate, maintain, and operate according to the manufacturer's specifications a flow indicator that is capable of taking periodic readings as frequently as specified in §63.454(e). The flow indicator shall be installed in the bypass line in such a way as to indicate flow in the bypass line; or

(2) For bypass line valves that are not computer controlled, the owner or operator shall maintain the bypass line valve in the closed position with a car seal or a seal placed on the valve or closure mechanism in such a way that valve or closure mechanism cannot be opened without breaking the seal.

[63 FR 18617, Apr. 15, 1998, as amended at 64 FR 17563, Apr. 12, 1999; 68 FR 37348, June 23, 2003]

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### §§63.451-63.452 [Reserved]

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### §63.453 Monitoring requirements.

(a) Each owner or operator subject to the standards specified in §§63.443(c) and (d), 63.444(b) and (c), 63.445(b) and (c), 63.446(c), (d), and (e), 63.447(b) or §63.450(d), shall install, calibrate, certify, operate, and maintain according to the manufacturer's specifications, a continuous monitoring system (CMS, as defined in §63.2 of this part) as specified in paragraphs (b) through (m) of this section, except as allowed in paragraph (m) of this section. The CMS shall include a continuous recorder.

(b) A CMS shall be operated to measure the temperature in the firebox or in the ductwork immediately downstream of the firebox and before any substantial heat exchange occurs for each thermal oxidizer used to comply with the requirements of §63.443(d)(1) through (d)(3). Owners and operators complying with the HAP concentration requirements in §63.443(d)(2) may install a CMS to monitor the thermal oxidizer outlet total HAP or methanol concentration, as an alternative to monitoring thermal oxidizer operating temperature.

(c) A CMS shall be operated to measure the following parameters for each gas scrubber used to comply with the bleaching system requirements of §63.445(c) or the sulfite pulping system requirements of §63.444(c).

- (1) The pH or the oxidation/reduction potential of the gas scrubber effluent;
- (2) The gas scrubber vent gas inlet flow rate; and
- (3) The gas scrubber liquid influent flow rate.

(d) As an option to the requirements specified in paragraph (c) of this section, a CMS shall be operated to measure the chlorine outlet concentration of each gas scrubber used to comply with the bleaching system outlet concentration requirement specified in §63.445(c)(2).

(e) The owner or operator of a bleaching system complying with 40 CFR 430.24, shall monitor the chlorine and hypochlorite application rates, in kg of bleaching agent per megagram of ODP, of the bleaching system during the extended compliance period specified in §63.440(d)(3).

(f) A CMS shall be operated to measure the gas scrubber parameters specified in paragraphs (c) (1) through (c)(3) of this section or those site specific parameters determined according to the procedures specified in paragraph (n) of this section to comply with the sulfite pulping system requirements specified in §63.444(c).

(g) A CMS shall be operated to measure the following parameters for each steam stripper used to comply with the treatment requirements in §63.446(e) (3), (4), or (5):

- (1) The process wastewater feed rate;
- (2) The steam feed rate; and
- (3) The process wastewater column feed temperature.

(h) As an option to the requirements specified in paragraph (g) of this section, a CMS shall be operated to measure the methanol outlet concentration to comply with the steam stripper outlet concentration requirement specified in §63.446 (e)(4) or (e)(5).

(i) A CMS shall be operated to measure the appropriate parameters determined according to the procedures specified in paragraph (n) of this section to comply with the condensate applicability requirements specified in §63.446(c).

(j) Each owner or operator using an open biological treatment system to comply with §63.446(e)(2) shall perform the daily monitoring procedures specified in either paragraph (j)(1) or (2) of this section and shall conduct a performance test each quarter using the procedures specified in paragraph (j)(3) of this section.

(1) Comply with the monitoring and sampling requirements specified in paragraphs (j)(1)(i) and (ii) of this section.

(i) On a daily basis, monitor the following parameters for each open biological treatment unit:

(A) Composite daily sample of outlet soluble BOD<sub>5</sub> concentration to monitor for maximum daily and maximum monthly average;

(B) Mixed liquor volatile suspended solids;

(C) Horsepower of aerator unit(s);

(D) Inlet liquid flow; and

(E) Liquid temperature.

(ii) If the Inlet and Outlet Concentration Measurement Procedure (Procedure 3) in appendix C of this part is used to determine the fraction of HAP compounds degraded in the biological treatment system as specified in §63.457(l), conduct the sampling and archival requirements specified in paragraphs (j)(1)(ii)(A) and (B) of this section.

(A) Obtain daily inlet and outlet liquid grab samples from each biological treatment unit to have HAP data available to perform quarterly performance tests specified in paragraph (j)(3) of this section and the compliance tests specified in paragraph (p) of this section.

(B) Store the samples as specified in §63.457(n) until after the results of the soluble BOD<sub>5</sub> test required in paragraph (j)(1)(i)(A) of this section are obtained. The storage requirement is needed since the soluble BOD<sub>5</sub> test requires 5 days or more to obtain results. If the results of the soluble BOD<sub>5</sub> test are outside of the range established during the initial performance test, then the archive sample shall be used to perform the mass removal or percent reduction determinations.

(2) As an alternative to the monitoring requirements of paragraph (j)(1) of this section, conduct daily monitoring of the site-specific parameters established according to the procedures specified in paragraph (n) of this section.

(3) Conduct a performance test as specified in §63.457(l) within 45 days after the beginning of each quarter and meet the applicable emission limit in §63.446(e)(2).

(i) The performance test conducted in the first quarter (annually) shall be performed for total HAP as specified in §63.457(g) and meet the percent reduction or mass removal emission limit specified in §63.446(e)(2).

(ii) The remaining quarterly performance tests shall be performed as specified in paragraph (j)(3)(i) of this section except owners or operators may use the applicable methanol procedure in §63.457(l)(1) or (2) and the value of *r* determined during the first quarter test instead of measuring the additional HAP to determine a new value of *r*.

(k) Each enclosure and closed-vent system used to comply with §63.450(a) shall comply with the requirements specified in paragraphs (k)(1) through (k)(6) of this section.

(1) For each enclosure opening, a visual inspection of the closure mechanism specified in §63.450(b) shall be performed at least once every 30 days to ensure the opening is maintained in the closed position and sealed.



(2) Each closed-vent system required by §63.450(a) shall be visually inspected every 30 days and at other times as requested by the Administrator. The visual inspection shall include inspection of ductwork, piping, enclosures, and connections to covers for visible evidence of defects.

(3) For positive pressure closed-vent systems or portions of closed-vent systems, demonstrate no detectable leaks as specified in §63.450(c) measured initially and annually by the procedures in §63.457(d).

(4) Demonstrate initially and annually that each enclosure opening is maintained at negative pressure as specified in §63.457(e).

(5) The valve or closure mechanism specified in §63.450(d)(2) shall be inspected at least once every 30 days to ensure that the valve is maintained in the closed position and the emission point gas stream is not diverted through the bypass line.

(6) If an inspection required by paragraphs (k)(1) through (k)(5) of this section identifies visible defects in ductwork, piping, enclosures or connections to covers required by §63.450, or if an instrument reading of 500 parts per million by volume or greater above background is measured, or if enclosure openings are not maintained at negative pressure, then the following corrective actions shall be taken as soon as practicable.

(i) A first effort to repair or correct the closed-vent system shall be made as soon as practicable but no later than 5 calendar days after the problem is identified.

(ii) The repair or corrective action shall be completed no later than 15 calendar days after the problem is identified. Delay of repair or corrective action is allowed if the repair or corrective action is technically infeasible without a process unit shutdown or if the owner or operator determines that the 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 by the end of the next process unit shutdown.

(l) Each pulping process condensate closed collection system used to comply with §63.446(d) shall comply with the requirements specified in paragraphs (l)(1) through (l)(3) of this section.

(1) Each pulping process condensate closed collection system shall be visually inspected every 30 days and shall comply with the inspection and monitoring requirements specified in §63.964 of subpart RR of this part, except:

(i) Owners or operators shall comply with the recordkeeping requirements of §63.454 instead of the requirements specified in §63.964(a)(1)(vi) and (b)(3) of subpart RR of this part.

(ii) Owners or operators shall comply with the inspection and monitoring requirements for closed-vent systems and control devices specified in paragraphs (a) and (k) of this section instead of the requirements specified in §63.964(a)(2) of subpart RR of this part.

(2) Each condensate tank used in the closed collection system shall be operated with no detectable leaks as specified in §63.446(d)(2)(i) measured initially and annually by the procedures specified in §63.457(d).

(3) If an inspection required by this section identifies visible defects in the closed collection system, or if an instrument reading of 500 parts per million or greater above background is measured, then corrective actions specified in §63.964(b) of subpart RR of this part shall be taken.

(m) Each owner or operator using a control device, technique or an alternative parameter other than those specified in paragraphs (b) through (l) of this section shall install a CMS and establish appropriate operating parameters to be monitored that demonstrate, to the Administrator's satisfaction, continuous compliance with the applicable control requirements.

(n) To establish or reestablish the value for each operating parameter required to be monitored under paragraphs (b) through (j), (l), and (m) of this section or to establish appropriate parameters for paragraphs (f), (i), (j)(2), and (m) of this section, each owner or operator shall use the following procedures:

(1) During the initial performance test required in §63.457(a) or any subsequent performance test, continuously record the operating parameter;

(2) Determinations shall be based on the control performance and parameter data monitored during the performance test, supplemented if necessary by engineering assessments and the manufacturer's recommendations;

(3) The owner or operator shall provide for the Administrator's approval the rationale for selecting the monitoring parameters necessary to comply with paragraphs (f), (i), and (m) of this section; and

(4) Provide for the Administrator's approval the rationale for the selected operating parameter value, and monitoring frequency, and averaging time. Include all data and calculations used to develop the value and a description of why the value, monitoring frequency, and averaging time demonstrate continuous compliance with the applicable emission standard.

(o) Each owner or operator of a control device subject to the monitoring provisions of this section shall operate the control device in a manner consistent with the minimum or maximum (as appropriate) operating parameter value or procedure required to be monitored under paragraphs (a) through (n) of this section and established under this subpart. Except as provided in paragraph (p) of this section, §63.443(e), or §63.446(g), operation of the control device below minimum operating parameter values or above maximum operating parameter values established under this subpart or failure to perform procedures required by this subpart shall constitute a violation of the applicable emission standard of this subpart and be reported as a period of excess emissions.

(p) The procedures of this paragraph apply to each owner or operator of an open biological treatment system complying with paragraph (j) of this section whenever a monitoring parameter excursion occurs, and the owner or operator chooses to conduct a performance test to demonstrate compliance with the applicable emission limit. A monitoring parameter excursion occurs whenever the monitoring parameters specified in paragraphs (j)(1)(i)(A) through (C) of this section or any of the monitoring parameters specified in paragraph (j)(2) of this section are below minimum operating parameter values or above maximum operating parameter values established in paragraph (n) of this section.

(1) As soon as practical after the beginning of the monitoring parameter excursion, the following requirements shall be met:

(i) Before the steps in paragraph (p)(1)(ii) or (iii) of this section are performed, all sampling and measurements necessary to meet the requirements in paragraph (p)(2) of this section shall be conducted.

(ii) Steps shall be taken to repair or adjust the operation of the process to end the parameter excursion period.

(iii) Steps shall be taken to minimize total HAP emissions to the atmosphere during the parameter excursion period.

(2) A parameter excursion is not a violation of the applicable emission standard if the results of the performance test conducted using the procedures in this paragraph demonstrate compliance with the applicable emission limit in §63.446(e)(2).

(i) Conduct a performance test as specified in §63.457 using the monitoring data specified in paragraph (j)(1) or (2) of this section that coincides with the time of the parameter excursion. No maintenance or changes shall be made to the open biological treatment system after the beginning of a parameter excursion that would influence the results of the performance test.

(ii) If the results of the performance test specified in paragraph (p)(2)(i) of this section demonstrate compliance with the applicable emission limit in §63.446(e)(2), then the parameter excursion is not a violation of the applicable emission limit.

(iii) If the results of the performance test specified in paragraph (p)(2)(i) of this section do not demonstrate compliance with the applicable emission limit in §63.446(e)(2) because the total HAP mass entering the open biological treatment system is below the level needed to demonstrate compliance with the applicable emission limit in §63.446(e)(2), then the owner or operator shall perform the following comparisons:

(A) If the value of  $f_{\text{bio}}$  (MeOH) determined during the performance test specified in paragraph (p)(2)(i) of this section is within the range of values established during the initial and subsequent performance tests approved by the Administrator, then the parameter excursion is not a violation of the applicable standard.

(B) If the value of  $f_{\text{bio}}$  (MeOH) determined during the performance test specified in paragraph (p)(2)(i) of this section is not within the range of values established during the initial and subsequent performance tests approved by the Administrator, then the parameter excursion is a violation of the applicable standard.

(iv) The results of the performance test specified in paragraph (p)(2)(i) of this section shall be recorded as specified in §63.454(f).

(3) If an owner or operator determines that performing the required procedures under paragraph (p)(2) of this section for a nonthoroughly mixed open biological system would expose a worker to dangerous, hazardous, or otherwise unsafe conditions, all of the following procedures shall be performed:

(i) Calculate the mass removal or percent reduction value using the procedures specified in §63.457(l) except the value for  $f_{\text{bio}}$  (MeOH) shall be determined using the procedures in appendix E to this part.

(ii) Repeat the procedures in paragraph (p)(3)(i) of this section for every day until the unsafe conditions have passed.

(iii) A parameter excursion is a violation of the standard if the percent reduction or mass removal determined in paragraph (p)(3)(i) of this section is less than the percent reduction or mass removal standards specified in §63.446(e)(2), as appropriate, unless the value of  $f_{\text{bio}}$  (MeOH) determined using the procedures in appendix E of this section, as specified in paragraph (p)(3)(i), is within the range of  $f_{\text{bio}}$  (MeOH) values established during the initial and subsequent performance tests previously approved by the Administrator.

(iv) The determination that there is a condition that exposes a worker to dangerous, hazardous, or otherwise unsafe conditions shall be documented according to requirements in §63.454(e) and reporting in §63.455(f).

(v) The requirements of paragraphs (p)(1) and (2) of this section shall be performed and met as soon as practical but no later than 24 hours after the conditions have passed that exposed a worker to dangerous, hazardous, or otherwise unsafe conditions.

(q) 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. 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.

[63 FR 18617, Apr. 15, 1998, as amended at 64 FR 17563, Apr. 12, 1999; 65 FR 80762, Dec. 22, 2000; 77 FR 55711, Sept. 11, 2012]

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#### **§63.454 Recordkeeping requirements.**

(a) The owner or operator of each affected source subject to the requirements of this subpart shall comply with the recordkeeping requirements of §63.10, as shown in Table 1 of this subpart, and the requirements specified in paragraphs (b) through (g) of this section for the monitoring parameters specified in §63.453.

(b) For each applicable enclosure opening, closed-vent system, and closed collection system, the owner or operator shall prepare and maintain a site-specific inspection plan including a drawing or schematic of the components of applicable affected equipment and shall record the following information for each inspection:

- (1) Date of inspection;
- (2) The equipment type and identification;
- (3) Results of negative pressure tests for enclosures;
- (4) Results of leak detection tests;

- (5) The nature of the defect or leak and the method of detection (i.e., visual inspection or instrument detection);
- (6) The date the defect or leak was detected and the date of each attempt to repair the defect or leak;
- (7) Repair methods applied in each attempt to repair the defect or leak;
- (8) The reason for the delay if the defect or leak is not repaired within 15 days after discovery;
- (9) The expected date of successful repair of the defect or leak if the repair is not completed within 15 days;
- (10) The date of successful repair of the defect or leak;
- (11) The position and duration of opening of bypass line valves and the condition of any valve seals; and
- (12) The duration of the use of bypass valves on computer controlled valves.

(c) The owner or operator of a bleaching system complying with §63.440(d)(3)(ii)(B) shall record the daily average chlorine and hypochlorite application rates, in kg of bleaching agent per megagram of ODP, of the bleaching system until the requirements specified in §63.440(d)(3)(ii)(A) are met.

(d) The owner or operator shall record the CMS parameters specified in §63.453 and meet the requirements specified in paragraph (a) of this section for any new affected process equipment or pulping process condensate stream that becomes subject to the standards in this subpart due to a process change or modification.

(e) The owner or operator shall set the flow indicator on each bypass line specified in §63.450(d)(1) to provide a record of the presence of gas stream flow in the bypass line at least once every 15 minutes.

(f) The owner or operator of an open biological treatment system complying with §63.453(p) shall prepare a written record specifying the results of the performance test specified in §63.453(p)(2).

(g) *Recordkeeping of malfunctions.* The owner or operator must maintain the following records of malfunctions:

(1) Records of the occurrence and duration of each malfunction of operation (i.e., process equipment) or the air pollution control and monitoring equipment.

(2) Records of actions taken during periods of malfunction to minimize emissions in accordance with §63.453(q), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

[63 FR 18617, Apr. 15, 1998, as amended at 65 FR 80763, Dec. 22, 2000; 68 FR 37348, June 23, 2003; 77 FR 55711, Sept. 11, 2012]

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### **§63.455 Reporting requirements.**

(a) Each owner or operator of a source subject to this subpart shall comply with the reporting requirements of subpart A of this part as specified in table 1 and all the following requirements in this section. The initial notification report specified under §63.9(b)(2) of subpart A of this part shall be submitted by April 15, 1999.

(b) Each owner or operator of a kraft pulping system specified in §63.440(d)(1) or a bleaching system specified in §63.440(d)(3)(ii) shall submit, with the initial notification report specified under §63.9(b)(2) of subpart A of this part and paragraph (a) of this section and update every two years thereafter, a non-binding control strategy report containing, at a minimum, the information specified in paragraphs (b)(1) through (b)(3) of this section in addition to the information required in §63.9(b)(2) of subpart A of this part.

(1) A description of the emission controls or process modifications selected for compliance with the control requirements in this standard.

(2) A compliance schedule, including the dates by which each step toward compliance will be reached for each emission point or sets of emission points. At a minimum, the list of dates shall include:

(i) The date by which the major study(s) for determining the compliance strategy will be completed;

(ii) The date by which contracts for emission controls or process modifications will be awarded, or the date by which orders will be issued for the purchase of major components to accomplish emission controls or process changes;

(iii) The date by which on-site construction, installation of emission control equipment, or a process change is to be initiated;

(iv) The date by which on-site construction, installation of emissions control equipment, or a process change is to be completed;

(v) The date by which final compliance is to be achieved;

(vi) For compliance with paragraph §63.440(d)(3)(ii), the tentative dates by which compliance with effluent limitation guidelines and standards intermediate pollutant load effluent reductions and as available, all the dates for the best available technology's milestones reported in the National Pollutant Discharge Elimination System authorized under section 402 of the Clean Water Act and for the best professional milestones in the Voluntary Advanced Technology Incentives Program under 40 CFR 430.24 (b)(2); and

(vii) The date by which the final compliance tests will be performed.

(3) Until compliance is achieved, revisions or updates shall be made to the control strategy report required by paragraph (b) of this section indicating the progress made towards completing the installation of the emission controls or process modifications during the 2-year period.

(c) The owner or operator of each bleaching system complying with §63.440(d)(3)(ii)(B) shall certify in the report specified under §63.10(e)(3) of subpart A of this part that the daily application rates of chlorine and hypochlorite for that bleaching system have not increased as specified in §63.440(d)(3)(ii)(B) until the requirements of §63.440(d)(3)(ii)(A) are met.

(d) The owner or operator shall meet the requirements specified in paragraph (a) of this section upon startup of any new affected process equipment or pulping process condensate stream that becomes subject to the standards of this subpart due to a process change or modification.

(e) If the owner or operator uses the results of the performance test required in §63.453(p)(2) to revise the approved values or ranges of the monitoring parameters specified in §63.453(j)(1) or (2), the owner or operator shall submit an initial notification of the subsequent performance test to the Administrator as soon as practicable, but no later than 15 days, before the performance test required in §63.453(p)(2) is scheduled to be conducted. The owner or operator shall notify the Administrator as soon as practicable, but no later than 24 hours, before the performance test is scheduled to be conducted to confirm the exact date and time of the performance test.

(f) To comply with the open biological treatment system monitoring provisions of §63.453(p)(3), the owner or operator shall notify the Administrator as soon as practicable of the onset of the dangerous, hazardous, or otherwise unsafe conditions that did not allow a compliance determination to be conducted using the sampling and test procedures in §63.457(l). The notification shall occur no later than 24 hours after the onset of the dangerous, hazardous, or otherwise unsafe conditions and shall include the specific reason(s) that the sampling and test procedures in §63.457(l) could not be performed.

(g) *Malfunction reporting requirements.* 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 an owner or operator during a malfunction of an affected source to minimize emissions in accordance with §63.453(q), including actions taken to correct a malfunction.

(h) The owner or operator must submit performance test reports as specified in paragraphs (h)(1) through (4) of this section.

(1) The owner or operator of an affected source shall report the results of the performance test before the close of business on the 60th day following the completion of the performance test, unless approved otherwise in writing by the Administrator. A performance test is "completed" when field sample collection is terminated. Unless otherwise approved by the Administrator in writing, results of a performance test shall include the analysis of samples, determination of emissions and raw data. A complete test report must include the purpose of the test; a brief process description; a complete unit description, including a description of feed streams and control devices; sampling site description; pollutants measured; description of sampling and analysis procedures and any modifications to standard procedures; quality assurance procedures; record of operating conditions, including operating parameters for which limits are being set, 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; chain-of-custody documentation; explanation of laboratory data qualifiers; example calculations of all applicable stack gas parameters, emission rates, percent reduction rates, and analytical results, as applicable; and any other information required by the test method and the Administrator.

(2) Within 60 days after the date of completing each performance test (defined in §63.2) as required by this subpart, the owner or operator must submit the results of the performance tests, including any associated fuel analyses, required by this subpart to the EPA's WebFIRE database by using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through the EPA's Central Data Exchange (CDX) (<http://www.epa.gov/cdx>). Performance test data must be submitted in the file format generated through use of the EPA's Electronic Reporting Tool (ERT) (see <http://www.epa.gov/ttn/chief/ert/index.html>). Only data collected using test methods on the ERT Web site are subject to this requirement for submitting reports electronically to WebFIRE. Owners or operators who claim that some of the information being submitted for performance tests is confidential business information (CBI) must submit a complete ERT file including information claimed to be CBI on a compact disk, 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 ERT file with the CBI omitted must be submitted to the EPA via CDX as described earlier in this paragraph. At the discretion of the delegated authority, the owner or operator must also submit these reports, including the CBI, to the delegated authority in the format specified by the delegated authority. For any performance test conducted using test methods that are not listed on the ERT Web site, the owner or operator must submit the results of the performance test to the Administrator at the appropriate address listed in §63.13.

(3) Within 60 days after the date of completing each CEMS performance evaluation test as defined in §63.2, the owner or operator must submit relative accuracy test audit (RATA) data to the EPA's CDX by using CEDRI in accordance with paragraph (2) of this section. Only RATA pollutants that can be documented with the ERT (as listed on the ERT Web site) are subject to this requirement. For any performance evaluations with no corresponding RATA pollutants listed on the ERT Web site, the owner or operator must submit the results of the performance evaluation to the Administrator at the appropriate address listed in §63.13.

(4) All reports required by this subpart not subject to the requirements in paragraphs (h)(2) and (3) of this section must be sent to the Administrator at the appropriate address listed in §63.13. The Administrator or the delegated authority may request a report in any form suitable for the specific case (e.g., by commonly used electronic media such as Excel spreadsheet, on CD or hard copy). The Administrator retains the right to require submittal of reports subject to paragraphs (h)(2) and (3) of this section in paper format

[63 FR 18617, Apr. 15, 1998, as amended at 65 FR 80763, Dec. 22, 2000; 77 FR 55711, Sept. 11, 2012]

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#### **§63.456 Affirmative defense for violation of emission standards during malfunction.**

In response to an action to enforce the standards set forth in §§63.443(c) and (d), 63.444(b) and (c), 63.445(b) and (c), 63.446(c), (d), and (e), 63.447(b) or §63.450(d), the owner or operator may assert an affirmative defense to a claim for civil penalties for violations of such standards that are caused by malfunction, as defined at 40 CFR 63.2. Appropriate penalties may be assessed, however, if the owner or operator fails to meet the burden of proving all of the requirements in the affirmative defense. The affirmative defense shall not be available for claims for injunctive relief.

(a) To establish the affirmative defense in any action to enforce such a standard, the owner or operator must timely meet the reporting requirements in paragraph (b) of this section, and must prove by a preponderance of evidence that:

(1) The violation:

(i) Was caused by a sudden, infrequent, and unavoidable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner, and

(ii) Could not have been prevented through careful planning, proper design or better operation and maintenance practices; and

(iii) Did not stem from any activity or event that could have been foreseen and avoided, or planned for; and

(iv) Was not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and

(2) Repairs were made as expeditiously as possible when a violation occurred. Off-shift and overtime labor were used, to the extent practicable to make these repairs; and

(3) The frequency, amount and duration of the violation (including any bypass) were minimized to the maximum extent practicable; and

(4) If the violation resulted from a bypass of control equipment or a process, then the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; and

(5) All possible steps were taken to minimize the impact of the violation on ambient air quality, the environment and human health; and

(6) All emissions monitoring and control systems were kept in operation if at all possible, consistent with safety and good air pollution control practices; and

(7) All of the actions in response to the violation were documented by properly signed, contemporaneous operating logs; and

(8) At all times, the affected source was operated in a manner consistent with good practices for minimizing emissions; and

(9) A written root cause analysis has been prepared, the purpose of which is to determine, correct, and eliminate the primary causes of the malfunction and the violation resulting from the malfunction event at issue. The analysis shall also specify, using best monitoring methods and engineering judgment, the amount of any emissions that were the result of the malfunction.

(b) *Report.* The owner or operator seeking to assert an affirmative defense shall submit a written report to the Administrator with all necessary supporting documentation, that it has met the requirements set forth in paragraph (a) of this section. This affirmative defense report shall be included in the first periodic compliance, deviation report or excess emission report otherwise required after the initial occurrence of the violation of the relevant standard (which may be the end of any applicable averaging period). If such compliance, deviation report or excess emission report is due less than 45 days after the initial occurrence of the violation, the affirmative defense report may be included in the second compliance, deviation report or excess emission report due after the initial occurrence of the violation of the relevant standard.

[77 FR 55712, Sept. 11, 2012]

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### **§63.457 Test methods and procedures.**

(a) *Performance tests.* Initial and repeat performance tests are required for the emissions sources specified in paragraphs (a)(1) and (2) of this section, except for emission sources controlled by a combustion device that is designed and operated as specified in §63.443(d)(3) or (4).

(1) Conduct an initial performance test for all emission sources subject to the limitations in §§63.443, 63.444, 63.445, 63.446, and 63.447.

(2) Conduct repeat performance tests at five-year intervals for all emission sources subject to the limitations in §§63.443, 63.444, and 63.445. The first of the 5-year repeat tests must be conducted by September 7, 2015, and thereafter within 60 months from the date of the previous performance test. Five-year repeat testing is not required for the following:

(i) Knotter or screen systems with HAP emission rates below the criteria specified in §63.443(a)(1) (ii).

(ii) Decker systems using fresh water or paper machine white water, or decker systems using process water with a total HAP concentration less than 400 parts per million by weight as specified in §63.443(a)(1)(iv).

(b) *Vent sampling port locations and gas stream properties.* For purposes of selecting vent sampling port locations and determining vent gas stream properties, required in §§63.443, 63.444, 63.445, and 63.447, each owner or operator shall comply with the applicable procedures in paragraphs (b)(1) through (b)(6) of this section.

(1) Method 1 or 1A of part 60, appendix A-1, as appropriate, shall be used for selection of the sampling site as follows:

(i) To sample for vent gas concentrations and volumetric flow rates, the sampling site shall be located prior to dilution of the vent gas stream and prior to release to the atmosphere;

(ii) For determining compliance with percent reduction requirements, sampling sites shall be located prior to the inlet of the control device and at the outlet of the control device; measurements shall be performed simultaneously at the two sampling sites; and

(iii) For determining compliance with concentration limits or mass emission rate limits, the sampling site shall be located at the outlet of the control device.

(2) No traverse site selection method is needed for vents smaller than 0.10 meter (4.0 inches) in diameter.

(3) The vent gas volumetric flow rate shall be determined using Method 2, 2A, 2C, or 2D of part 60, appendix A-1, as appropriate.

(4) The moisture content of the vent gas shall be measured using Method 4 of part 60, appendix A-3.

(5) To determine vent gas concentrations, the owner or operator shall conduct a minimum of three test runs that are representative of normal conditions and average the resulting pollutant concentrations using the following procedures.

(i) Method 308 in Appendix A of this part; Method 320 in Appendix A of this part; Method 18 in appendix A-6 of part 60; ASTM D6420-99 (Reapproved 2004) (incorporated by reference in §63.14(b)(28) of subpart A of this part); or ASTM D6348-03 (incorporated by reference in §63.14(b)(54) of subpart A of this part) shall be used to determine the methanol concentration. If ASTM D6348-03 is used, the conditions specified in paragraphs (b)(5)(i)(A) through (b)(5)(i)(B) must be met.

(A) The test plan preparation and implementation in the Annexes to ASTM D6348-03, sections A1 through A8 are required.

(B) In ASTM D6348-03 Annex A5 (Analyte Spiking Technique), the percent (%) R must be determined for each target analyte (Equation A5.5 of ASTM D6348-03). In order for the test data to be acceptable for a compound, %R must be between 70 and 130 percent. If the %R value does not meet this criterion for a target compound, the test data is not acceptable for that compound and the test must be repeated for that analyte following adjustment of the sampling or analytical procedure before the 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 using the following equation: Reported Result = Measured Concentration in the Stack × 100/%R.

(ii) Except for the modifications specified in paragraphs (b)(5)(ii)(A) through (b)(5)(ii)(K) of this section, Method 26A of part 60, appendix A-8 shall be used to determine chlorine concentration in the vent stream.



(A) *Probe/sampling line.* A separate probe is not required. The sampling line shall be an appropriate length of 0.64 cm (0.25 in) OD Teflon<sup>®</sup> tubing. The sample inlet end of the sampling line shall be inserted into the stack in such a way as to not entrain liquid condensation from the vent gases. The other end shall be connected to the impingers. The length of the tubing may vary from one sampling site to another, but shall be as short as possible in each situation. If sampling is conducted in sunlight, opaque tubing shall be used. Alternatively, if transparent tubing is used, it shall be covered with opaque tape.

(B) *Impinger train.* Three 30 milliliter (ml) capacity midget impingers shall be connected in series to the sampling line. The impingers shall have regular tapered stems. Silica gel shall be placed in the third impinger as a desiccant. All impinger train connectors shall be glass and/or Teflon<sup>®</sup>.

(C) *Critical orifice.* The critical orifice shall have a flow rate of 200 to 250 ml/min and shall be followed by a vacuum pump capable of providing a vacuum of 640 millimeters of mercury (mm Hg). A 45 millimeter diameter in-line Teflon 0.8 micrometer filter shall follow the impingers to protect the critical orifice and vacuum pump.

(D) The following are necessary for the analysis apparatus:

- (1) Wash bottle filled with deionized water;
- (2) 25 or 50 ml graduated burette and stand;
- (3) Magnetic stirring apparatus and stir bar;
- (4) Calibrated pH Meter;
- (5) 150-250 ml beaker or flask; and
- (6) A 5 ml pipette.

(E) The procedures listed in paragraphs (b)(5)(ii)(E)(1) through (b)(5)(ii)(E)(7) of this section shall be used to prepare the reagents.

(1) To prepare the 1 molarity (M) potassium dihydrogen phosphate solution, dissolve 13.61 grams (g) of potassium dihydrogen phosphate in water and dilute to 100 ml.

(2) To prepare the 1 M sodium hydroxide solution (NaOH), dissolve 4.0 g of sodium hydroxide in water and dilute to 100 ml.

(3) To prepare the buffered 2 percent potassium iodide solution, dissolve 20 g of potassium iodide in 900 ml water. Add 50 ml of the 1 M potassium dihydrogen phosphate solution and 30 ml of the 1 M sodium hydroxide solution. While stirring solution, measure the pH of solution electrometrically and add the 1 M sodium hydroxide solution to bring pH to between 6.95 and 7.05.

(4) To prepare the 0.1 normality (N) sodium thiosulfate solution, dissolve 25 g of sodium thiosulfate, pentahydrate, in 800 ml of freshly boiled and cooled distilled water in a 1-liter volumetric flask. Dilute to volume. To prepare the 0.01 N sodium thiosulfate solution, add 10.0 ml standardized 0.1 N sodium thiosulfate solution to a 100 ml volumetric flask, and dilute to volume with water.

(5) To standardize the 0.1 N sodium thiosulfate solution, dissolve 3.249 g of anhydrous potassium bi-iodate, primary standard quality, or 3.567 g potassium iodate dried at 103 ±2 degrees Centigrade for 1 hour, in distilled water and dilute to 1000 ml to yield a 0.1000 N solution. Store in a glass-stoppered bottle. To 80 ml distilled water, add, with constant stirring, 1 ml concentrated sulfuric acid, 10.00 ml 0.1000 N anhydrous potassium bi-iodate, and 1 g potassium iodide. Titrate immediately with 0.1 n sodium thiosulfate titrant until the yellow color of the liberated iodine is almost discharged. Add 1 ml starch indicator solution and continue titrating until the blue color disappears. The normality of the sodium thiosulfate solution is inversely proportional to the ml of sodium thiosulfate solution consumed:

$$\text{Normality of Sodium Thiosulfate} = \frac{1}{\text{ml Sodium Thiosulfate Consumed}}$$

(6) To prepare the starch indicator solution, add a small amount of cold water to 5 g starch and grind in a mortar to obtain a thin paste. Pour paste into 1 L of boiling distilled water, stir, and let settle overnight. Use clear supernate for starch indicator solution.

(7) To prepare the 10 percent sulfuric acid solution, add 10 ml of concentrated sulfuric acid to 80 ml water in a 100 ml volumetric flask. Dilute to volume.

(F) The procedures specified in paragraphs (b)(5)(ii)(F)(1) through (b)(5)(ii)(F)(5) of this section shall be used to perform the sampling.

(1) *Preparation of collection train.* Measure 20 ml buffered potassium iodide solution into each of the first two impingers and connect probe, impingers, filter, critical orifice, and pump. The sampling line and the impingers shall be shielded from sunlight.

(2) *Leak and flow check procedure.* Plug sampling line inlet tip and turn on pump. If a flow of bubbles is visible in either of the liquid impingers, tighten fittings and adjust connections and impingers. A leakage rate not in excess of 2 percent of the sampling rate is acceptable. Carefully remove the plug from the end of the probe. Check the flow rate at the probe inlet with a bubble tube flow meter. The flow should be comparable or slightly less than the flow rate of the critical orifice with the impingers off-line. Record the flow and turn off the pump.

(3) *Sample collection.* Insert the sampling line into the stack and secure it with the tip slightly lower than the port height. Start the pump, recording the time. End the sampling after 60 minutes, or after yellow color is observed in the second in-line impinger. Record time and remove the tubing from the vent. Recheck flow rate at sampling line inlet and turn off pump. If the flow rate has changed significantly, redo sampling with fresh capture solution. A slight variation (less than 5 percent) in flow may be averaged. With the inlet end of the line elevated above the impingers, add about 5 ml water into the inlet tip to rinse the line into the first impinger.

(4) *Sample analysis.* Fill the burette with 0.01 N sodium thiosulfate solution to the zero mark. Combine the contents of the impingers in the beaker or flask. Stir the solution and titrate with thiosulfate until the solution is colorless. Record the volume of the first endpoint (TN, ml). Add 5 ml of the 10 percent sulfuric acid solution, and continue the titration until the contents of the flask are again colorless. Record the total volume of titrant required to go through the first and to the second endpoint (TA, ml). If the volume of neutral titer is less than 0.5 ml, repeat the testing for a longer period of time. It is important that sufficient lighting be present to clearly see the endpoints, which are determined when the solution turns from pale yellow to colorless. A lighted stirring plate and a white background are useful for this purpose.

(5) *Interferences.* Known interfering agents of this method are sulfur dioxide and hydrogen peroxide. Sulfur dioxide, which is used to reduce oxidant residuals in some bleaching systems, reduces formed iodine to iodide in the capture solution. It is therefore a negative interference for chlorine, and in some cases could result in erroneous negative chlorine concentrations. Any agent capable of reducing iodine to iodide could interfere in this manner. A chromium trioxide impregnated filter will capture sulfur dioxide and pass chlorine and chlorine dioxide. Hydrogen peroxide, which is commonly used as a bleaching agent in modern bleaching systems, reacts with iodide to form iodine and thus can cause a positive interference in the chlorine measurement. Due to the chemistry involved, the precision of the chlorine analysis will decrease as the ratio of chlorine dioxide to chlorine increases. Slightly negative calculated concentrations of chlorine may occur when sampling a vent gas with high concentrations of chlorine dioxide and very low concentrations of chlorine.

(G) The following calculation shall be performed to determine the corrected sampling flow rate:

$$S_c = S_u \left( \frac{BP - PW}{760} \right) \left( \frac{293}{273 + t} \right)$$

Where:

$S_c$ =Corrected (dry standard) sampling flow rate, liters per minute;

$S_u$ =Uncorrected sampling flow rate, L/min;

BP=Barometric pressure at time of sampling;

PW=Saturated partial pressure of water vapor, mm Hg at temperature; and

t=Ambient temperature, °C.

(H) The following calculation shall be performed to determine the moles of chlorine in the sample:

$$Cl_2 \text{ Moles} = 1/8000 (5 T_N - T_A) \times N_{Thio}$$

Where:

$T_N$ =Volume neutral titer, ml;

$T_A$ =Volume acid titer (total), ml; and

$N_{Thio}$ =Normality of sodium thiosulfate titrant.

(I) The following calculation shall be performed to determine the concentration of chlorine in the sample:

$$Cl_2 \text{ ppmv} = \frac{3005 (5 T_N - T_A) \times N_{Thio}}{S_C \times t_S}$$

Where:

$S_C$ =Corrected (dry standard) sampling flow rate, liters per minute;

$t_S$ =Time sampled, minutes;

$T_N$ =Volume neutral titer, ml;

$T_A$ =Volume acid titer (total), ml; and

$N_{Thio}$ =Normality of sodium thiosulfate titrant.

(J) The following calculation shall be performed to determine the moles of chlorine dioxide in the sample:

$$ClO_2 \text{ Moles} = 1/4000 (T_A - T_N) \times N_{Thio}$$

Where:

$T_A$ =Volume acid titer (total), ml;

$T_N$ =Volume neutral titer, ml; and

$N_{Thio}$ =Normality of sodium thiosulfate titrant.

(K) The following calculation shall be performed to determine the concentration of chlorine dioxide in the sample:

$$ClO_2 \text{ ppmv} = \frac{6010 (T_A - T_N) \times N_{Thio}}{S_C \times t_S}$$

Where:

$S_C$ =Corrected (dry standard) sampling flow rate, liters per minute;

$t_S$ =Time sampled, minutes;

$T_A$ =Volume acid titer (total), ml;

$T_N$ =Volume neutral titer, ml; and

$N_{Thio}$ =Normality of sodium thiosulfate titrant.

(iii) Any other method that measures the total HAP or methanol concentration that has been demonstrated to the Administrator's satisfaction.

(6) The minimum sampling time for each of the three test runs shall be 1 hour in which either an integrated sample or four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time, such as 15 minute intervals during the test run.

(c) *Liquid sampling locations and properties.* For purposes of selecting liquid sampling locations and for determining properties of liquid streams such as wastewaters, process waters, and condensates required in §§63.444, 63.446, and 63.447, the owner or operator shall comply with the following procedures:

(1) Samples shall be collected using the sampling procedures of the test method listed in paragraph (c)(3) of this section selected to determine liquid stream HAP concentrations;

(i) Where feasible, samples shall be taken from an enclosed pipe prior to the liquid stream being exposed to the atmosphere; and

(ii) When sampling from an enclosed pipe is not feasible, samples shall be collected in a manner to minimize exposure of the sample to the atmosphere and loss of HAP compounds prior to sampling.

(2) The volumetric flow rate of the entering and exiting liquid streams shall be determined using the inlet and outlet flow meters or other methods demonstrated to the Administrator's satisfaction. The volumetric flow rate measurements to determine actual mass removal shall be taken at the same time as the concentration measurements.

(3) The owner or operator shall conduct a minimum of three test runs that are representative of normal conditions and average the resulting pollutant concentrations. The minimum sampling time for each test run shall be 1 hour and the grab or composite samples shall be taken at approximately equally spaced intervals over the 1-hour test run period. The owner or operator shall use one of the following procedures to determine total HAP or methanol concentration:

(i) Method 305 in Appendix A of this part, adjusted using the following equation:

$$\bar{C} = \sum_{i=1}^n C_i / fm_i$$

Where:

$\bar{C}$ =Pollutant concentration for the liquid stream, parts per million by weight.

$C_i$ =Measured concentration of pollutant  $i$  in the liquid stream sample determined using Method 305, parts per million by weight.

$fm_i$ =Pollutant-specific constant that adjusts concentration measured by Method 305 to actual liquid concentration; the  $fm$  for methanol is 0.85. Additional pollutant  $fm$  values can be found in table 34, subpart G of this part.

$n$ =Number of individual pollutants,  $i$ , summed to calculate total HAP.

(ii) For determining methanol concentrations, NCASI Method DI/MEOH-94.03. This test method is incorporated by reference in §63.14(f)(1) of subpart A of this part.

(iii) Any other method that measures total HAP concentration that has been demonstrated to the Administrator's satisfaction.

(4) To determine soluble BOD<sub>5</sub> in the effluent stream from an open biological treatment unit used to comply with §§63.446(e)(2) and 63.453(j), the owner or operator shall use Method 405.1 of part 136 of this chapter with the following modifications:

(i) Filter the sample through the filter paper, into an Erlenmeyer flask by applying a vacuum to the flask sidearm. Minimize the time for which vacuum is applied to prevent stripping of volatile organics from the sample. Replace filter paper as often as needed in order to maintain filter times of less than approximately 30 seconds per filter paper. No rinsing of sample container or filter bowl into the Erlenmeyer flask is allowed.

(ii) Perform Method 405.1 on the filtrate obtained in paragraph (c)(4) of this section. Dilution water shall be seeded with 1 milliliter of final effluent per liter of dilution water. Dilution ratios may require adjustment to reflect the lower oxygen demand of the filtered sample in comparison to the total BOD<sub>5</sub>. Three BOD bottles and different dilutions shall be used for each sample.

(5) If the test method used to determine HAP concentration indicates that a specific HAP is not detectable, the value determined as the minimum measurement level (MML) of the selected test

method for the specific HAP shall be used in the compliance demonstration calculations. To determine the MML for a specific HAP using one of the test methods specified in paragraph (c)(3) of this section, one of the procedures specified in paragraphs (c)(5)(i) and (ii) of this section shall be performed. The MML for a particular HAP must be determined only if the HAP is not detected in the normal working range of the method.

(i) To determine the MML for a specific HAP, the following procedures shall be performed each time the method is set up. Set up is defined as the first time the analytical apparatus is placed in operation, after any shut down of 6 months or more, or any time a major component of the analytical apparatus is replaced.

(A) Select a concentration value for the specific HAP in question to represent the MML. The value of the MML selected shall not be below the calibration standard of the selected test method.

(B) Measure the concentration of the specific HAP in a minimum of three replicate samples using the selected test method. All replicate samples shall be run through the entire analytical procedure. The samples must contain the specific HAP at the selected MML concentration and should be representative of the liquid streams to be analyzed in the compliance demonstration. Spiking of the liquid samples with a known concentration of the target HAP may be necessary to ensure that the HAP concentration in the three replicate samples is at the selected MML. The concentration of the HAP in the spiked sample must be within 50 percent of the proposed MML for the demonstration to be valid. As an alternative to spiking, a field sample above the MML may be diluted to produce a HAP concentration at the MML. To be a valid demonstration, the diluted sample must have a HAP concentration within 20 percent of the proposed MML, and the field sample must not be diluted by more than a factor of five.

(C) Calculate the relative standard deviation (RSD) and the upper confidence limit at the 95 percent confidence level using the measured HAP concentrations determined in paragraph (c)(5)(i)(B) of this section. If the upper confidence limit of the RSD is less than 30 percent, then the selected MML is acceptable. If the upper confidence limit of the RSD is greater than or equal to 30 percent, then the selected MML is too low, and the procedures specified in paragraphs (c)(5)(i)(A) through (C) of this section must be repeated.

(ii) Provide for the Administrator's approval the selected value of the MML for a specific HAP and the rationale for selecting the MML including all data and calculations used to determine the MML. The approved MML must be used in all applicable compliance demonstration calculations.

(6) When using the MML determined using the procedures in paragraph (c)(5)(ii) of this section or when using the MML determined using the procedures in paragraph (c)(5)(i), except during set up, the analytical laboratory conducting the analysis must perform and meet the following quality assurance procedures each time a set of samples is analyzed to determine compliance.

(i) Using the selected test method, analyze in triplicate the concentration of the specific HAP in a representative sample. The sample must contain the specific HAP at a concentration that is within a factor of two of the MML. If there are no samples in the set being analyzed that contain the specific HAP at an appropriate concentration, then a sample below the MML may be spiked to produce the appropriate concentration, or a sample at a higher level may be diluted. After spiking, the sample must contain the specific HAP within 50 percent of the MML. If dilution is used instead, the diluted sample must contain the specific HAP within 20 percent of the MML and must not be diluted by more than a factor of five.

(ii) Calculate the RSD using the measured HAP concentrations determined in paragraph (c)(6)(i) of this section. If the RSD is less than 20 percent, then the laboratory is performing acceptably.

(d) *Detectable leak procedures.* To measure detectable leaks for closed-vent systems as specified in §63.450 or for pulping process wastewater collection systems as specified in §63.446(d)(2)(i), the owner or operator shall comply with the following:

(1) Method 21, of part 60, appendix A-7; and

(2) The instrument specified in Method 21 shall be calibrated before use according to the procedures specified in Method 21 on each day that leak checks are performed. The following calibration gases shall be used:

(i) Zero air (less than 10 parts per million by volume 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 parts per million by volume methane or n-hexane.

(e) *Negative pressure procedures.* To demonstrate negative pressure at process equipment enclosure openings as specified in §63.450(b), the owner or operator shall use one of the following procedures:

- (1) An anemometer to demonstrate flow into the enclosure opening;
- (2) Measure the static pressure across the opening;
- (3) Smoke tubes to demonstrate flow into the enclosure opening; or
- (4) Any other industrial ventilation test method demonstrated to the Administrator's satisfaction.

(f) *HAP concentration measurements.* For purposes of complying with the requirements in §§63.443, 63.444, and 63.447, the owner or operator shall measure the total HAP concentration as one of the following:

- (1) As the sum of all individual HAPs; or
- (2) As methanol.

(g) *Condensate HAP concentration measurement.* For purposes of complying with the kraft pulping condensate requirements in §63.446, the owner or operator shall measure the total HAP concentration as methanol. For biological treatment systems complying with §63.446(e)(2), the owner or operator shall measure total HAP as acetaldehyde, methanol, methyl ethyl ketone, and propionaldehyde and follow the procedures in §63.457(l)(1) or (2).

(h) *Bleaching HAP concentration measurement.* For purposes of complying with the bleaching system requirements in §63.445, the owner or operator shall measure the total HAP concentration as the sum of all individual chlorinated HAPs or as chlorine.

(i) *Vent gas stream calculations.* To demonstrate compliance with the mass emission rate, mass emission rate per megagram of ODP, and percent reduction requirements for vent gas streams specified in §§63.443, 63.444, 63.445, and 63.447, the owner or operator shall use the following:

- (1) The total HAP mass emission rate shall be calculated using the following equation:

$$E = K_2 \left[ \sum_{j=1}^n C_j M_j \right] Q_s$$

Where:

E=Mass emission rate of total HAP from the sampled vent, kilograms per hour.

$K_2$ =Constant,  $2.494 \times 10^{-6}$  (parts per million by volume)<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.

$C_j$ =Concentration on a dry basis of pollutant j in parts per million by volume as measured by the test methods specified in paragraph (b) of this section.

$M_j$ =Molecular weight of pollutant j, gram/gram-mole.

$Q_s$ =Vent gas stream flow rate (dry standard cubic meter per minute) at a temperature of 20 °C as indicated in paragraph (b) of this section.

n=Number of individual pollutants, i, summed to calculate total HAP.

- (2) The total HAP mass emission rate per megagram of ODP shall be calculated using the following equation:

$$F = \frac{E}{P}$$

Where:

F=Mass emission rate of total HAP from the sampled vent, in kilograms per megagram of ODP.

E=Mass emission rate of total HAP from the sampled vent, in kilograms per hour determined as specified in paragraph (i)(1) of this section.

P=The production rate of pulp during the sampling period, in megagrams of ODP per hour.

(3) The total HAP percent reduction shall be calculated using the following equation:

$$R = \frac{E_i - E_o}{E_i} (100)$$

Where:

R=Efficiency of control device, percent.

E<sub>i</sub>=Inlet mass emission rate of total HAP from the sampled vent, in kilograms of pollutant per hour, determined as specified in paragraph (i)(1) of this section.

E<sub>o</sub>=Outlet mass emission rate of total HAP from the sampled vent, in kilograms of pollutant per hour, determined as specified in paragraph (i)(1) of this section.

(j) *Liquid stream calculations.* To demonstrate compliance with the mass flow rate, mass per megagram of ODP, and percent reduction requirements for liquid streams specified in §63.446, the owner or operator shall use the following:

(1) The mass flow rates of total HAP or methanol entering and exiting the treatment process shall be calculated using the following equations:

$$E_b = \frac{K}{n \times 10^6} \left( \sum_{i=1}^n V_{bi} C_{bi} \right)$$

$$E_a = \frac{K}{n \times 10^6} \left( \sum_{i=1}^n V_{ai} C_{ai} \right)$$

Where:

E<sub>b</sub>=Mass flow rate of total HAP or methanol in the liquid stream entering the treatment process, kilograms per hour.

E<sub>a</sub>=Mass flow rate of total HAP or methanol in the liquid exiting the treatment process, kilograms per hour.

K=Density of the liquid stream, kilograms per cubic meter.

V<sub>bi</sub>=Volumetric flow rate of liquid stream entering the treatment process during each run i, cubic meters per hour, determined as specified in paragraph (c) of this section.

V<sub>ai</sub>=Volumetric flow rate of liquid stream exiting the treatment process during each run i, cubic meters per hour, determined as specified in paragraph (c) of this section.

C<sub>bi</sub>=Concentration of total HAP or methanol in the stream entering the treatment process during each run i, parts per million by weight, determined as specified in paragraph (c) of this section.

C<sub>ai</sub>=Concentration of total HAP or methanol in the stream exiting the treatment process during each run i, parts per million by weight, determined as specified in paragraph (c) of this section.

n=Number of runs.

(2) The mass of total HAP or methanol per megagram ODP shall be calculated using the following equation:

$$F = \frac{E_a}{P}$$

Where:

F=Mass loading of total HAP or methanol in the sample, in kilograms per megagram of ODP.

$E_a$ =Mass flow rate of total HAP or methanol in the wastewater stream in kilograms per hour as determined using the procedures in paragraph (j)(1) of this section.

P=The production rate of pulp during the sampling period in megagrams of ODP per hour.

(3) The percent reduction of total HAP across the applicable treatment process shall be calculated using the following equation:

$$R = \frac{E_b - E_a}{E_b} \times 100$$

Where:

R=Control efficiency of the treatment process, percent.

$E_b$ =Mass flow rate of total HAP in the stream entering the treatment process, kilograms per hour, as determined in paragraph (j)(1) of this section.

$E_a$ =Mass flow rate of total HAP in the stream exiting the treatment process, kilograms per hour, as determined in paragraph (j)(1) of this section.

(4) Compounds that meet the requirements specified in paragraphs (j)(4)(i) or (4)(ii) of this section are not required to be included in the mass flow rate, mass per megagram of ODP, or the mass percent reduction determinations.

(i) Compounds with concentrations at the point of determination that are below 1 part per million by weight; or

(ii) Compounds with concentrations at the point of determination that are below the lower detection limit where the lower detection limit is greater than 1 part per million by weight.

(k) *Oxygen concentration correction procedures.* To demonstrate compliance with the total HAP concentration limit of 20 ppmv in §63.443(d)(2), the concentration measured using the methods specified in paragraph (b)(5) of this section shall be corrected to 10 percent oxygen using the following procedures:

(1) The emission rate correction factor and excess air integrated sampling and analysis procedures of Methods 3A or 3B of part 60, appendix A-2 shall be used to determine the oxygen concentration. The samples shall be taken at the same time that the HAP samples are taken. As an alternative to Method 3B, ASME PTC 19.10-1981 [Part 10] may be used (incorporated by reference, see §63.14(i)(1)).

(2) The concentration corrected to 10 percent oxygen shall be computed using the following equation:

$$C_c = C_m \left( \frac{10.9}{20.9 - \%O_{2d}} \right)$$

Where:

$C_c$ =Concentration of total HAP corrected to 10 percent oxygen, dry basis, parts per million by volume.

$C_m$ =Concentration of total HAP dry basis, parts per million by volume, as specified in paragraph (b) of this section.

$\%O_{2d}$ =Concentration of oxygen, dry basis, percent by volume.

(l) *Biological treatment system percent reduction and mass removal calculations.* To demonstrate compliance with the condensate treatment standards specified in §63.446(e)(2) and the monitoring requirements specified in §63.453(j)(3) using a biological treatment system, the owner or operator shall use one of the procedures specified in paragraphs (1)(1) and (2) of this section. Owners or operators using a nonthoroughly mixed open biological treatment system shall also comply with paragraph (1)(3) of this section.



(1) *Percent reduction methanol procedure.* For the purposes of complying with the condensate treatment requirements specified in §63.446(e)(2) and (3), the methanol percent reduction shall be calculated using the following equations:

$$R = \frac{f_{\text{bio}}(\text{MeOH})}{(1 + 1.087(r))} * 100$$

$$r = \frac{F_{(\text{nonmethanol})}}{F_{(\text{methanol})}}$$

Where:

R = Percent destruction.

$f_{\text{bio}}(\text{MeOH})$  = The fraction of methanol removed in the biological treatment system. The site-specific biorate constants shall be determined using the appropriate procedures specified in appendix C of this part.

r = Ratio of the sum of acetaldehyde, methyl ethyl ketone, and propionaldehyde mass to methanol mass.

$F_{(\text{nonmethanol})}$  = The sum of acetaldehyde, methyl ethyl ketone, and propionaldehyde mass flow rates (kg/Mg ODP) entering the biological treatment system determined using the procedures in paragraph (j)(2) of this section.

$F_{(\text{methanol})}$  = The mass flow rate (kg/Mg ODP) of methanol entering the system determined using the procedures in paragraph (j)(2) of this section.

(2) *Mass removal methanol procedure.* For the purposes of complying with the condensate treatment requirements specified in §63.446(e)(2) and (4), or §63.446(e)(2) and (5), the methanol mass removal shall be calculated using the following equation:

$$F = F_b * \left( \frac{f_{\text{bio}}(\text{MeOH})}{(1 + 1.087(r))} \right)$$

Where:

F = Methanol mass removal (kg/Mg ODP).

$F_b$  = Inlet mass flow rate of methanol (kg/Mg ODP) determined using the procedures in paragraph (j)(2) of this section.

$f_{\text{bio}}(\text{MeOH})$  = The fraction of methanol removed in the biological treatment system. The site-specific biorate constants shall be determined using the appropriate procedures specified in appendix C of this part.

r = Ratio of the sum of acetaldehyde, methyl ethyl ketone, and propionaldehyde mass to methanol mass determined using the procedures in paragraph (1) of this section.

(3) The owner or operator of a nonthoroughly mixed open biological treatment system using the monitoring requirements specified in §63.453(p)(3) shall follow the procedures specified in section III.B.1 of appendix E of this part to determine the borate constant,  $K_s$ , and characterize the open biological treatment system during the initial and any subsequent performance tests.

(m) *Condensate segregation procedures.* The following procedures shall be used to demonstrate compliance with the condensate segregation requirements specified in §63.446(c).

(1) To demonstrate compliance with the percent mass requirements specified in §63.446(c)(2), the procedures specified in paragraphs (m)(1)(i) through (iii) of this section shall be performed.

(i) Determine the total HAP mass of all condensates from each equipment system listed in §63.446 (b)(1) through (b)(3) using the procedures specified in paragraphs (c) and (j) of this section.

(ii) Multiply the total HAP mass determined in paragraph (m)(1)(i) of this section by 0.65 to determine the target HAP mass for the high-HAP fraction condensate stream or streams.

(iii) Compliance with the segregation requirements specified in §63.446(c)(2) is demonstrated if the condensate stream or streams from each equipment system listed in §63.446(b)(1) through (3) being treated as specified in §63.446(e) contain at least as much total HAP mass as the target total HAP mass determined in paragraph (m)(1)(ii) of this section.

(2) To demonstrate compliance with the percent mass requirements specified in §63.446(c)(3), the procedures specified in paragraphs (m)(2)(i) through (ii) of this section shall be performed.

(i) Determine the total HAP mass contained in the high-HAP fraction condensates from each equipment system listed in §63.446(b)(1) through (b)(3) and the total condensates streams from the equipment systems listed in §63.446(b)(4) and (b)(5), using the procedures specified in paragraphs (c) and (j) of this section.

(ii) Compliance with the segregation requirements specified in §63.446(c)(3) is demonstrated if the total HAP mass determined in paragraph (m)(2)(i) of this section is equal to or greater than the appropriate mass requirements specified in §63.446(c)(3).

(n) *Open biological treatment system monitoring sampling storage.* The inlet and outlet grab samples required to be collected in §63.453(j)(1)(ii) shall be stored at 4 °C (40 °F) to minimize the biodegradation of the organic compounds in the samples.

(o) 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. 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.

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#### **§63.458 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 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 §§63.440, 63.443 through 63.447 and 63.450. Where these standards reference another subpart, the cited provisions will be delegated according to the delegation provisions of the referenced subpart.

(2) Approval of alternatives to using §§63.457(b)(5)(iii), 63.457(c)(3)(ii) through (iii), and 63.257(c)(5)(ii), and any 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 alternatives using §64.453(m) and any 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 37348, June 23, 2003]

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#### **§63.459 Alternative standards.**

(a) *Flint River Mill.* The owner or operator of the pulping system using the kraft process at the manufacturing facility, commonly called Weyerhaeuser Company Flint River Operations, at Old Stagecoach Road, Oglethorpe, Georgia, (hereafter the Site) shall comply with all provisions of this subpart, except as specified in paragraphs (a)(1) through (a)(5) of this section.

(1) The owner or operator of the pulping system is not required to control total HAP emissions from equipment systems specified in paragraphs (a)(1)(i) and (a)(1)(ii) if the owner or operator complies with paragraphs (a)(2) through (a)(5) of this section.

(i) The brownstock diffusion washer vent and first stage brownstock diffusion washer filtrate tank vent in the pulp washing system specified in §63.443(a)(1)(iii).

(ii) The oxygen delignification system specified in §63.443(a)(1)(v).

(2) The owner or operator of the pulping system shall control total HAP emissions from equipment systems listed in paragraphs (a)(2)(i) through (a)(2)(ix) of this section as specified in §63.443(c) and (d) of this subpart no later than April 16, 2002.

(i) The weak liquor storage tank;

(ii) The boilout tank;

(iii) The utility tank;

(iv) The fifty percent solids black liquor storage tank;

(v) The south sixty-seven percent solids black liquor storage tank;

(vi) The north sixty-seven percent solids black liquor storage tank;

(vii) The precipitator make down tanks numbers one, two and three;

(viii) The salt cake mix tank; and

(ix) The NaSH storage tank.

(3) The owner and operator of the pulping system shall operate the Isothermal Cooking system at the site while pulp is being produced in the continuous digester at any time after April 16, 2002.

(i) The owner or operator shall monitor the following parameters to demonstrate that isothermal cooking is in operation:

(A) Continuous digester dilution factor; and

(B) The difference between the continuous digester vapor zone temperature and the continuous digester extraction header temperature.

(ii) The isothermal cooking system shall be in operation when the continuous digester dilution factor and the temperature difference between the continuous digester vapor zone temperature and the continuous digester extraction header temperature are maintained as set forth in Table 2:

**TABLE 2 TO SUBPART S—ISOTHERMAL COOKING SYSTEM OPERATIONAL VALUES**

Parameter	Instrument number	Limit	Units
Digester Dilution Factor	K1DILFAC	>0.0	None
Difference in Digester Vapor Zone Temperature and Digester Extraction Header Temperature	03TI0311	<10	Degrees F.
	03TI0329		

(iii) The owner or operator shall certify annually the operational status of the isothermal cooking system.

(4) [Reserved]

(5) *Definitions.* All descriptions and references to equipment and emission unit ID numbers refer to equipment at the Site. All terms used in this paragraph shall have the meaning given them in this part and this paragraph. For the purposes of this paragraph only the following additional definitions apply:

*Boilout tank* means the tank that provides tank storage capacity for recovery of black liquor spills and evaporator water washes for return to the evaporators (emission unit ID No. U606);

*Brownstock diffusion washer* means the equipment used to wash pulp from the surge chests to further reduce lignin carryover in the pulp;

*Continuous digester* means the digester system used to chemically and thermally remove the lignin binding the wood chips to produce individual pulp fibers (emission unit ID No. P300);

*Fifty percent solids black liquor storage tank* means the tank used to store intermediate black liquor prior to final evaporation in the 1A, 1B, and 1C Concentrators (emission unit ID No. U605);

*First stage brownstock diffusion washer* means the equipment that receives and stores filtrate from the first stage of washing for return to the pressure diffusion washer;

*Isothermal cooking system* means the 1995-1996 modernization of brownstock pulping process including conversion of the Kamyr continuous vapor phase digester to an extended delignification unit and changes in the knotting, screening, and oxygen stage systems:

*NaSH storage tank* means the tank used to store sodium hydrosulfite solution prior to use as make-up to the liquor system

*North sixty-seven percent solids black liquor storage tank* means one of two tanks used to store black liquor prior to burning in the Recovery Boiler for chemical recovery (emission unit ID No. U501);

*Precipitator make down tank numbers one, two and three* mean tanks used to mix collected particulate from electrostatic precipitator chamber number one with 67% black liquor for recycle to chemical recovery in the Recovery Boiler (emission unit ID Nos. U504, U505 and U506);

*Salt cake mix tank* means the tank used to mix collected particulate from economizer hoppers with black liquor for recycle to chemical recovery in the Recovery Boiler (emission unit ID No. U503);

*South sixty-seven percent solids black liquor storage tank* means one of two tanks used to store black liquor prior to burning in the Recovery Boiler for chemical recovery (emission unit ID No. U502);

*Utility tank* means the tank used to store fifty percent liquor and, during black liquor tank inspections and repairs, to serve as a backup liquor storage tank (emission unit ID No. U611);

*Weak gas system* means high volume, low concentration or HVLC system as defined in §63.441; and

*Weak liquor storage tank* means the tank that provide surge capacity for weak black liquor from digesting prior to feed to multiple effect evaporators (emission unit ID No. U610).

(b) *Tomahawk Wisconsin Mill—(1) Applicability.* (i) The provisions of this paragraph (b) apply to the owner or operator of the stand-alone semi-chemical pulp and paper mill located at N9090 County Road E in Tomahawk, Wisconsin, referred to as the Tomahawk Mill.

(ii) The owner or operator is not required to comply with the provisions of this paragraph (b) if the owner and operator chooses to comply with the otherwise applicable sections of this subpart and provides the EPA with notice.

(iii) If the owner or operator chooses to comply with the provisions of this paragraph (b) the owner or operator shall comply with all applicable provisions of this part, including this subpart, except the following:

(A) Section 63.443(b);

(B) Section 63.443(c); and

(C) Section 63.443(d).

(2) *Collection and routing of HAP emissions.* (i) The owner or operator shall collect the total HAP emissions from each LVHC system.

(ii) Each LVHC system shall be enclosed and the HAP emissions shall be vented into a closed-vent system. The enclosures and closed-vent system shall meet requirements specified in paragraph (b)(6) of this section.

(iii) The HAP emissions shall be routed as follows:

(A) The HAP emissions collected in the closed-vent system from the digester system shall be routed through the primary indirect contact condenser, secondary indirect contact condenser, and evaporator indirect contact condenser; and

(B) The HAP emissions collected in the closed-vent system from the evaporator system and foul condensate standpipe shall be routed through the evaporator indirect contact condenser.

(3) *Collection and routing of pulping process condensates.* (i) The owner or operator shall collect the pulping process condensates from the following equipment systems:

- (A) Primary indirect contact condenser;
- (B) Secondary indirect contact condenser; and
- (C) Evaporator indirect contact condenser.

(ii) The collected pulping process condensates shall be conveyed in a closed collection system that is designed and operated to meet the requirements specified in paragraph (b)(7) of this section.

(iii) The collected pulping process condensates shall be routed in the closed collection system to the wastewater treatment plant anaerobic basins for biodegradation.

(iv) The pulping process condensates shall be discharged into the wastewater treatment plant anaerobic basins below the liquid surface of the wastewater treatment plant anaerobic basins.

(4) *HAP destruction efficiency requirements of the wastewater treatment plant.* (i) The owner or operator shall achieve a destruction efficiency of at least one pound of HAPs per ton of ODP by biodegradation in the wastewater treatment plant.

(ii) The following calculation shall be performed to determine the HAP destruction efficiency by biodegradation in the wastewater treatment plant:

$$HAP_d = \frac{\left[ (RME_{fr} \times RME_c) + (PPC_{fr} \times PPC_c) - (ABD_{fr} \times ABD_c) \right] \times 8.34}{ODP_r}$$

Where:

$HAP_d$  = HAP destruction efficiency of wastewater treatment plant (pounds of HAPs per ton of ODP);

$RME_{fr}$  = flow rate of raw mill effluent (millions of gallons per day);

$RME_c$  = HAP concentration of raw mill effluent (milligrams per liter);

$PPC_{fr}$  = flow rate of pulping process condensates (millions of gallons per day);

$PPC_c$  = HAP concentration of pulping process condensates (milligrams per liter);

$ABD_{fr}$  = flow rate of anaerobic basin discharge (millions of gallons per day);

$ABD_c$  = HAP concentration of anaerobic basin discharge (milligrams per liter); and

$ODP_r$  = rate of production of oven dried pulp (tons per day).

(5) *Monitoring requirements and parameter ranges.* (i) The owner or operator shall install, calibrate, operate, and maintain according to the manufacturer's specifications a continuous monitoring system (CMS, as defined in §63.2), using a continuous recorder, to monitor the following parameters:

- (A) Evaporator indirect contact condenser vent temperature;
- (B) Pulping process condensates flow rate;
- (C) Wastewater treatment plant effluent flow rate; and
- (D) Production rate of ODP.

(ii) The owner or operator shall additionally monitor, on a daily basis, in each of the four anaerobic basins, the ratio of volatile acid to alkalinity (VA/A ratio). The owner or operator shall use the test methods identified for determining acidity and alkalinity as specified in 40 CFR 136.3, Table 1B.

(iii) The temperature of the evaporator indirect contact condenser vent shall be maintained at or below 140 °F on a continuous basis.

(iv) The VA/A ratio in each of the four anaerobic basins shall be maintained at or below 0.5 on a continuous basis.

(A) The owner or operator shall measure the methanol concentration of the outfall of any basin, using NCASI Method DI/MEOH 94.03 (incorporated by reference, see §63.14), when the VA/A ratio of that basin exceeds the following:

(1) 0.38, or

(2) The highest VA/A ratio at which the outfall of any basin has previously measured non-detect for methanol, using NCASI Method DI/MEOH 94.03 (incorporated by reference, see §63.14).

(B) If the outfall of that basin measures detect for methanol, the owner or operator shall verify compliance with the emission standard specified in paragraph (b)(4) of this section by conducting a performance test pursuant to the requirements specified in paragraph (b)(8) of this section.

(v) The owner or operator may seek to establish or reestablish the parameter ranges, and/or the parameters required to be monitored as provided in paragraphs (b)(5)(i) through (v) of this section, by following the provisions of §63.453(n)(1) through (4).

(6) *Standards and monitoring requirements for each enclosure and closed-vent system.* (i) The owner or operator shall comply with the design and operational requirements specified in paragraphs (b)(6)(ii) through (iv) of this section, and the monitoring requirements of paragraphs (b)(6)(v) through (x) of this section for each enclosure and closed-vent system used for collecting and routing of HAP emissions as specified in paragraph (b)(2) of this section.

(ii) Each enclosure shall be maintained at negative pressure at each enclosure or hood opening as demonstrated by the procedures specified in §63.457(e). Each enclosure or hood opening closed during the initial performance test shall be maintained in the same closed and sealed position as during the performance test at all times except when necessary to use the opening for sampling, inspection, maintenance, or repairs.

(iii) Each component of the closed-vent system that is operated at positive pressure shall be designed for and operated with no detectable leaks as indicated by an instrument reading of less than 500 parts per million by volume above background, as measured by the procedures specified in §63.457(d).

(iv) Each bypass line in the closed-vent system that could divert vent streams containing HAPs to the atmosphere without meeting the routing requirements specified in paragraph (b)(2) of this section shall comply with either of the following requirements:

(A) On each bypass line, the owner or operator shall install, calibrate, maintain, and operate according to the manufacturer's specifications a flow indicator that provides a record of the presence of gas stream flow in the bypass line at least once every 15 minutes. The flow indicator shall be installed in the bypass line in such a way as to indicate flow in the bypass line; or

(B) For bypass line valves that are not computer controlled, the owner or operator shall maintain the bypass line valve in the closed position with a car seal or seal placed on the valve or closure mechanism in such a way that the valve or closure mechanism cannot be opened without breaking the seal.

(v) For each enclosure opening, the owner or operator shall perform, at least once every 30 days, a visual inspection of the closure mechanism specified in paragraph (b)(6)(ii) of this section to ensure the opening is maintained in the closed position and sealed.

(vi) For each closed-vent system required by paragraph (b)(2) of this section, the owner or operator shall perform a visual inspection every 30 days and at other times as requested by the Administrator. The visual inspection shall include inspection of ductwork, piping, enclosures, and connections to covers for visible evidence of defects.

(vii) For positive pressure closed-vent systems, or portions of closed-vent systems, the owner or operator shall demonstrate no detectable leaks as specified in paragraph (b)(6)(iii) of this section, measured initially and annually by the procedures in §63.457(d).

(viii) For each enclosure that is maintained at negative pressure, the owner or operator shall demonstrate initially and annually that it is maintained at negative pressure as specified in §63.457(e).

(ix) For each valve or closure mechanism as specified in paragraph (b)(6)(iv)(B) of this section, the owner or operator shall perform an inspection at least once every 30 days to ensure that the valve is maintained in the closed position and the emissions point gas stream is not diverted through the bypass line.

(x) If an inspection required by paragraph (b)(6) of this section identifies visible defects in ductwork, piping, enclosures, or connections to covers required by paragraph (b)(6) of this section, or if an instrument reading of 500 parts per million by volume or greater above background is measured, or if the enclosure openings are not maintained at negative pressure, then the following corrective actions shall be taken as soon as follows:

(A) A first effort to repair or correct the closed-vent system shall be made as soon as practicable but no later than 5 calendar days after the problem is identified.

(B) The repair or corrective action shall be completed no later than 15 calendar days after the problem is identified.

(7) *Standards and monitoring requirements for the pulping process condensates closed collection system.* (i) The owner or operator shall comply with the design and operational requirements specified in paragraphs (b)(7)(ii) through (iii) of this section, and monitoring requirements of paragraph (b)(7)(iv) for the equipment systems in paragraph (b)(3) of this section used to route the pulping process condensates in a closed collection system.

(ii) Each closed collection system shall meet the individual drain system requirements specified in §§63.960, 63.961, and 63.962, except that the closed vent systems shall be designed and operated in accordance with paragraph (b)(6) of this section, instead of in accordance with §63.693 as specified in §63.692(a)(3)(ii), (b)(3)(ii)(A), and (b)(3)(ii)(B)(5)(iii); and

(iii) If a condensate tank is used in the closed collection system, the tank shall meet the following requirements:

(A) The fixed roof and all openings (e.g., access hatches, sampling ports, gauge wells) shall be designed and operated with no detectable leaks as indicated by an instrument reading of less than 500 parts per million above background, and vented into a closed-vent system that meets the requirements of paragraph (b)(6) of this section and routed in accordance with paragraph (b)(2) of this section; and

(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 the tank contains pulping process condensates or any HAPs removed from a pulping process condensate stream except when it is necessary to use the opening for sampling, removal, or for equipment inspection, maintenance, or repair.

(iv) For each pulping process condensate closed collection system used to comply with paragraph (b)(3) of this section, the owner or operator shall perform a visual inspection every 30 days and shall comply with the inspection and monitoring requirements specified in §63.964 except for the closed-vent system and control device inspection and monitoring requirements specified in §63.964(a)(2).

(8) *Quarterly performance testing.* (i) The owner or operator shall, within 45 days after the beginning of each quarter, conduct a performance test.

(ii) The owner or operator shall use NCASI Method DI/HAPS-99.01 (incorporated by reference, see §63.14) to collect a grab sample and determine the HAP concentration of the Raw Mill Effluent, Pulping Process Condensates, and Anaerobic Basin Discharge for the quarterly performance test conducted during the first quarter each year.

(iii) For each of the remaining three quarters, the owner or operator may use NCASI Method DI/MEOH 94.03 (incorporated by reference, see §63.14) as a surrogate to collect and determine the HAP concentration of the Raw Mill Effluent, Pulping Process Condensates, and Anaerobic Basin Discharge.

(iv) The sample used to determine the HAP or Methanol concentration in the Raw Mill Effluent, Pulping Process Condensates, or Anaerobic Basin Discharge shall be a composite of four grab samples taken evenly spaced over an eight hour time period.

(v) The Raw Mill Effluent grab samples shall be taken from the raw mill effluent composite sampler.

(vi) The Pulping Process Condensates grab samples shall be taken from a line tap on the closed condensate collection system prior to discharge into the wastewater treatment plant.

(vii) The Anaerobic Basic Discharge grab samples shall be taken subsequent to the confluence of the four anaerobic basin discharges.

(viii) The flow rate of the Raw Mill Effluent, Pulping Process Condensates, and Anaerobic Basin Discharge, and the production rate of ODP shall be averaged over eight hours.

(ix) The data collected as specified in paragraphs (b)(5) and (b)(8) of this section shall be used to determine the HAP destruction efficiency of the wastewater treatment plant as specified in paragraph (b)(4)(ii) of this section.

(x) The HAP destruction efficiency shall be at least as great as that specified by paragraph (b)(4)(i) of this section.

(9) *Recordkeeping requirements.* (i) The owner or operator shall comply with the recordkeeping requirements as specified in Table 1 of subpart S of part 63 as it pertains to §63.10.

(ii) The owner or operator shall comply with the recordkeeping requirements as specified in §63.454(b).

(iii) The owner or operator shall comply with the recordkeeping requirements as specified in §63.453(d).

(10) *Reporting requirements.* (i) Each owner or operator shall comply with the reporting requirements as specified in Table 1 of §63.10.

(ii) Each owner or operator shall comply with the reporting requirements as specified in §63.455(d).

(11) *Violations.* (i) Failure to comply with any applicable provision of this part shall constitute a violation.

(ii) Periods of excess emissions shall not constitute a violation provided the time of excess emissions divided by the total process operating time in a semi-annual reporting period does not exceed one percent. All periods of excess emission shall be reported, and shall include:

(iii) Notwithstanding paragraph (b)(11)(ii) of this section, any excess emissions that present an imminent threat to public health or the environment, or may cause serious harm to public health or the environment, shall constitute a violation.

[66 FR 34124, June 27, 2001, as amended at 66 FR 52538, Oct. 16, 2001; 69 FR 19740, Apr. 13, 2004; 77 FR 55713, Sept. 11, 2012]

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**Table 1 to Subpart S of Part 63—General Provisions Applicability to Subpart S<sup>a</sup>**

Reference	Applies to subpart S	Comment
63.1(a)(1)-(3)	Yes	
63.1(a)(4)	Yes	Subpart S (this table) specifies applicability of each paragraph in subpart A to subpart S.
63.1(a)(5)	No	Section reserved.
63.1(a)(6)	Yes	
63.1(a)(7)-(9)	No	Sections reserved.
63.1(a)(10)	No	



		Subpart S and other cross-referenced subparts specify calendar or operating day.
63.1(a)(11)-(12)	Yes	
63.1(b)(1)	No	Subpart S specifies its own applicability.
63.1(b)(2)	No	Section reserved.
63.1(b)(3)	Yes	
63.1(c)(1)-(2)	Yes	
63.1(c)(3)-(4)	No	Sections reserved.
63.1(c)(5)	Yes	
63.1(d)	No	Section reserved.
63.1(e)	Yes	
63.2	Yes	
63.3	Yes	
63.4(a)(1)-(2)	Yes	
63.4(a)(3)-(5)	No	Sections reserved.
63.4(b)	Yes	
63.4(c)	Yes	
63.5(a)	Yes	
63.5(b)(1)	Yes	
63.5(b)(2)	No	Section reserved.
63.5(b)(3)-(4)	Yes	
63.5(b)(5)	No	Section reserved.
63.5(b)(6)	Yes	
63.5(c)	No	Section reserved.
63.5(d)	Yes	
63.5(e)	Yes	
63.5(f)	Yes	
63.6(a)	Yes	
63.6(b)(1)-(5)	No	Subpart S specifies compliance dates for sources subject to subpart S.
63.6(b)(6)	No	Section reserved.
63.6(b)(7)	No	Subpart S specifies compliance dates for sources subject to subpart S.
63.6(c)(1)-(2)	No	Subpart S specifies compliance dates for sources subject to subpart S.
63.6(c)(3)-(4)	No	Sections reserved.
63.6(c)(5)	No	Subpart S specifies compliance dates for sources subject to subpart S.
63.6(d)	No	Section reserved.
63.6(e)(1)(i)	No	See §63.453(q) for general duty requirement.
63.6(e)(1)(ii)	No	
63.6(e)(1)(iii)	Yes	
63.6(e)(2)	No	Section reserved.
63.6(e)(3)	No	
63.6(f)(1)	No	
63.6(f)(2)-(3)	Yes	
63.6(g)	Yes	
63.6(h)(1)-(2)	No	Pertains to continuous opacity monitors that are not part of this standard.
63.6(h)(3)	No	Section reserved.
63.6(h)(4)-(9)	No	Pertains to continuous opacity monitors that are not part of this standard.
63.6(i)(1)-(14)	Yes	
63.6(i)(15)	No	Section reserved.

63.6(i)(16)	Yes	
63.6(j)	Yes	
63.7(a)	Yes	
63.7(b)	Yes	
63.7(c)	Yes	
63.7(d)	Yes	
63.7(e)(1)	No	Replaced with §63.457(o), which specifies performance testing conditions under subpart S.
63.7(e)(2)-(4)	Yes	
63.7(f)	Yes	
63.7(g)(1)	Yes	
63.7(g)(2)	No	Section reserved.
63.7(g)(3)	Yes	
63.7(h)	Yes	
63.8(a)(1)-(2)	Yes	
63.8(a)(3)	No	Section reserved.
63.8(a)(4)	Yes	
63.8(b)(1)	Yes	
63.8(b)(2)	No	Subpart S specifies locations to conduct monitoring.
63.8(b)(3)	Yes	
63.8(c)(1)-(c)(1)(i)	No	See §63.453(q) for general duty requirement (which includes monitoring equipment).
63.8(c)(1)(ii)	Yes	
63.8(c)(1)(iii)	No	
63.8(c)(2)-(3)	Yes	
63.8(c)(4)	No	Subpart S allows site specific determination of monitoring frequency in §63.453(n)(4).
63.8(c)(5)	No	Pertains to continuous opacity monitors that are not part of this standard.
63.8(c)(6)-(8)	Yes	
63.8(d)(1)-(2)	Yes	
63.8(d)(3)	Yes, except for last sentence, which refers to an SSM plan	SSM plans are not required
63.8(e)	Yes	
63.8(f)(1)-(5)	Yes	
63.8(f)(6)	No	Subpart S does not specify relative accuracy test for CEMs.
63.8(g)	Yes	
63.9(a)	Yes	
63.9(b)(1)-(2)	Yes	Initial notifications must be submitted within one year after the source becomes subject to the relevant standard.
63.9(b)(3)	No	Section reserved.
63.9(b)(4)-(5)	Yes	
63.9(c)	Yes	
63.9(d)	No	Special compliance requirements are only applicable to kraft mills.
63.9(e)	Yes	
63.9(f)	No	Pertains to continuous opacity monitors that are not part of this standard.
63.9(g)(1)	Yes	
63.9(g)(2)	No	Pertains to continuous opacity monitors that are not part of this standard.
63.9(g)(3)	No	Subpart S does not specify relative accuracy tests, therefore no notification is required for an alternative.

63.9(h)(1)-(3)	Yes	
63.9(h)(4)	No	Section reserved.
63.9(h)(5)-(6)	Yes	
63.9(i)	Yes	
63.9(j)	Yes	
63.10(a)	Yes	
63.10(b)(1)	Yes	
63.10(b)(2)(i)	No	
63.10(b)(2)(ii)	No	See §63.454(g) for recordkeeping of (1) occurrence and duration and (2) actions taken during malfunction.
63.10(b)(2)(iii)	Yes	
63.10(b)(2)(iv)-(v)	No	
63.10(b)(2)(vi)-(xiv)	Yes	
63.10(b)(3)	Yes	
63.10(c)(1)	Yes	
63.10(c)(2)-(4)	No	Sections reserved.
63.10(c)(5)-(8)	Yes	
63.10(c)(9)	No	Section reserved.
63.10(c)(10)-(11)	No	See §63.454(g) for malfunction recordkeeping requirements.
63.10(c)(12)-(14)	Yes	
63.10(c)(15)	No	
63.10(d)(1)-(2)	Yes	
63.10(d)(3)	No	Pertains to continuous opacity monitors that are not part of this standard.
63.10(d)(4)	Yes	
63.10(d)(5)	No	See §63.455(g) for malfunction reporting requirements.
63.10(e)(1)	Yes	
63.10(e)(2)(i)	Yes	
63.10(e)(2)(ii)	No	Pertains to continuous opacity monitors that are not part of this standard.
63.10(e)(3)	Yes	
63.10(e)(4)	No	Pertains to continuous opacity monitors that are not part of this standard.
63.10(f)	Yes	
63.11-63.15	Yes	

<sup>a</sup>Wherever subpart A specifies “postmark” dates, submittals may be sent by methods other than the U.S. Mail (e.g., by fax or courier). Submittals shall be sent by the specified dates, but a postmark is not required.

[77 FR 55713, Sept. 11, 2012]

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Appendix E

40 CFR Part 63, Subpart MM, *National Emissions Standards for Hazardous Air Pollutants for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite and Stand-Alone Semichemical Pulp Mills*



## ELECTRONIC CODE OF FEDERAL REGULATIONS

e-CFR Data is current as of October 14, 2013

Title 40: Protection of Environment

PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES (CONTINUED)

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### Subpart MM—National Emission Standards for Hazardous Air Pollutants for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite, and Stand-Alone Semichemical Pulp Mills

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§63.867 Reporting requirements.

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Table 1 to Subpart MM of Part 63—General Provisions Applicability to Subpart MM

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SOURCE: 66 FR 3193, Jan. 12, 2001, unless otherwise noted.

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#### **§63.860 Applicability and designation of affected source.**

(a) The requirements of this subpart apply to the owner or operator of each kraft, soda, sulfite, or stand-alone semichemical pulp mill that is a major source of hazardous air pollutants (HAP) emissions as defined in §63.2.

(b) *Affected sources.* The requirements of this subpart apply to each new or existing affected source listed in paragraphs (b)(1) through (7) of this section:

(1) Each existing chemical recovery system (as defined in §63.861) located at a kraft or soda pulp mill.

(2) Each new nondirect contact evaporator (NDCE) recovery furnace and associated smelt dissolving tank(s) located at a kraft or soda pulp mill.

(3) Each new direct contact evaporator (DCE) recovery furnace system (as defined in §63.861) and associated smelt dissolving tank(s) located at a kraft or soda pulp mill.

(4) Each new lime kiln located at a kraft or soda pulp mill.

(5) Each new or existing sulfite combustion unit located at a sulfite pulp mill, except such existing units at Weyerhaeuser Paper Company's Cosmopolis, Washington facility (Emission Unit no. AP-10).

(6) Each new or existing semichemical combustion unit located at a stand-alone semichemical pulp mill.

(7) The requirements of the alternative standard in §63.862(d) apply to the hog fuel dryer at Weyerhaeuser Paper Company's Cosmopolis, Washington facility (Emission Unit no. HD-14).

(c) The requirements of the General Provisions in subpart A of this part that apply to the owner or operator subject to the requirements of this subpart are identified in Table 1 to this subpart.

[66 FR 3193, Jan. 12, 2001, as amended at 68 FR 7713, Feb. 18, 2003]

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### **§63.861 Definitions.**

All terms used in this subpart are defined in the Clean Air Act, in subpart A of this part, or in this section. For the purposes of this subpart, if the same term is defined in subpart A or any other subpart of this part and in this section, it must have the meaning given in this section.

*Bag leak detection system* means an instrument that is capable of monitoring PM loadings in the exhaust of a fabric filter in order to detect bag failures. A bag leak detection system includes, but is not limited to, an instrument that operates on triboelectric, light scattering, light transmittance, or other principle to monitor relative PM loadings.

*Black liquor* means spent cooking liquor that has been separated from the pulp produced by the kraft, soda, or semichemical pulping process.

*Black liquor gasification* means the thermochemical conversion of black liquor into a combustible gaseous product.

*Black liquor oxidation (BLO) system* means the vessels used to oxidize the black liquor, with air or oxygen, and the associated storage tank(s).

*Black liquor solids (BLS)* means the dry weight of the solids in the black liquor that enters the recovery furnace or semichemical combustion unit.

*Black liquor solids firing rate* means the rate at which black liquor solids are fed to the recovery furnace or the semichemical combustion unit.

*Chemical recovery combustion source* means any source in the chemical recovery area of a kraft, soda, sulfite or stand-alone semichemical pulp mill that is an NDCE recovery furnace, a DCE recovery furnace system, a smelt dissolving tank, a lime kiln, a sulfite combustion unit, or a semichemical combustion unit.

*Chemical recovery system* means all existing DCE and NDCE recovery furnaces, smelt dissolving tanks, and lime kilns at a kraft or soda pulp mill. Each existing recovery furnace, smelt dissolving tank, or lime kiln is considered a process unit within a chemical recovery system.

*Direct contact evaporator (DCE) recovery furnace* means a kraft or soda recovery furnace equipped with a direct contact evaporator that concentrates strong black liquor by direct contact between the hot recovery furnace exhaust gases and the strong black liquor.

*Direct contact evaporator (DCE) recovery furnace system* means a direct contact evaporator recovery furnace and any black liquor oxidation system, if present, at the pulp mill.

*Dry electrostatic precipitator (ESP) system* means an electrostatic precipitator with a dry bottom (*i.e.*, no black liquor, water, or other fluid is used in the ESP bottom) and a dry particulate matter return system (*i.e.*, no black liquor, water, or other fluid is used to transport the collected PM to the mix tank).

*Fabric filter* means an air pollution control device used to capture PM by filtering a gas stream through filter media; also known as a baghouse.

*Hazardous air pollutants (HAP) metals* means the sum of all emissions of antimony, arsenic, beryllium, cadmium, chromium, cobalt, lead, manganese, mercury, nickel, and selenium as measured by EPA Method 29 (40 CFR part 60, appendix A) and with all nondetect data treated as one-half of the method detection limit.

*Hog fuel dryer* means the equipment that combusts fine particles of wood waste (hog fuel) in a fluidized bed and directs the heated exhaust stream to a rotary dryer containing wet hog fuel to be dried prior to combustion in the hog fuel boiler at Weyerhaeuser Paper Company's Cosmopolis, Washington facility. The hog fuel dryer at Weyerhaeuser Paper Company's Cosmopolis, Washington facility is Emission Unit no. HD-14.



*Kraft pulp mill* means any stationary source that produces pulp from wood by cooking (digesting) wood chips in a solution of sodium hydroxide and sodium sulfide. The recovery process used to regenerate cooking chemicals is also considered part of the kraft pulp mill.

*Kraft recovery furnace* means a recovery furnace that is used to burn black liquor produced by the kraft pulping process, as well as any recovery furnace that burns black liquor produced from both the kraft and semichemical pulping processes, and includes the direct contact evaporator, if applicable. Includes black liquor gasification.

*Lime kiln* means the combustion unit (e.g., rotary lime kiln or fluidized-bed calciner) used at a kraft or soda pulp mill to calcine lime mud, which consists primarily of calcium carbonate, into quicklime, which is calcium oxide (CaO).

*Lime production rate* means the rate at which dry lime, measured as CaO, is produced in the lime kiln.

*Method detection limit* means the minimum concentration of an analyte that can be determined with 99 percent confidence that the true value is greater than zero.

*Modification* means, for the purposes of §63.862(a)(1)(ii)(E)(1), any physical change (excluding any routine part replacement or maintenance) or operational change (excluding any operational change that occurs during a start-up, shutdown, or malfunction) that is made to the air pollution control device that could result in an increase in PM emissions.

*Nondetect data* means, for the purposes of this subpart, any value that is below the method detection limit.

*Nondirect contact evaporator (NDCE) recovery furnace* means a kraft or soda recovery furnace that burns black liquor that has been concentrated by indirect contact with steam.

*Particulate matter (PM)* means total particulate matter as measured by EPA Method 5, EPA Method 17 (§63.865(b)(1)), or EPA Method 29 (40 CFR part 60, appendix A).

*Process unit* means an existing DCE or NDCE recovery furnace, smelt dissolving tank, or lime kiln in a chemical recovery system at a kraft or soda mill.

*Recovery furnace* means an enclosed combustion device where concentrated black liquor produced by the kraft or soda pulping process is burned to recover pulping chemicals and produce steam. Includes black liquor gasification.

*Regenerative thermal oxidizer (RTO)* means a thermal oxidizer that transfers heat from the exhaust gas stream to the inlet gas stream by passing the exhaust stream through a bed of ceramic stoneware or other heat-absorbing medium before releasing it to the atmosphere, then reversing the gas flow so the inlet gas stream passes through the heated bed, raising the temperature of the inlet stream close to or at its ignition temperature.

*Semichemical combustion unit* means any equipment used to combust or pyrolyze black liquor at stand-alone semichemical pulp mills for the purpose of chemical recovery. Includes black liquor gasification.

*Similar process units* means all existing DCE and NDCE recovery furnaces, smelt dissolving tanks, or lime kilns at a kraft or soda pulp mill.

*Smelt dissolving tanks (SDT)* means vessels used for dissolving the smelt collected from a kraft or soda recovery furnace.

*Soda pulp mill* means any stationary source that produces pulp from wood by cooking (digesting) wood chips in a sodium hydroxide solution. The recovery process used to regenerate cooking chemicals is also considered part of the soda pulp mill.

*Soda recovery furnace* means a recovery furnace used to burn black liquor produced by the soda pulping process and includes the direct contact evaporator, if applicable. Includes black liquor gasification.

*Stand-alone semichemical pulp mill* means any stationary source that produces pulp from wood by partially digesting wood chips in a chemical solution followed by mechanical defibrating (grinding), and has an onsite chemical recovery process that is not integrated with a kraft pulp mill.

*Startup* means, for the chemical recovery system employing black liquor gasification at Georgia-Pacific's facility in Big Island, Virginia only, the end of the gasification system commissioning phase. Commissioning is that period of time in which each part of the new gasification system will be checked and operated on its own to make sure it is installed and functions properly. Commissioning will conclude with the successful completion of the gasification technology supplier's performance warranty demonstration, which proves the technology and equipment are performing to warranted levels and the system is ready to be placed in active service. For all other affected sources under this subpart, startup has the meaning given in §63.2.

*Sulfite combustion unit* means a combustion device, such as a recovery furnace or fluidized-bed reactor, where spent liquor from the sulfite pulping process (i.e., red liquor) is burned to recover pulping chemicals.

*Sulfite pulp mill* means any stationary source that produces pulp from wood by cooking (digesting) wood chips in a solution of sulfurous acid and bisulfite ions. The recovery process used to regenerate cooking chemicals is also considered part of the sulfite pulp mill.

*Total hydrocarbons (THC)* means the sum of organic compounds measured as carbon using EPA Method 25A (40 CFR part 60, appendix A).

[66 FR 3193, Jan. 12, 2001, as amended at 66 FR 16408, Mar. 26, 2001; 68 FR 7713, Feb. 18, 2003]

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### **§63.862 Standards.**

(a) *Standards for HAP metals: existing sources.* (1) Each owner or operator of an existing kraft or soda pulp mill must comply with the requirements of either paragraph (a)(1)(i) or (ii) of this section.

(i) Each owner or operator of a kraft or soda pulp mill must comply with the PM emissions limits in paragraphs (a)(1)(i)(A) through (C) of this section.

(A) The owner or operator of each existing kraft or soda recovery furnace must ensure that the concentration of PM in the exhaust gases discharged to the atmosphere is less than or equal to 0.10 gram per dry standard cubic meter (g/dscm) (0.044 grain per dry standard cubic foot (gr/dscf)) corrected to 8 percent oxygen.

(B) The owner or operator of each existing kraft or soda smelt dissolving tank must ensure that the concentration of PM in the exhaust gases discharged to the atmosphere is less than or equal to 0.10 kilogram per megagram (kg/Mg) (0.20 pound per ton (lb/ton)) of black liquor solids fired.

(C) The owner or operator of each existing kraft or soda lime kiln must ensure that the concentration of PM in the exhaust gases discharged to the atmosphere is less than or equal to 0.15 g/dscm (0.064 gr/dscf) corrected to 10 percent oxygen.

(ii) As an alternative to meeting the requirements of §63.862(a)(1)(i), each owner or operator of a kraft or soda pulp mill may establish PM emissions limits for each existing kraft or soda recovery furnace, smelt dissolving tank, and lime kiln that operates 6,300 hours per year or more by:

(A) Establishing an overall PM emission limit for each existing process unit in the chemical recovery system at the kraft or soda pulp mill using the methods in §63.865(a)(1) and (2).

(B) The emissions limits for each kraft recovery furnace, smelt dissolving tank, and lime kiln that are used to establish the overall PM limit in paragraph (a)(1)(ii)(A) of this section must not be less stringent than the emissions limitations required by §60.282 of part 60 of this chapter for any kraft recovery furnace, smelt dissolving tank, or lime kiln that is subject to the requirements of §60.282.

(C) Each owner or operator of an existing kraft or soda recovery furnace, smelt dissolving tank, or lime kiln must ensure that the PM emissions discharged to the atmosphere from each of these sources are less than or equal to the applicable PM emissions limits, established using the methods in §63.865(a)(1), that are used to establish the overall PM emissions limits in paragraph (a)(1)(ii)(A) of this section.

(D) Each owner or operator of an existing kraft or soda recovery furnace, smelt dissolving tank, or lime kiln must reestablish the emissions limits determined in paragraph (a)(1)(ii)(A) of this section if either of the actions in paragraphs (a)(1)(ii)(D)(1) and (2) of this section are taken:

(1) The air pollution control system for any existing kraft or soda recovery furnace, smelt dissolving tank, or lime kiln for which an emission limit was established in paragraph (a)(1)(ii)(A) of this section is modified (as defined in §63.861) or replaced; or

(2) Any kraft or soda recovery furnace, smelt dissolving tank, or lime kiln for which an emission limit was established in paragraph (a)(1)(ii)(A) of this section is shut down for more than 60 consecutive days.

(iii) Each owner or operator of an existing kraft or soda recovery furnace, smelt dissolving tank, or lime kiln that operates less than 6,300 hours per year must comply with the applicable PM emissions limits for that process unit provided in paragraph (a)(1)(i) of this section.

(2) Except as specified in paragraph (d) of this section, the owner or operator of each existing sulfite combustion unit must ensure that the concentration of PM in the exhaust gases discharged to the atmosphere is less than or equal to 0.092 g/dscm (0.040 gr/dscf) corrected to 8 percent oxygen.

(b) *Standards for HAP metals: new sources.* (1) The owner or operator of any new kraft or soda recovery furnace must ensure that the concentration of PM in the exhaust gases discharged to the atmosphere is less than or equal to 0.034 g/dscm (0.015 gr/dscf) corrected to 8 percent oxygen.

(2) The owner or operator of any new kraft or soda smelt dissolving tank must ensure that the concentration of PM in the exhaust gases discharged to the atmosphere is less than or equal to 0.06 kg/Mg (0.12 lb/ton) of black liquor solids fired.

(3) The owner or operator of any new kraft or soda lime kiln must ensure that the concentration of PM in the exhaust gases discharged to the atmosphere is less than or equal to 0.023 g/dscm (0.010 gr/dscf) corrected to 10 percent oxygen.

(4) The owner or operator of any new sulfite combustion unit must ensure that the concentration of PM in the exhaust gases discharged to the atmosphere is less than or equal to 0.046 g/dscm (0.020 gr/dscf) corrected to 8 percent oxygen.

(c) *Standards for gaseous organic HAP.* (1) The owner or operator of any new recovery furnace at a kraft or soda pulp mill must ensure that the concentration of gaseous organic HAP, as measured by methanol, discharged to the atmosphere is no greater than 0.012 kg/Mg (0.025 lb/ton) of black liquor solids fired.

(2) The owner or operator of each existing or new semichemical combustion unit must ensure that:

(i) The concentration of gaseous organic HAP, as measured by total hydrocarbons reported as carbon, discharged to the atmosphere is less than or equal to 1.49 kg/Mg (2.97 lb/ton) of black liquor solids fired; or

(ii) The gaseous organic HAP emissions, as measured by total hydrocarbons reported as carbon, are reduced by at least 90 percent prior to discharge of the gases to the atmosphere.

(d) *Alternative standard.* As an alternative to meeting the requirements of paragraph (a)(2) of this section, the owner or operator of the existing hog fuel dryer at Weyerhaeuser Paper Company's Cosmopolis, Washington facility (Emission Unit no. HD-14) must ensure that the mass of PM in the exhaust gases discharged to the atmosphere from the hog fuel dryer is less than or equal to 4.535 kilograms per hour (kg/hr) (10.0 pounds per hour (lb/hr)).

[66 FR 3193, Jan. 12, 2001, as amended at 68 FR 7713, Feb. 18, 2003; 68 FR 67954, Dec. 5, 2003]

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### **§63.863 Compliance dates.**

(a) The owner or operator of an existing affected source or process unit must comply with the requirements in this subpart no later than March 13, 2004.

(b) The owner or operator of a new affected source that has an initial startup date after March 13, 2001 must comply with the requirements in this subpart immediately upon startup of the affected source, except as specified in §63.6(b).

(c) The two existing semichemical combustion units at Georgia-Pacific Corporation's Big Island, VA facility must comply with the requirements of this subpart no later than March 13, 2004, except as provided in paragraphs (c)(1) and (c)(2) of this section.

(1) If Georgia-Pacific Corporation constructs a new black liquor gasification system at Big Island, VA, determines that its attempt to start up the new system has been a failure and, therefore, must construct another type of chemical recovery unit to replace the two existing semichemical combustion units at Big Island, then the two existing semichemical combustion units must comply with the requirements of this subpart by the earliest of the following dates: three years after Georgia-Pacific declares the gasification system a failure, upon startup of the new replacement unit(s), or March 1, 2008.

(2) After March 13, 2004 and if Georgia-Pacific Corporation constructs and successfully starts up a new black liquor gasification system, the provisions of this subpart will not apply to the two existing semichemical combustion units at Georgia-Pacific's facility in Big Island, VA for up to 1500 hours, while Georgia-Pacific conducts trials of the new gasification system on black liquor from a Kraft pulp mill.

[66 FR 3193, Jan. 12, 2001, as amended at 66 FR 16408, Mar. 26, 2001; 66 FR 37593, July 19, 2001; 68 FR 46108, Aug. 5, 2003]

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#### **§63.864 Monitoring requirements.**

(a)-(c) [Reserved]

(d) *Continuous opacity monitoring system (COMS)*. The owner or operator of each affected kraft or soda recovery furnace or lime kiln equipped with an ESP must install, calibrate, maintain, and operate a COMS according to the provisions in §§63.6(h) and 63.8 and paragraphs (d)(1) through (4) of this section.

(1)-(2) [Reserved]

(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).

(e) *Continuous parameter monitoring system (CPMS)*. For each CPMS required in this section, the owner or operator of each affected source or process unit must meet the requirements in paragraphs (e)(1) through (14) of this section.

(1)-(9) [Reserved]

(10) The owner or operator of each affected kraft or soda recovery furnace, kraft or soda lime kiln, sulfite combustion unit, or kraft or soda smelt dissolving tank equipped with a wet scrubber must install, calibrate, maintain, and operate a CPMS that can be used to determine and record the pressure drop across the scrubber and the scrubbing liquid flow rate at least once every successive 15-minute period using the procedures in §63.8(c), as well as the procedures in paragraphs (e)(10)(i) and (ii) of this section:

(i) The monitoring device used for the continuous measurement of the pressure drop of the gas stream across the scrubber must be certified by the manufacturer to be accurate to within a gage pressure of  $\pm 500$  pascals ( $\pm 2$  inches of water gage pressure); and

(ii) The monitoring device used for continuous measurement of the scrubbing liquid flow rate must be certified by the manufacturer to be accurate within  $\pm 5$  percent of the design scrubbing liquid flow rate.

(11) The owner or operator of each affected semichemical combustion unit equipped with an RTO must install, calibrate, maintain, and operate a CPMS that can be used to determine and record the operating temperature of the RTO at least once every successive 15-minute period using the procedures in §63.8(c). The monitor must compute and record the operating temperature at the point of incineration of effluent gases that are emitted using a temperature monitor accurate to within  $\pm 1$  percent of the temperature being measured.

(12) The owner or operator of the affected hog fuel dryer at Weyerhaeuser Paper Company's Cosmopolis, Washington facility (Emission Unit no. HD-14) must meet the requirements in paragraphs (e)(12)(i) through (xi) of this section for each bag leak detection system.

(i) The owner or operator must install, calibrate, maintain, and operate each triboelectric bag leak detection system according to the "Fabric Filter Bag Leak Detection Guidance," (EPA-454/R-98-015, September 1997). This document is available from the U.S. Environmental Protection Agency (U.S. EPA); Office of Air Quality Planning and Standards; Emissions, Monitoring and Analysis Division; Emission Measurement Center, MD-D205-02, Research Triangle Park, NC 27711. This document is also available on the Technology Transfer Network under Emission Measurement Center Continuous Emission Monitoring. The owner or operator must install, calibrate, maintain, and operate other types of bag leak detection systems in a manner consistent with the manufacturer's written specifications and recommendations.

(ii) The bag leak detection system must be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less.

(iii) The bag leak detection system sensor must provide an output of relative PM loadings.

(iv) The bag leak detection system must be equipped with a device to continuously record the output signal from the sensor.

(v) The bag leak detection system must be equipped with an audible alarm system that will sound automatically when an increase in relative PM emissions over a preset level is detected. The alarm must be located where it is easily heard by plant operating personnel.

(vi) For positive pressure fabric filter systems, a bag leak detector must be installed in each baghouse compartment or cell.

(vii) For negative pressure or induced air fabric filters, the bag leak detector must be installed downstream of the fabric filter.

(viii) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.

(ix) The baseline output must be established by adjusting the range and the averaging period of the device and establishing the alarm set points and the alarm delay time according to section 5.0 of the "Fabric Filter Bag Leak Detection Guidance."

(x) Following initial adjustment of the system, the sensitivity or range, averaging period, alarm set points, or alarm delay time may not be adjusted except as detailed in the site-specific monitoring plan. In no case may the sensitivity be increased by more than 100 percent or decreased more than 50 percent over a 365-day period unless such adjustment follows a complete fabric filter inspection which demonstrates that the fabric filter is in good operating condition. Record each adjustment.

(xi) The owner or operator must record the results of each inspection, calibration, and validation check.

(13) The owner or operator of each affected source or process unit that uses an ESP, wet scrubber, RTO, or fabric filter may monitor alternative control device operating parameters subject to prior written approval by the Administrator.

(14) The owner or operator of each affected source or process unit that uses an air pollution control system other than an ESP, wet scrubber, RTO, or fabric filter must provide to the Administrator an alternative monitoring request that includes the site-specific monitoring plan described in paragraph (a) of this section, a description of the control device, test results verifying the performance of the control device, the appropriate operating parameters that will be monitored, and the frequency of measuring and recording to establish continuous compliance with the standards. The alternative

monitoring request is subject to the Administrator's approval. The owner or operator of the affected source or process unit must install, calibrate, operate, and maintain the monitor(s) in accordance with the alternative monitoring request approved by the Administrator. The owner or operator must include in the information submitted to the Administrator proposed performance specifications and quality assurance procedures for the monitors. The Administrator may request further information and will approve acceptable test methods and procedures. The owner or operator must monitor the parameters as approved by the Administrator using the methods and procedures in the alternative monitoring request.

(f) [Reserved]

(g) The owner or operator of each affected source or process unit complying with the gaseous organic HAP standard of §63.862(c)(1) through the use of an NDCE recovery furnace equipped with a dry ESP system is not required to conduct any continuous monitoring to demonstrate compliance with the gaseous organic HAP standard.

(h)-(i) [Reserved]

(j) *Determination of operating ranges.* (1) During the initial performance test required in §63.865, the owner or operator of any affected source or process unit must establish operating ranges for the monitoring parameters in paragraphs (e)(10) through (14) of this section, as appropriate; or

(2) The owner or operator may base operating ranges on values recorded during previous performance tests or conduct additional performance tests for the specific purpose of establishing operating ranges, provided that test data used to establish the operating ranges are or have been obtained using the test methods required in this subpart. The owner or operator of the affected source or process unit must certify that all control techniques and processes have not been modified subsequent to the testing upon which the data used to establish the operating parameter ranges were obtained.

(3) The owner or operator of an affected source or process unit may establish expanded or replacement operating ranges for the monitoring parameter values listed in paragraphs (e)(10) through (14) of this section and established in paragraph (j)(1) or (2) of this section during subsequent performance tests using the test methods in §63.865.

(4) The owner or operator of the affected source or process unit must continuously monitor each parameter and determine the arithmetic average value of each parameter during each performance test. Multiple performance tests may be conducted to establish a range of parameter values.

(5)-(6) [Reserved]

(k) *On-going compliance provisions.* (1) Following the compliance date, owners or operators of all affected sources or process units are required to implement corrective action if the monitoring exceedances in paragraphs (k)(1)(i) through (vi) of this section occur:

(i) For a new or existing kraft or soda recovery furnace or lime kiln equipped with an ESP, when the average of ten consecutive 6-minute averages result in a measurement greater than 20 percent opacity;

(ii) For a new or existing kraft or soda recovery furnace, kraft or soda smelt dissolving tank, kraft or soda lime kiln, or sulfite combustion unit equipped with a wet scrubber, when any 3-hour average parameter value is outside the range of values established in paragraph (j) of this section.

(iii) For a new or existing semichemical combustion unit equipped with an RTO, when any 1-hour average temperature falls below the temperature established in paragraph (j) of this section;

(iv) For the hog fuel dryer at Weyerhaeuser Paper Company's Cosmopolis, Washington facility (Emission Unit no. HD-14), when the bag leak detection system alarm sounds.

(v) For an affected source or process unit equipped with an ESP, wet scrubber, RTO, or fabric filter and monitoring alternative operating parameters established in paragraph (e)(13) of this section, when any 3-hour average value is outside the range of parameter values established in paragraph (j) of this section; and

(vi) For an affected source or process unit equipped with an alternative air pollution control system and monitoring operating parameters approved by the Administrator as established in paragraph (e)

(14) of this section, when any 3-hour average value is outside the range of parameter values established in paragraph (j) of this section.

(2) Following the compliance date, owners or operators of all affected sources or process units are in violation of the standards of §63.862 if the monitoring exceedances in paragraphs (k)(2)(i) through (vii) of this section occur:

(i) For an existing kraft or soda recovery furnace equipped with an ESP, when opacity is greater than 35 percent for 6 percent or more of the operating time within any quarterly period;

(ii) For a new kraft or soda recovery furnace or a new or existing lime kiln equipped with an ESP, when opacity is greater than 20 percent for 6 percent or more of the operating time within any quarterly period;

(iii) For a new or existing kraft or soda recovery furnace, kraft or soda smelt dissolving tank, kraft or soda lime kiln, or sulfite combustion unit equipped with a wet scrubber, when six or more 3-hour average parameter values within any 6-month reporting period are outside the range of values established in paragraph (j) of this section;

(iv) For a new or existing semichemical combustion unit equipped with an RTO, when any 3-hour average temperature falls below the temperature established in paragraph (j) of this section;

(v) For the hog fuel dryer at Weyerhaeuser Paper Company's Cosmopolis, Washington facility (Emission Unit no. HD-14), when corrective action is not initiated within 1 hour of a bag leak detection system alarm and the alarm is engaged for more than 5 percent of the total operating time in a 6-month block reporting period. In calculating the operating time fraction, if inspection of the fabric filter demonstrates that no corrective action is required, no alarm time is counted; if corrective action is required, each alarm is counted as a minimum of 1 hour; if corrective action is not initiated within 1 hour, the alarm time is counted as the actual amount of time taken to initiate corrective action.

(vi) For an affected source or process unit equipped with an ESP, wet scrubber, RTO, or fabric filter and monitoring alternative operating parameters established in paragraph (e)(13) of this section, when six or more 3-hour average values within any 6-month reporting period are outside the range of parameter values established in paragraph (j) of this section; and

(vii) For an affected source or process unit equipped with an alternative air pollution control system and monitoring operating parameters approved by the Administrator as established in paragraph (e)(14) of this section, when six or more 3-hour average values within any 6-month reporting period are outside the range of parameter values established in paragraph (j) of this section.

(3) For purposes of determining the number of nonopacity monitoring exceedances, no more than one exceedance will be attributed in any given 24-hour period.

[68 FR 7713, Feb. 18, 2003, as amended at 68 FR 42605, July 18, 2003; 68 FR 67955, Dec. 5, 2003; 71 FR 20458, Apr. 20, 2006]

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### **§63.865 Performance test requirements and test methods.**

The owner or operator of each affected source or process unit subject to the requirements of this subpart is required to conduct an initial performance test using the test methods and procedures listed in §63.7 and paragraph (b) of this section, except as provided in paragraph (c)(1) of this section.

(a) The owner or operator of a process unit seeking to comply with a PM emission limit under §63.862(a)(1)(ii)(A) must use the procedures in paragraphs (a)(1) and (2) of this section:

(1) Determine the overall PM emission limit for the chemical recovery system at the mill using Equation 1 of this section as follows:

$$EL_{PM} = \frac{[(C_{ref,RF})(Q_{RFlot}) + (C_{ref,LK})(Q_{LFlot})](F1)}{(BLS_{tot})} + ER1_{ref,SDT} \quad (\text{Eq. 1})$$

Where:

$EL_{PM}$  = overall PM emission limit for all existing process units in the chemical recovery system at the kraft or soda pulp mill, kg/Mg (lb/ton) of black liquor solids fired.

$C_{ref, RF}$  = reference concentration of 0.10 g/dscm (0.044 gr/dscf) corrected to 8 percent oxygen for existing kraft or soda recovery furnaces.

$Q_{RFtot}$  = sum of the average volumetric gas flow rates measured during the performance test and corrected to 8 percent oxygen for all existing recovery furnaces in the chemical recovery system at the kraft or soda pulp mill, dry standard cubic meters per minute (dscm/min) (dry standard cubic feet per minute (dscf/min)).

$C_{ref, LK}$  = reference concentration of 0.15 g/dscm (0.064 gr/dscf) corrected to 10 percent oxygen for existing kraft or soda lime kilns.

$Q_{LKtot}$  = sum of the average volumetric gas flow rates measured during the performance test and corrected to 10 percent oxygen for all existing lime kilns in the chemical recovery system at the kraft or soda pulp mill, dscm/min (dscf/min).

$F1$  = conversion factor, 1.44 minutes·kilogram/day·gram (min·kg/d·g) (0.206 minutes·pound/day·grain (min·b/d·gr)).

$BLS_{tot}$  = sum of the average black liquor solids firing rates of all existing recovery furnaces in the chemical recovery system at the kraft or soda pulp mill measured during the performance test, megagrams per day (Mg/d) (tons per day (ton/d)) of black liquor solids fired.

$ER1_{ref, SDT}$  = reference emission rate of 0.10 kg/Mg (0.20 lb/ton) of black liquor solids fired for existing kraft or soda smelt dissolving tanks.

(2) Establish an emission limit for each kraft or soda recovery furnace, smelt dissolving tank, and lime kiln; and, using these emissions limits, determine the overall PM emission rate for the chemical recovery system at the mill using the procedures in paragraphs (a)(2)(i) through (v) of this section, such that the overall PM emission rate calculated in paragraph (a)(2)(v) of this section is less than or equal to the overall PM emission limit determined in paragraph (a)(1) of this section, as appropriate.

(i) The PM emission rate from each affected recovery furnace must be determined using Equation 2 of this section as follows:

$$ER_{RF} = (F1)(C_{EL, RF})(Q_{RF})/(BLS) \quad (Eq. 2)$$

Where:

$ER_{RF}$ =emission rate from each recovery furnace, kg/Mg (lb/ton) of black liquor solids.

$F1$ =conversion factor, 1.44 min·kg/d·g (0.206 min·/d·gr).

$C_{EL, RF}$ =PM emission limit proposed by owner or operator for the recovery furnace, g/dscm (gr/dscf) corrected to 8 percent oxygen.

$Q_{RF}$ =average volumetric gas flow rate from the recovery furnace measured during the performance test and corrected to 8 percent oxygen, dscm/min (dscf/min).

$BLS$ =average black liquor solids firing rate of the recovery furnace measured during the performance test, Mg/d (ton/d) of black liquor solids.

(ii) The PM emission rate from each affected smelt dissolving tank must be determined using Equation 3 of this section as follows:

$$ER_{SDT} = (F1)(C_{EL, SDT})(Q_{SDT})/(BLS) \quad (Eq. 3)$$

Where:

$ER_{SDT}$ =emission rate from each SDT, kg/Mg (lb/ton) of black liquor solids fired.

$F1$ =conversion factor, 1.44 min·kg/d·g (0.206 min·lb/d·gr).

$C_{EL, SDT}$ =PM emission limit proposed by owner or operator for the smelt dissolving tank, g/dscm (gr/dscf).

$Q_{SDT}$ =average volumetric gas flow rate from the smelt dissolving tank measured during the performance test, dscm/min (dscf/min).



BLS=average black liquor solids firing rate of the associated recovery furnace measured during the performance test, Mg/d (ton/d) of black liquor solids fired. If more than one SDT is used to dissolve the smelt from a given recovery furnace, then the black liquor solids firing rate of the furnace must be proportioned according to the size of the SDT.

(iii) The PM emission rate from each affected lime kiln must be determined using Equation 4 of this section as follows:

$$ER_{LK} = (F1)(C_{EL,LK})(Q_{LK})(CaO_{kt}/BLS_{tot})/(CaO_{LK}) \quad (Eq. 4)$$

Where:

ER<sub>LK</sub>=emission rate from each lime kiln, kg/Mg (lb/ton) of black liquor solids.

F1=conversion factor, 1.44 min·kg/d·g (0.206 min·lb/d·gr).

C<sub>EL,LK</sub>=PM emission limit proposed by owner or operator for the lime kiln, g/dscm (gr/dscf) corrected to 10 percent oxygen.

Q<sub>LK</sub>=average volumetric gas flow rate from the lime kiln measured during the performance test and corrected to 10 percent oxygen, dscm/min (dscf/min).

CaO<sub>LK</sub>=lime production rate of the lime kiln, measured as CaO during the performance test, Mg/d (ton/d) of CaO.

CaO<sub>tot</sub>=sum of the average lime production rates for all existing lime kilns in the chemical recovery system at the mill measured as CaO during the performance test, Mg/d (ton/d).

BLS<sub>tot</sub>=sum of the average black liquor solids firing rates of all recovery furnaces in the chemical recovery system at the mill measured during the performance test, Mg/d (ton/d) of black liquor solids.

(iv) If more than one similar process unit is operated in the chemical recovery system at the kraft or soda pulp mill, Equation 5 of this section must be used to calculate the overall PM emission rate from all similar process units in the chemical recovery system at the mill and must be used in determining the overall PM emission rate for the chemical recovery system at the mill:

$$ER_{PUtot} = ER_{PU1} (PR_{PU1}/PR_{tot}) + \dots + (ER_{PUi}) (PR_{PUi}/PR_{tot}) \quad (Eq. 5)$$

Where:

ER<sub>PUtot</sub>=overall PM emission rate from all similar process units, kg/Mg (lb/ton) of black liquor solids fired.

ER<sub>PU1</sub>=PM emission rate from process unit No. 1, kg/Mg (lb/ton) of black liquor solids fired, calculated using Equation 2, 3, or 4 in paragraphs (a)(2)(i) through (iii) of this section.

PR<sub>PU1</sub>=black liquor solids firing rate in Mg/d (ton/d) for process unit No. 1, if process unit is a recovery furnace or SDT. The CaO production rate in Mg/d (ton/d) for process unit No. 1, if process unit is a lime kiln.

PR<sub>tot</sub>=total black liquor solids firing rate in Mg/d (ton/d) for all recovery furnaces in the chemical recovery system at the kraft or soda pulp mill if the similar process units are recovery furnaces or SDT, or the total CaO production rate in Mg/d (ton/d) for all lime kilns in the chemical recovery system at the mill if the similar process units are lime kilns.

ER<sub>PUi</sub>=PM emission rate from process unit No. i, kg/Mg (lb/ton) of black liquor solids fired.

PR<sub>PUi</sub>=black liquor solids firing rate in Mg/d (ton/d) for process unit No. i, if process unit is a recovery furnace or SDT. The CaO production rate in Mg/d (ton/d) for process unit No. i, if process unit is a lime kiln.

i=number of similar process units located in the chemical recovery system at the kraft or soda pulp mill.

(v) The overall PM emission rate for the chemical recovery system at the mill must be determined using Equation 6 of this section as follows:

$$ER_{tot} = ER_{Ftot} + ER_{SDTtot} + ER_{LKtot} \quad (Eq. 6)$$

Where:

ER<sub>tot</sub>=overall PM emission rate for the chemical recovery system at the mill, kg/Mg (lb/ton) of black liquor solids fired.

$ER_{RF_{tot}}$ =PM emission rate from all kraft or soda recovery furnaces, calculated using Equation 2 or 5 in paragraphs (a)(2)(i) and (iv) of this section, where applicable, kg/Mg (lb/ton) of black liquor solids fired.

$ER_{SD_{Tot}}$ =PM emission rate from all smelt dissolving tanks, calculated using Equation 3 or 5 in paragraphs (a)(2)(ii) and (iv) of this section, where applicable, kg/Mg (lb/ton) of black liquor solids fired.

$ER_{LK_{tot}}$ =PM emission rate from all lime kilns, calculated using Equation 4 or 5 in paragraphs (a)(2)(iii) and (iv) of this section, where applicable, kg/Mg (lb/ton) of black liquor solids fired.

(vi) After the Administrator has approved the PM emissions limits for each kraft or soda recovery furnace, smelt dissolving tank, and lime kiln, the owner or operator complying with an overall PM emission limit established in §63.862(a)(1)(ii) must demonstrate compliance with the HAP metals standard by demonstrating compliance with the approved PM emissions limits for each affected kraft or soda recovery furnace, smelt dissolving tank, and lime kiln, using the test methods and procedures in paragraph (b) of this section.

(b) The owner or operator seeking to determine compliance with §63.862(a), (b), or (d) must use the procedures in paragraphs (b)(1) through (6) of this section.

(1) For purposes of determining the concentration or mass of PM emitted from each kraft or soda recovery furnace, sulfite combustion unit, smelt dissolving tank, lime kiln, or the hog fuel dryer at Weyerhaeuser Paper Company's Cosmopolis, Washington facility (Emission Unit no. HD-14), Method 5 or 29 in appendix A of 40 CFR part 60 must be used, except that Method 17 in appendix A of 40 CFR part 60 may be used in lieu of Method 5 or Method 29 if a constant value of 0.009 g/dscm (0.004 gr/dscf) is added to the results of Method 17, and the stack temperature is no greater than 205 °C (400 °F). For Methods 5, 29, and 17, the sampling time and sample volume for each run must be at least 60 minutes and 0.90 dscm (31.8 dscf), and water must be used as the cleanup solvent instead of acetone in the sample recovery procedure.

(2) For sources complying with §63.862(a) or (b), the PM concentration must be corrected to the appropriate oxygen concentration using Equation 7 of this section as follows:

$$C_{corr} = C_{meas} \times \frac{(21 - X)}{(21 - Y)} \quad (\text{Eq. 7})$$

Where:

$C_{corr}$  = The measured concentration corrected for oxygen, g/dscm (gr/dscf);

$C_{meas}$  = The measured concentration uncorrected for oxygen, g/dscm (gr/dscf);

X = The corrected volumetric oxygen concentration (8 percent for kraft or soda recovery furnaces and sulfite combustion units and 10 percent for kraft or soda lime kilns); and

Y = The measured average volumetric oxygen concentration.

(3) Method 3A or 3B in appendix A of 40 CFR part 60 must be used to determine the oxygen concentration. The voluntary consensus standard ANSI/ASME PTC 19.10-1981—Part 10 (incorporated by reference—see §63.14) may be used as an alternative to using Method 3B. The gas sample must be taken at the same time and at the same traverse points as the particulate sample.

(4) For purposes of complying with of §63.862(a)(1)(ii)(A), the volumetric gas flow rate must be corrected to the appropriate oxygen concentration using Equation 8 of this section as follows:

$$Q_{corr} = Q_{meas} \times (21 - Y) / (21 - X) \quad (\text{Eq. 8})$$

Where:

$Q_{corr}$ =the measured volumetric gas flow rate corrected for oxygen, dscm/min (dscf/min).

$Q_{meas}$ =the measured volumetric gas flow rate uncorrected for oxygen, dscm/min (dscf/min).

Y=the measured average volumetric oxygen concentration.

X=the corrected volumetric oxygen concentration (8 percent for kraft or soda recovery furnaces and 10 percent for kraft or soda lime kilns).

(5)(i) For purposes of selecting sampling port location and number of traverse points, Method 1 or 1A in appendix A of 40 CFR part 60 must be used;

(ii) For purposes of determining stack gas velocity and volumetric flow rate, Method 2, 2A, 2C, 2D, 2F, or 2G in appendix A of 40 CFR part 60 must be used;

(iii) For purposes of conducting gas analysis, Method 3, 3A, or 3B in appendix A of 40 CFR part 60 must be used. The voluntary consensus standard ANSI/ASME PTC 19.10-1981—Part 10 (incorporated by reference—see §63.14) may be used as an alternative to using Method 3B; and

(iv) For purposes of determining moisture content of stack gas, Method 4 in appendix A of 40 CFR part 60 must be used.

(6) Process data measured during the performance test must be used to determine the black liquor solids firing rate on a dry basis and the CaO production rate.

(c) The owner or operator of each affected source or process unit complying with the gaseous organic HAP standard in §63.862(c)(1) must demonstrate compliance according to the provisions in paragraphs (c)(1) and (2) of this section.

(1) The owner or operator complying through the use of an NDCE recovery furnace equipped with a dry ESP system is not required to conduct any performance testing to demonstrate compliance with the gaseous organic HAP standard.

(2) The owner or operator complying without using an NDCE recovery furnace equipped with a dry ESP system must use Method 308 in appendix A of this part, as well as the methods listed in paragraphs (b)(5)(i) through (iv) of this section. The sampling time and sample volume for each Method 308 run must be at least 60 minutes and 0.014 dscm (0.50 dscf), respectively.

(i) The emission rate from any new NDCE recovery furnace must be determined using Equation 9 of this section as follows:

$$ER_{NDCE} = \frac{(MR_{meas})}{BLS} \quad (\text{Eq. 9})$$

Where:

$ER_{NDCE}$  = Methanol emission rate from the NDCE recovery furnace, kg/Mg (lb/ton) of black liquor solids fired;

$MR_{meas}$  = Measured methanol mass emission rate from the NDCE recovery furnace, kg/hr (lb/hr); and

$BLS$  = Average black liquor solids firing rate of the NDCE recovery furnace, megagrams per hour (Mg/hr) (tons per hour (ton/hr)) determined using process data measured during the performance test.

(ii) The emission rate from any new DCE recovery furnace system must be determined using Equation 10 of this section as follows:

$$ER_{DCE} = \left[ \frac{(MR_{meas,RF})}{BLS_{RF}} \right] + \left[ \frac{MR_{meas,BLO}}{BLS_{BLO}} \right] \quad (\text{Eq. 10})$$

Where:

$ER_{DCE}$  = Methanol emission rate from each DCE recovery furnace system, kg/Mg (lb/ton) of black liquor solids fired;

$MR_{meas,RF}$  = Average measured methanol mass emission rate from each DCE recovery furnace, kg/hr (lb/hr);

$MR_{meas,BLO}$  = Average measured methanol mass emission rate from the black liquor oxidation system, kg/hr (lb/hr);

$BLS_{RF}$  = Average black liquor solids firing rate for each DCE recovery furnace, Mg/hr (ton/hr) determined using process data measured during the performance test; and

$BLS_{BLO}$  = The average mass rate of black liquor solids treated in the black liquor oxidation system, Mg/hr (ton/hr) determined using process data measured during the performance test.

(d) The owner or operator seeking to determine compliance with the gaseous organic HAP standards in §63.862(c)(2) for semichemical combustion units must use Method 25A in appendix A of 40 CFR part 60, as well as the methods listed in paragraphs (b)(5)(i) through (iv) of this section. The sampling time for each Method 25A run must be at least 60 minutes. The calibration gas for each Method 25A run must be propane.

(1) The emission rate from any new or existing semichemical combustion unit must be determined using Equation 11 of this section as follows:

$$ER_{SCCU} = \frac{(THC_{meas})}{BLS} \quad (Eq. 11)$$

Where:

$ER_{SCCU}$  = THC emission rate reported as carbon from each semichemical combustion unit, kg/Mg (lb/ton) of black liquor solids fired;

$THC_{meas}$  = Measured THC mass emission rate reported as carbon, kg/hr (lb/hr); and

$BLS$  = Average black liquor solids firing rate, Mg/hr (ton/hr); determined using process data measured during the performance test.

(2) If the owner or operator of the semichemical combustion unit has selected the percentage reduction standards for THC, under §63.862(c)(2)(ii), the percentage reduction in THC emissions is computed using Equation 12 of this section as follows, provided that  $E_i$  and  $E_o$  are measured simultaneously:

$$(\%R_{THC}) = \left( \frac{E_i - E_o}{E_i} \right) \times 100 \quad (Eq. 12)$$

Where:

$\%R_{THC}$  = percentage reduction of total hydrocarbons emissions achieved.

$E_i$  = measured THC mass emission rate at the THC control device inlet, kg/hr (lb/hr).

$E_o$  = measured THC mass emission rate at the THC control device outlet, kg/hr (lb/hr).

[66 FR 3193, Jan. 12, 2001, as amended at 66 FR 37593, July 19, 2001; 68 FR 7716, Feb. 18, 2003; 68 FR 67955, Dec. 5, 2003]

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### §63.866 Recordkeeping requirements.

(a) *Startup, shutdown, and malfunction plan.* The owner or operator must develop a written plan as described in §63.6(e)(3) that contains specific procedures for operating the source and maintaining the source during periods of startup, shutdown, and malfunction, and a program of corrective action for malfunctioning process and control systems used to comply with the standards. In addition to the information required in §63.6(e), the plan must include the requirements in paragraphs (a)(1) and (2) of this section.

(1) Procedures for responding to any process parameter level that is inconsistent with the level(s) established under §63.864(j), including the procedures in paragraphs (a)(1)(i) and (ii) of this section:

(i) Procedures to determine and record the cause of an operating parameter exceedance and the time the exceedance began and ended; and

(ii) Corrective actions to be taken in the event of an operating parameter exceedance, including procedures for recording the actions taken to correct the exceedance.

(2) The startup, shutdown, and malfunction plan also must include the schedules listed in paragraphs (a)(2)(i) and (ii) of this section:

(i) A maintenance schedule for each control technique that is consistent with, but not limited to, the manufacturer's instructions and recommendations for routine and long-term maintenance; and

(ii) An inspection schedule for each continuous monitoring system required under §63.864 to ensure, at least once in each 24-hour period, that each continuous monitoring system is properly functioning.

(b) The owner or operator of an affected source or process unit must maintain records of any occurrence when corrective action is required under §63.864(k)(1), and when a violation is noted under §63.864(k)(2).

(c) In addition to the general records required by §63.10(b)(2), the owner or operator must maintain records of the information in paragraphs (c)(1) through (7) of this section:

(1) Records of black liquor solids firing rates in units of Mg/d or ton/d for all recovery furnaces and semichemical combustion units;

(2) Records of CaO production rates in units of Mg/d or ton/d for all lime kilns;

(3) Records of parameter monitoring data required under §63.864, including any period when the operating parameter levels were inconsistent with the levels established during the initial performance test, with a brief explanation of the cause of the deviation, the time the deviation occurred, the time corrective action was initiated and completed, and the corrective action taken;

(4) Records and documentation of supporting calculations for compliance determinations made under §§63.865(a) through (d);

(5) Records of monitoring parameter ranges established for each affected source or process unit;

(6) Records certifying that an NDCE recovery furnace equipped with a dry ESP system is used to comply with the gaseous organic HAP standard in §63.862(c)(1).

(7) For the bag leak detection system on the hog fuel dryer fabric filter at Weyerhaeuser Paper Company's Cosmopolis, Washington facility (Emission Unit no. HD-14), records of each alarm, the time of the alarm, the time corrective action was initiated and completed, and a brief description of the cause of the alarm and the corrective action taken.

(d) For operation under §63.863(c)(2), Georgia-Pacific Corporation must keep a record of the hours of operation of the two existing semichemical combustion units at their Big Island, VA facility.

[66 FR 3193, Jan. 12, 2001, as amended at 66 FR 16408, Mar. 26, 2001; 68 FR 7718, Feb. 18, 2003; 69 FR 25323, May 6, 2004; 71 FR 20458, Apr. 20, 2006]

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### **§63.867 Reporting requirements.**

(a) *Notifications.* (1) The owner or operator of any affected source or process unit must submit the applicable notifications from subpart A of this part, as specified in Table 1 of this subpart.

(2) Notifications specific to Georgia-Pacific Corporation's affected sources in Big Island, Virginia.

(i) For a compliance extension under §63.863(c)(1), submit a notice that provides the date of Georgia-Pacific's determination that the black liquor gasification system is not successful and the reasons why the technology is not successful. The notice must be submitted within 15 days of Georgia-Pacific's determination, but not later than March 16, 2005.

(ii) For operation under §63.863(c)(2), submit a notice providing: a statement that Georgia-Pacific Corporation intends to run the Kraft black liquor trials, the anticipated period in which the trials will take place, and a statement explaining why the trials could not be conducted prior to March 1, 2005. The notice must be submitted at least 30 days prior to the start of the Kraft liquor trials.

(3) In addition to the requirements in subpart A of this part, the owner or operator of the hog fuel dryer at Weyerhaeuser Paper Company's Cosmopolis, Washington, facility (Emission Unit no. HD-14) must include analysis and supporting documentation demonstrating conformance with EPA guidance and specifications for bag leak detection systems in §63.864(e)(12) in the Notification of Compliance Status.

(b) *Additional reporting requirements for HAP metals standards.* (1) Any owner or operator of a group of process units in a chemical recovery system at a mill complying with the PM emissions limits

in §63.862(a)(1)(ii) must submit the PM emissions limits determined in §63.865(a) for each affected kraft or soda recovery furnace, smelt dissolving tank, and lime kiln to the Administrator for approval. The emissions limits must be submitted as part of the notification of compliance status required under subpart A of this part.

(2) Any owner or operator of a group of process units in a chemical recovery system at a mill complying with the PM emissions limits in §63.862(a)(1)(ii) must submit the calculations and supporting documentation used in §63.865(a)(1) and (2) to the Administrator as part of the notification of compliance status required under subpart A of this part.

(3) After the Administrator has approved the emissions limits for any process unit, the owner or operator of a process unit must notify the Administrator before any of the actions in paragraphs (b)(3)(i) through (iv) of this section are taken:

(i) The air pollution control system for any process unit is modified or replaced;

(ii) Any kraft or soda recovery furnace, smelt dissolving tank, or lime kiln in a chemical recovery system at a kraft or soda pulp mill complying with the PM emissions limits in §63.862(a)(1)(ii) is shut down for more than 60 consecutive days;

(iii) A continuous monitoring parameter or the value or range of values of a continuous monitoring parameter for any process unit is changed; or

(iv) The black liquor solids firing rate for any kraft or soda recovery furnace during any 24-hour averaging period is increased by more than 10 percent above the level measured during the most recent performance test.

(4) An owner or operator of a group of process units in a chemical recovery system at a mill complying with the PM emissions limits in §63.862(a)(1)(ii) and seeking to perform the actions in paragraph (b)(3)(i) or (ii) of this section must recalculate the overall PM emissions limit for the group of process units and resubmit the documentation required in paragraph (b)(2) of this section to the Administrator. All modified PM emissions limits are subject to approval by the Administrator.

(c) *Excess emissions report.* The owner or operator must report quarterly if measured parameters meet any of the conditions specified in paragraph (k)(1) or (2) of §63.864. This report must contain the information specified in §63.10(c) of this part as well as the number and duration of occurrences when the source met or exceeded the conditions in §63.864(k)(1), and the number and duration of occurrences when the source met or exceeded the conditions in §63.864(k)(2). Reporting excess emissions below the violation thresholds of §63.864(k) does not constitute a violation of the applicable standard.

(1) When no exceedances of parameters have occurred, the owner or operator must submit a semiannual report stating that no excess emissions occurred during the reporting period.

(2) The owner or operator of an affected source or process unit subject to the requirements of this subpart and subpart S of this part may combine excess emissions and/or summary reports for the mill.

[66 FR 3193, Jan. 12, 2001 as amended at 66 FR 16408, Mar. 26, 2001; 68 FR 7718, Feb. 18, 2003; 68 FR 42605, July 18, 2003; 68 FR 46108, Aug. 5, 2003; 69 FR 25323, May 6, 2004]

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### **§63.868 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 must be retained by the Administrator and not transferred to a State.

(b) The authorities which will not be delegated to States are listed in paragraphs (b)(1) through (4) of this section:

(1) Approval of alternatives to standards in §63.862 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.

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

<b>General provisions reference</b>	<b>Summary of requirements</b>	<b>Applies to subpart MM</b>	<b>Explanation</b>
63.1(a)(1)	General applicability of the General Provisions	Yes	Additional terms defined in §63.861; when overlap between subparts A and MM of this part, subpart MM takes precedence.
63.1(a)(2)-(14)	General applicability of the General Provisions	Yes	
63.1(b)(1)	Initial applicability determination.	No.	Subpart MM specifies the applicability in §63.860.
63.1(b)(2)	Title V operating permit—see 40 CFR part 70	Yes	All major affected sources are required to obtain a title V permit.
63.1(b)(3)	Record of the applicability determination	No	All affected sources are subject to subpart MM according to the applicability definition of subpart MM.
63.1(c)(1)	Applicability of subpart A of this part after a relevant standard has been set	Yes	Subpart MM clarifies the applicability of each paragraph of subpart A of this part to sources subject to subpart MM.
63.1(c)(2)	Title V permit requirement	Yes	All major affected sources are required to obtain a title V permit. There are no area sources in the pulp and paper mill source category.
63.1(c)(3)	[Reserved]	NA.	
63.1(c)(4)	Requirements for existing source that obtains an extension of compliance	Yes	
63.1(c)(5)	Notification requirements for an area source that increases HAP emissions to major source levels	Yes	
63.1(d)	[Reserved]	NA	
63.1(e)	Applicability of permit program before a relevant standard has been set	Yes	
63.2	Definitions	Yes	Additional terms defined in §63.861; when overlap between subparts A and MM of this part occurs, subpart MM takes precedence.
63.3	Units and abbreviations	Yes	
63.4	Prohibited activities and circumvention	Yes	
63.5(a)	Construction and reconstruction—applicability	Yes	
63.5(b)(1)	Upon construction, relevant standards for new sources	Yes	
63.5(b)(2)	[Reserved]	NA	
63.5(b)(3)	New construction/reconstruction	Yes	

63.5(b)(4)	Construction/reconstruction notification	Yes	
63.5(b)(5)	Construction/reconstruction compliance	Yes	
63.5(b)(6)	Equipment addition or process change	Yes	
63.5(c)	[Reserved]	NA	
63.5(d)	Application for approval of construction/reconstruction	Yes	
63.5(e)	Construction/reconstruction approval	Yes	
63.5(f)	Construction/reconstruction approval based on prior State preconstruction review	Yes	
63.6(a)(1)	Compliance with standards and maintenance requirements—applicability	Yes	
63.6(a)(2)	Requirements for area source that increases emissions to become major	Yes	
63.6(b)	Compliance dates for new and reconstructed sources	Yes	
63.6(c)	Compliance dates for existing sources	Yes, except for sources granted extensions under 63.863(c)	Subpart MM specifically stipulates the compliance schedule for existing sources.
63.6(d)	[Reserved]	NA	
63.6(e)	Operation and maintenance requirements	Yes	
63.6(f)	Compliance with nonopacity emissions standards	Yes	
63.6(g)	Compliance with alternative nonopacity emissions standards	Yes	
63.6(h)	Compliance with opacity and visible emissions (VE) standards	Yes	Subpart MM does not contain any opacity or VE standards; however, §63.864 specifies opacity monitoring requirements.
63.6(i)	Extension of compliance with emission standards	Yes, except for sources granted extensions under 63.863(c)	
63.6(j)	Exemption from compliance with emissions standards	Yes	
63.7(a)(1)	Performance testing requirements—applicability	Yes	§63.865(c)(1) specifies the only exemption from performance testing allowed under subpart MM.
63.7(a)(2)	Performance test dates	Yes	
63.7(a)(3)	Performance test requests by Administrator under CAA section 114	Yes	
63.7(b)(1)	Notification of performance test	Yes	
63.7(b)(2)	Notification of delay in conducting a scheduled performance test	Yes	
63.7(c)	Quality assurance program	Yes	
63.7(d)	Performance testing facilities	Yes	
63.7(e)	Conduct of performance tests	Yes	
63.7(f)	Use of an alternative test method	Yes	
63.7(g)	Data analysis, recordkeeping, and reporting	Yes	



63.7(h)	Waiver of performance tests	Yes	§63.865(c)(1) specifies the only exemption from performance testing allowed under subpart MM.
63.8(a)	Monitoring requirements—applicability	Yes	See §63.864.
63.8(b)	Conduct of monitoring	Yes	See §63.864.
63.8(c)	Operation and maintenance of CMS	Yes	See §63.864.
63.8(d)	Quality control program	Yes	See §63.864.
63.8(e)(1)	Performance evaluation of CMS	Yes	
63.8(e)(2)	Notification of performance evaluation	Yes	
63.8(e)(3)	Submission of site-specific performance evaluation test plan	Yes	
63.8(e)(4)	Conduct of performance evaluation and performance evaluation dates	Yes	
63.8(e)(5)	Reporting performance evaluation results	Yes	
63.8(f)	Use of an alternative monitoring method	Yes	
63.8(g)	Reduction of monitoring data	Yes	
63.9(a)	Notification requirements—applicability and general information	Yes	
63.9(b)	Initial notifications	Yes	
63.9(c)	Request for extension of compliance	Yes	
63.9(d)	Notification that source subject to special compliance requirements	Yes	
63.9(e)	Notification of performance test	Yes	
63.9(f)	Notification of opacity and VE observations	Yes	Subpart MM does not contain any opacity or VE standards; however, §63.864 specifies opacity monitoring requirements.
63.9(g)(1)	Additional notification requirements for sources with CMS	Yes	
63.9(g)(2)	Notification of compliance with opacity emissions standard	Yes	Subpart MM does not contain any opacity or VE emissions standards; however, §63.864 specifies opacity monitoring requirements.
63.9(g)(3)	Notification that criterion to continue use of alternative to relative accuracy testing has been exceeded	Yes	
63.9(h)	Notification of compliance status	Yes	
63.9(i)	Adjustment to time periods or postmark deadlines for submittal and review of required communications	Yes	
63.9(j)	Change in information already provided	Yes	
63.10(a)	Recordkeeping requirements—applicability and general information	Yes	See §63.866.
63.10(b)(1)	Records retention	Yes	
63.10(b)(2)	Information and documentation to support notifications and demonstrate compliance	Yes	
63.10(b)(3)	Records retention for sources not subject to relevant standard	Yes	Applicability requirements are given in §63.860.

63.10(c)	Additional recordkeeping requirements for sources with CMS.	Yes	
63.10(d)(1)	General reporting requirements	Yes	
63.10(d)(2)	Reporting results of performance tests	Yes	
63.10(d)(3)	Reporting results of opacity or VE observations	Yes	Subpart MM does not include any opacity or VE standards; however, §63.864 specifies opacity monitoring requirements.
63.10(d)(4)	Progress reports	Yes	
63.10(d)(5)	Periodic and immediate startup, shutdown, and malfunction reports	Yes	
63.10(e)	Additional reporting requirements for sources with CMS	Yes	
63.10(f)	Waiver of recordkeeping and reporting requirements	Yes	
63.11	Control device requirements for flares	No	The use of flares to meet the standards in subpart MM is not anticipated.
63.12	State authority and delegations	Yes	
63.13	Addresses of State air pollution control agencies and EPA Regional Offices	Yes	
63.14	Incorporations by reference	Yes	
63.15	Availability of information and confidentiality	Yes	

[66 FR 3193, Jan. 12, 2001, as amended at 66 FR 16408, Mar. 26, 2001]

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Appendix F

40 CFR 60, Subpart D, *Standards of Performance for Fossil-Fuel-Fired Steam Generators for Which Construction is Commenced After August 17, 1971*



# ELECTRONIC CODE OF FEDERAL REGULATIONS

e-CFR Data is current as of October 14, 2013

Title 40: Protection of Environment  
PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

## Subpart D—Standards of Performance for Fossil-Fuel-Fired Steam Generators

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- §60.43 Standard for sulfur dioxide (SO<sub>2</sub>).
- §60.44 Standard for nitrogen oxides (NO<sub>x</sub>).
- §60.45 Emissions and fuel monitoring.
- §60.46 Test methods and procedures.

SOURCE: 72 FR 32717, June 13, 2007, unless otherwise noted.

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### §60.40 Applicability and designation of affected facility.

(a) The affected facilities to which the provisions of this subpart apply are:

(1) Each fossil-fuel-fired steam generating unit of more than 73 megawatts (MW) heat input rate (250 million British thermal units per hour (MMBtu/hr)).

(2) Each fossil-fuel and wood-residue-fired steam generating unit capable of firing fossil fuel at a heat input rate of more than 73 MW (250 MMBtu/hr).

(b) Any change to an existing fossil-fuel-fired steam generating unit to accommodate the use of combustible materials, other than fossil fuels as defined in this subpart, shall not bring that unit under the applicability of this subpart.

(c) Except as provided in paragraph (d) of this section, any facility under paragraph (a) of this section that commenced construction or modification after August 17, 1971, is subject to the requirements of this subpart.

(d) The requirements of §§60.44 (a)(4), (a)(5), (b) and (d), and 60.45(f)(4)(vi) are applicable to lignite-fired steam generating units that commenced construction or modification after December 22, 1976.

(e) Any facility subject to either subpart Da or KKKK of this part is not subject to this subpart.

[72 FR 32717, June 13, 2007, as amended at 77 FR 9447, Feb. 16, 2012]

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### §60.41 Definitions.

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

*Boiler 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 steam-generating unit. It is not necessary for fuel to be combusted the entire 24-hour period.

*Coal* means all solid fuels classified as anthracite, bituminous, subbituminous, or lignite by ASTM D388 (incorporated by reference, see §60.17).

*Coal refuse* means waste-products of coal mining, cleaning, and coal preparation operations (e.g. culm, gob, etc.) containing coal, matrix material, clay, and other organic and inorganic material.

*Fossil fuel* means natural gas, petroleum, coal, and any form of solid, liquid, or gaseous fuel derived from such materials for the purpose of creating useful heat.

*Fossil fuel and wood residue-fired steam generating unit* means a furnace or boiler used in the process of burning fossil fuel and wood residue for the purpose of producing steam by heat transfer.

*Fossil-fuel-fired steam generating unit* means a furnace or boiler used in the process of burning fossil fuel for the purpose of producing steam by heat transfer.

*Natural gas* means a fluid mixture of hydrocarbons (e.g., methane, ethane, or propane), composed of at least 70 percent methane by volume or that has 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), that maintains a gaseous state under ISO conditions. In addition, *natural gas* contains 20.0 grains or less of total sulfur per 100 standard cubic feet. Finally, natural gas does not include the following gaseous fuels: landfill gas, digester gas, refinery gas, sour gas, blast furnace gas, coal-derived gas, producer gas, coke oven gas, or any gaseous fuel produced in a process which might result in highly variable sulfur content or heating value.

*Wood residue* means bark, sawdust, slabs, chips, shavings, mill trim, and other wood products derived from wood processing and forest management operations.

[72 FR 32717, June 13, 2007, as amended at 77 FR 9447, Feb. 16, 2012]

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#### **§60.42 Standard for particulate matter (PM).**

(a) Except as provided under paragraphs (b), (c), (d), and (e) of this section, on and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases that:

(1) Contain PM in excess of 43 nanograms per joule (ng/J) heat input (0.10 lb/MMBtu) derived from fossil fuel or fossil fuel and wood residue.

(2) Exhibit greater than 20 percent opacity except for one six-minute period per hour of not more than 27 percent opacity.

(b)(1) On or after December 28, 1979, no owner or operator shall cause to be discharged into the atmosphere from the Southwestern Public Service Company's Harrington Station #1, in Amarillo, TX, any gases which exhibit greater than 35 percent opacity, except that a maximum of 42 percent opacity shall be permitted for not more than 6 minutes in any hour.

(2) Interstate Power Company shall not cause to be discharged into the atmosphere from its Lansing Station Unit No. 4 in Lansing, IA, any gases which exhibit greater than 32 percent opacity, except that a maximum of 39 percent opacity shall be permitted for not more than six minutes in any hour.

(c) As an alternate to meeting the requirements of paragraph (a) of this section, an owner or operator that elects to install, calibrate, maintain, and operate a continuous emissions monitoring systems (CEMS) for measuring PM emissions can petition the Administrator (in writing) to comply with §60.42Da(a) of subpart Da of this part. If the Administrator grants the petition, the source will from then on (unless the unit is modified or reconstructed in the future) have to comply with the requirements in §60.42Da(a) of subpart Da of this part.

(d) An owner or operator of an affected facility that combusts only natural gas is exempt from the PM and opacity standards specified in paragraph (a) of this section.

(e) An owner or operator of an affected facility that combusts only gaseous or liquid fossil fuel (excluding residual oil) with potential SO<sub>2</sub> emissions rates of 26 ng/J (0.060 lb/MMBtu) or less and that does not use post-combustion technology to reduce emissions of SO<sub>2</sub> or PM is exempt from the PM standards specified in paragraph (a) of this section.

[60 FR 65415, Dec. 19, 1995, as amended at 76 FR 3522, Jan. 20, 2011; 74 FR 5077, Jan. 28, 2009; 77 FR 9447, Feb. 16, 2012]

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#### **§60.43 Standard for sulfur dioxide (SO<sub>2</sub>).**

(a) Except as provided under paragraph (d) of this section, on and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases that contain SO<sub>2</sub> in excess of:

(1) 340 ng/J heat input (0.80 lb/MMBtu) derived from liquid fossil fuel or liquid fossil fuel and wood residue.

(2) 520 ng/J heat input (1.2 lb/MMBtu) derived from solid fossil fuel or solid fossil fuel and wood residue, except as provided in paragraph (e) of this section.

(b) Except as provided under paragraph (d) of this section, when different fossil fuels are burned simultaneously in any combination, the applicable standard (in ng/J) shall be determined by proration using the following formula:

$$PS_{SO_2} = \frac{y(340) + z(520)}{(y + z)}$$

Where:

PS<sub>SO<sub>2</sub></sub> = Prorated standard for SO<sub>2</sub> when burning different fuels simultaneously, in ng/J heat input derived from all fossil fuels or from all fossil fuels and wood residue fired;

y = Percentage of total heat input derived from liquid fossil fuel; and

z = Percentage of total heat input derived from solid fossil fuel.

(c) Compliance shall be based on the total heat input from all fossil fuels burned, including gaseous fuels.

(d) As an alternate to meeting the requirements of paragraphs (a) and (b) of this section, an owner or operator can petition the Administrator (in writing) to comply with §60.43Da(i)(3) of subpart Da of this part or comply with §60.42b(k)(4) of subpart Db of this part, as applicable to the affected source. If the Administrator grants the petition, the source will from then on (unless the unit is modified or reconstructed in the future) have to comply with the requirements in §60.43Da(i)(3) of subpart Da of this part or §60.42b(k)(4) of subpart Db of this part, as applicable to the affected source.

(e) Units 1 and 2 (as defined in appendix G of this part) at the Newton Power Station owned or operated by the Central Illinois Public Service Company will be in compliance with paragraph (a)(2) of this section if Unit 1 and Unit 2 individually comply with paragraph (a)(2) of this section or if the combined emission rate from Units 1 and 2 does not exceed 470 ng/J (1.1 lb/MMBtu) combined heat input to Units 1 and 2.

[60 FR 65415, Dec. 19, 1995, as amended at 74 FR 5077, Jan. 28, 2009]

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#### **§60.44 Standard for nitrogen oxides (NO<sub>x</sub>).**

(a) Except as provided under paragraph (e) of this section, on and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the

provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases that contain NO<sub>x</sub>, expressed as NO<sub>2</sub> in excess of:

(1) 86 ng/J heat input (0.20 lb/MMBtu) derived from gaseous fossil fuel.

(2) 129 ng/J heat input (0.30 lb/MMBtu) derived from liquid fossil fuel, liquid fossil fuel and wood residue, or gaseous fossil fuel and wood residue.

(3) 300 ng/J heat input (0.70 lb/MMBtu) derived from solid fossil fuel or solid fossil fuel and wood residue (except lignite or a solid fossil fuel containing 25 percent, by weight, or more of coal refuse).

(4) 260 ng/J heat input (0.60 lb MMBtu) derived from lignite or lignite and wood residue (except as provided under paragraph (a)(5) of this section).

(5) 340 ng/J heat input (0.80 lb MMBtu) derived from lignite which is mined in North Dakota, South Dakota, or Montana and which is burned in a cyclone-fired unit.

(b) Except as provided under paragraphs (c), (d), and (e) of this section, when different fossil fuels are burned simultaneously in any combination, the applicable standard (in ng/J) is determined by proration using the following formula:

$$PS_{NO_x} = \frac{w(260) + x(86) + y(130) + z(300)}{(w + x + y + z)}$$

Where:

PS<sub>NO<sub>x</sub></sub> = Prorated standard for NO<sub>x</sub> when burning different fuels simultaneously, in ng/J heat input derived from all fossil fuels fired or from all fossil fuels and wood residue fired;

w = Percentage of total heat input derived from lignite;

x = Percentage of total heat input derived from gaseous fossil fuel;

y = Percentage of total heat input derived from liquid fossil fuel; and

z = Percentage of total heat input derived from solid fossil fuel (except lignite).

(c) When a fossil fuel containing at least 25 percent, by weight, of coal refuse is burned in combination with gaseous, liquid, or other solid fossil fuel or wood residue, the standard for NO<sub>x</sub> does not apply.

(d) Except as provided under paragraph (e) of this section, cyclone-fired units which burn fuels containing at least 25 percent of lignite that is mined in North Dakota, South Dakota, or Montana remain subject to paragraph (a)(5) of this section regardless of the types of fuel combusted in combination with that lignite.

(e) As an alternate to meeting the requirements of paragraphs (a), (b), and (d) of this section, an owner or operator can petition the Administrator (in writing) to comply with §60.44Da(e)(3) of subpart Da of this part. If the Administrator grants the petition, the source will from then on (unless the unit is modified or reconstructed in the future) have to comply with the requirements in §60.44Da(e)(3) of subpart Da of this part.

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#### **§60.45 Emissions and fuel monitoring.**

(a) Each owner or operator of an affected facility subject to the applicable emissions standard shall install, calibrate, maintain, and operate continuous opacity monitoring system (COMS) for measuring opacity and a continuous emissions monitoring system (CEMS) for measuring SO<sub>2</sub> emissions, NO<sub>x</sub> emissions, and either oxygen (O<sub>2</sub>) or carbon dioxide (CO<sub>2</sub>) except as provided in paragraph (b) of this section.

(b) Certain of the CEMS and COMS requirements under paragraph (a) of this section do not apply to owners or operators under the following conditions:

(1) For a fossil-fuel-fired steam generator that combusts only gaseous or liquid fossil fuel (excluding residual oil) with potential SO<sub>2</sub> emissions rates of 26 ng/J (0.060 lb/MMBtu) or less and that



does not use post-combustion technology to reduce emissions of SO<sub>2</sub> or PM, COMS for measuring the opacity of emissions and CEMS for measuring SO<sub>2</sub> emissions are not required if the owner or operator monitors SO<sub>2</sub> emissions by fuel sampling and analysis or fuel receipts.

(2) For a fossil-fuel-fired steam generator that does not use a flue gas desulfurization device, a CEMS for measuring SO<sub>2</sub> emissions is not required if the owner or operator monitors SO<sub>2</sub> emissions by fuel sampling and analysis.

(3) Notwithstanding §60.13(b), installation of a CEMS for NO<sub>x</sub> may be delayed until after the initial performance tests under §60.8 have been conducted. If the owner or operator demonstrates during the performance test that emissions of NO<sub>x</sub> are less than 70 percent of the applicable standards in §60.44, a CEMS for measuring NO<sub>x</sub> emissions is not required. If the initial performance test results show that NO<sub>x</sub> emissions are greater than 70 percent of the applicable standard, the owner or operator shall install a CEMS for NO<sub>x</sub> within one year after the date of the initial performance tests under §60.8 and comply with all other applicable monitoring requirements under this part.

(4) If an owner or operator is not required to and elects not to install any CEMS for either SO<sub>2</sub> or NO<sub>x</sub>, a CEMS for measuring either O<sub>2</sub> or CO<sub>2</sub> is not required.

(5) For affected facilities using a PM CEMS, a bag leak detection system to monitor the performance of a fabric filter (baghouse) according to the most current requirements in §60.48Da of this part, or an ESP predictive model to monitor the performance of the ESP developed in accordance and operated according to the most current requirements in section §60.48Da of this part a COMS is not required.

(6) A COMS for measuring the opacity of emissions is not required for an affected facility 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 0.30 weight percent sulfur, and is operated such that emissions of CO to the atmosphere from the affected source are maintained at levels less than or equal to 0.15 lb/MMBtu on a boiler operating day average basis. Owners and operators of affected sources electing to comply with this paragraph must demonstrate compliance according to the procedures specified in paragraphs (b)(6)(i) through (iv) of this section.

(i) You must monitor CO emissions using a CEMS according to the procedures specified in paragraphs (b)(6)(i)(A) through (D) of this section.

(A) 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.

(B) 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).

(C) 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).

(D) 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.

(ii) You must calculate the 1-hour average CO emissions levels for each boiler 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 boiler operating day.

(iii) You must evaluate the preceding 24-hour average CO emission level each boiler 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.

(iv) You must record the CO measurements and calculations performed according to paragraph (b)(6) 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.

(7) An owner or operator of an affected facility subject to an opacity standard under §60.42 that elects to not use a COMS because the affected facility burns only fuels as specified under paragraph (b)(1) of this section, monitors PM emissions as specified under paragraph (b)(5) of this section, or monitors CO emissions as specified under paragraph (b)(6) of this section, 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 §60.42 by April 29, 2011 or within 45 days after stopping use of an existing COMS, whichever is later, and shall comply with either paragraph (b)(7)(i), (b)(7)(ii), or (b)(7)(iii) 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. The permitting authority may exempt owners or operators of affected facilities burning only natural gas from the opacity monitoring requirements.

(i) Except as provided in paragraph (b)(7)(ii) or (b)(7)(iii) 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 (b)(7) of this section according to the applicable schedule in paragraphs (b)(7)(i)(A) through (b)(7)(i)(D) of this section, as determined by the most recent Method 9 of appendix A-4 of this part performance test results.

(A) 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;

(B) 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;

(C) 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

(D) 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.

(ii) 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 test, elect to perform subsequent monitoring using Method 22 of appendix A-7 of this part according to the procedures specified in paragraphs (b)(7)(ii)(A) and (B) of this section.

(A) 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 (b)(7) of this section within 45 calendar days according to the requirements in §60.46(b)(3).

(B) 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.

(iii) 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 (b)(7)(ii) 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.

(8) A COMS for measuring the opacity of emissions is not required for an affected facility at which the owner or operator installs, calibrates, operates, and maintains a particulate matter continuous parametric monitoring system (PM CPMS) according to the requirements specified in subpart UUUUU of part 63.

(c) For performance evaluations under §60.13(c) and calibration checks under §60.13(d), the following procedures shall be used:

(1) Methods 6, 7, and 3B of appendix A of this part, as applicable, shall be used for the performance evaluations of SO<sub>2</sub> and NO<sub>x</sub> continuous monitoring systems. Acceptable alternative methods for Methods 6, 7, and 3B of appendix A of this part are given in §60.46(d).

(2) Sulfur dioxide or nitric oxide, as applicable, shall be used for preparing calibration gas mixtures under Performance Specification 2 of appendix B to this part.

(3) For affected facilities burning fossil fuel(s), the span value for a continuous monitoring system measuring the opacity of emissions shall be 80, 90, or 100 percent. For a continuous monitoring system measuring sulfur oxides or NO<sub>x</sub> the span value shall be determined using one of the following procedures:

(i) Except as provided under paragraph (c)(3)(ii) of this section, SO<sub>2</sub> and NO<sub>x</sub> span values shall be determined as follows:

Fossil fuel	In parts per million	
	Span value for SO <sub>2</sub>	Span value for NO <sub>x</sub>
Gas	( <sup>1</sup> )	500.
Liquid	1,000	500.
Solid	1,500	1,000.
Combinations	1,000y + 1,500z	500 (x + y) + 1,000z.

<sup>1</sup>Not applicable.

Where:

x = Fraction of total heat input derived from gaseous fossil fuel;

y = Fraction of total heat input derived from liquid fossil fuel; and

z = Fraction of total heat input derived from solid fossil fuel.

(ii) As an alternative to meeting the requirements of paragraph (c)(3)(i) of this section, the owner or operator of an affected facility may elect to use the SO<sub>2</sub> and NO<sub>x</sub> span values determined according to sections 2.1.1 and 2.1.2 in appendix A to part 75 of this chapter.

(4) All span values computed under paragraph (c)(3)(i) of this section for burning combinations of fossil fuels shall be rounded to the nearest 500 ppm. Span values that are computed under paragraph (c)(3)(ii) of this section shall be rounded off according to the applicable procedures in section 2 of appendix A to part 75 of this chapter.

(5) For a fossil-fuel-fired steam generator that simultaneously burns fossil fuel and nonfossil fuel, the span value of all CEMS shall be subject to the Administrator's approval.

(d) [Reserved]

(e) For any CEMS installed under paragraph (a) of this section, the following conversion procedures shall be used to convert the continuous monitoring data into units of the applicable standards (ng/J, lb/MMBtu):

(1) When a CEMS for measuring O<sub>2</sub> is selected, the measurement of the pollutant concentration and O<sub>2</sub> concentration shall each be on a consistent basis (wet or dry). Alternative procedures approved by the Administrator shall be used when measurements are on a wet basis. When measurements are on a dry basis, the following conversion procedure shall be used:

$$E = CF \left( \frac{20.9}{(20.9 - \%O_2)} \right)$$

Where E, C, F, and %O<sub>2</sub> are determined under paragraph (f) of this section.

(2) When a CEMS for measuring CO<sub>2</sub> is selected, the measurement of the pollutant concentration and CO<sub>2</sub> concentration shall each be on a consistent basis (wet or dry) and the following conversion procedure shall be used:

$$E = CF_c \left( \frac{100}{\%CO_2} \right)$$

Where E, C, F<sub>c</sub> and %CO<sub>2</sub> are determined under paragraph (f) of this section.

(f) The values used in the equations under paragraphs (e)(1) and (2) of this section are derived as follows:

(1) E = pollutant emissions, ng/J (lb/MMBtu).

(2) C = pollutant concentration, ng/dscm (lb/dscf), determined by multiplying the average concentration (ppm) for each one-hour period by  $4.15 \times 10^4$  M ng/dscm per ppm ( $2.59 \times 10^{-9}$  M lb/dscf per ppm) where M = pollutant molecular weight, g/g-mole (lb/lb-mole). M = 64.07 for SO<sub>2</sub> and 46.01 for NO<sub>x</sub>.

(3) %O<sub>2</sub>, %CO<sub>2</sub> = O<sub>2</sub> or CO<sub>2</sub> volume (expressed as percent), determined with equipment specified under paragraph (a) of this section.

(4) F, F<sub>c</sub> = a factor representing a ratio of the volume of dry flue gases generated to the calorific value of the fuel combusted (F), and a factor representing a ratio of the volume of CO<sub>2</sub> generated to the calorific value of the fuel combusted (F<sub>c</sub>), respectively. Values of F and F<sub>c</sub> are given as follows:

(i) For anthracite coal as classified according to ASTM D388 (incorporated by reference, see §60.17),  $F = 2,723 \times 10^{-17}$  dscm/J (10,140 dscf/MMBtu) and  $F_c = 0.532 \times 10^{-17}$  scm CO<sub>2</sub>/J (1,980 scf CO<sub>2</sub>/MMBtu).

(ii) For subbituminous and bituminous coal as classified according to ASTM D388 (incorporated by reference, see §60.17),  $F = 2.637 \times 10^{-7}$  dscm/J (9,820 dscf/MMBtu) and  $F_c = 0.486 \times 10^{-7}$  scm CO<sub>2</sub>/J (1,810 scf CO<sub>2</sub>/MMBtu).

(iii) For liquid fossil fuels including crude, residual, and distillate oils,  $F = 2.476 \times 10^{-7}$  dscm/J (9,220 dscf/MMBtu) and  $F_c = 0.384 \times 10^{-7}$  scm CO<sub>2</sub>/J (1,430 scf CO<sub>2</sub>/MMBtu).

(iv) For gaseous fossil fuels,  $F = 2.347 \times 10^{-7}$  dscm/J (8,740 dscf/MMBtu). For natural gas, propane, and butane fuels,  $F_c = 0.279 \times 10^{-7}$  scm CO<sub>2</sub>/J (1,040 scf CO<sub>2</sub>/MMBtu) for natural gas,  $0.322 \times 10^{-7}$  scm CO<sub>2</sub>/J (1,200 scf CO<sub>2</sub>/MMBtu) for propane, and  $0.338 \times 10^{-7}$  scm CO<sub>2</sub>/J (1,260 scf CO<sub>2</sub>/MMBtu) for butane.

(v) For bark  $F = 2.589 \times 10^{-7}$  dscm/J (9,640 dscf/MMBtu) and  $F_c = 0.500 \times 10^{-7}$  scm CO<sub>2</sub>/J (1,840 scf CO<sub>2</sub>/MMBtu). For wood residue other than bark  $F = 2.492 \times 10^{-7}$  dscm/J (9,280 dscf/MMBtu) and  $F_c = 0.494 \times 10^{-7}$  scm CO<sub>2</sub>/J (1,860 scf CO<sub>2</sub>/MMBtu).

(vi) For lignite coal as classified according to ASTM D388 (incorporated by reference, see §60.17),  $F = 2.659 \times 10^{-7}$  dscm/J (9,900 dscf/MMBtu) and  $F_c = 0.516 \times 10^{-7}$  scm CO<sub>2</sub>/J (1,920 scf CO<sub>2</sub>/MMBtu).

(5) The owner or operator may use the following equation to determine an F factor (dscm/J or dscf/MMBtu) on a dry basis (if it is desired to calculate F on a wet basis, consult the Administrator) or F<sub>c</sub> factor (scm CO<sub>2</sub>/J, or scf CO<sub>2</sub>/MMBtu) on either basis in lieu of the F or F<sub>c</sub> factors specified in paragraph (f)(4) of this section:

$$F = 10^{-4} \frac{[227.2 (\%H) + 95.5 (\%C) + 35.6 (\%S) + 8.7 (\%N) - 28.7 (\%O)]}{GCV}$$

$$F_c = \frac{2.0 \times 10^{-3} (\%C)}{GCV \text{ (SI units)}}$$

$$F = 10^{-4} \frac{[3.64 (\%H) + 1.53 (\%C) + 0.57 (\%S) + 0.14 (\%N) - 0.46 (\%O)]}{GCV \text{ (English units)}}$$

$$F_c = \frac{20.0 (\%C)}{GCV \text{ (SI units)}}$$

$$F_c = \frac{321 \times 10^3 (\%C)}{GCV \text{ (English units)}}$$

(i) %H, %C, %S, %N, and %O are content by weight of hydrogen, carbon, sulfur, nitrogen, and O<sub>2</sub> (expressed as percent), respectively, as determined on the same basis as GCV by ultimate analysis of the fuel fired, using ASTM D3178 or D3176 (solid fuels), or computed from results using ASTM D1137, D1945, or D1946 (gaseous fuels) as applicable. (These five methods are incorporated by reference, see §60.17.)

(ii) GCV is the gross calorific value (kJ/kg, Btu/lb) of the fuel combusted determined by the ASTM test methods D2015 or D5865 for solid fuels and D1826 for gaseous fuels as applicable. (These three methods are incorporated by reference, see §60.17.)

(iii) For affected facilities which fire both fossil fuels and nonfossil fuels, the F or F<sub>c</sub> value shall be subject to the Administrator's approval.

(6) For affected facilities firing combinations of fossil fuels or fossil fuels and wood residue, the F or F<sub>c</sub> factors determined by paragraphs (f)(4) or (f)(5) of this section shall be prorated in accordance with the applicable formula as follows:

$$F = \sum_{i=1}^n X_i F_i \quad \text{or} \quad F_c = \sum_{i=1}^n X_i (F_c)_i$$

Where:

$X_i$  = Fraction of total heat input derived from each type of fuel (e.g. natural gas, bituminous coal, wood residue, etc.);

$F_i$  or  $(F_c)_i$  = Applicable F or F<sub>c</sub> factor for each fuel type determined in accordance with paragraphs (f)(4) and (f)(5) of this section; and

$n$  = Number of fuels being burned in combination.

(g) Excess emission and monitoring system performance reports shall be submitted to the Administrator semiannually for each six-month period in the calendar year. All semiannual reports shall be postmarked by the 30th day following the end of each six-month period. Each excess emission and MSP report shall include the information required in §60.7(c). Periods of excess emissions and monitoring systems (MS) downtime that shall be reported are defined as follows:

(1) *Opacity*. Excess emissions are defined as any six-minute period during which the average opacity of emissions exceeds 20 percent opacity, except that one six-minute average per hour of up to 27 percent opacity need not be reported.

(i) For sources subject to the opacity standard of §60.42(b)(1), excess emissions are defined as any six-minute period during which the average opacity of emissions exceeds 35 percent opacity, except that one six-minute average per hour of up to 42 percent opacity need not be reported.

(ii) For sources subject to the opacity standard of §60.42(b)(2), excess emissions are defined as any six-minute period during which the average opacity of emissions exceeds 32 percent opacity, except that one six-minute average per hour of up to 39 percent opacity need not be reported.

(2) *Sulfur dioxide*. Excess emissions for affected facilities are defined as:

(i) For affected facilities electing not to comply with §60.43(d), any three-hour period during which the average emissions (arithmetic average of three contiguous one-hour periods) of SO<sub>2</sub> as measured by a CEMS exceed the applicable standard in §60.43; or

(ii) For affected facilities electing to comply with §60.43(d), any 30 operating day period during which the average emissions (arithmetic average of all one-hour periods during the 30 operating days) of SO<sub>2</sub> as measured by a CEMS exceed the applicable standard in §60.43. Facilities complying with the 30-day SO<sub>2</sub> standard shall use the most current associated SO<sub>2</sub> compliance and monitoring requirements in §§60.48Da and 60.49Da of subpart Da of this part or §§60.45b and 60.47b of subpart Db of this part, as applicable.

(3) *Nitrogen oxides*. Excess emissions for affected facilities using a CEMS for measuring NO<sub>x</sub> are defined as:

(i) For affected facilities electing not to comply with §60.44(e), any three-hour period during which the average emissions (arithmetic average of three contiguous one-hour periods) exceed the applicable standards in §60.44; or

(ii) For affected facilities electing to comply with §60.44(e), any 30 operating day period during which the average emissions (arithmetic average of all one-hour periods during the 30 operating days) of NO<sub>x</sub> as measured by a CEMS exceed the applicable standard in §60.44. Facilities complying with the 30-day NO<sub>x</sub> standard shall use the most current associated NO<sub>x</sub> compliance and monitoring requirements in §§60.48Da and 60.49Da of subpart Da of this part.

(4) *Particulate matter*. Excess emissions for affected facilities using a CEMS for measuring PM are defined as any boiler operating day period during which the average emissions (arithmetic average of all operating one-hour periods) exceed the applicable standards in §60.42. Affected facilities using PM CEMS must follow the most current applicable compliance and monitoring provisions in §§60.48Da and 60.49Da of subpart Da of this part.

(h) The owner or operator of an affected facility subject to the opacity limits in §60.42 that elects to monitor emissions according to the requirements in §60.45(b)(7) shall maintain records according to the requirements specified in paragraphs (h)(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 (h)(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 (h)(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.

[60 FR 65415, Dec. 19, 1995, as amended at 74 FR 5077, Jan. 28, 2009; 76 FR 3522, Jan. 20, 2011; 77 FR 9447, Feb. 16, 2012]

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#### **§60.46 Test methods and procedures.**

(a) In conducting the performance tests required in §60.8, and subsequent performance tests as requested by the EPA Administrator, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in §60.8(b). Acceptable alternative methods and procedures are given in paragraph (d) of this section.

(b) The owner or operator shall determine compliance with the PM, SO<sub>2</sub>, and NO<sub>x</sub> standards in §§60.42, 60.43, and 60.44 as follows:

(1) The emission rate (E) of PM, SO<sub>2</sub>, or NO<sub>x</sub> shall be computed for each run using the following equation:

$$E = CF_d \left( \frac{20.9}{(20.9 - \%O_2)} \right)$$

Where:

E = Emission rate of pollutant, ng/J (1b/million Btu);

C = Concentration of pollutant, ng/dscm (1b/dscf);

%O<sub>2</sub> = O<sub>2</sub> concentration, percent dry basis; and

F<sub>d</sub> = Factor as determined from Method 19 of appendix A of this part.

(2) Method 5 of appendix A of this part shall be used to determine the PM concentration (C) at affected facilities without wet flue-gas-desulfurization (FGD) systems and Method 5B of appendix A of this part shall be used to determine the PM concentration (C) after FGD systems.

(i) The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf). The probe and filter holder heating systems in the sampling train shall be set to provide an average gas temperature of 160±14 °C (320±25 °F).

(ii) The emission rate correction factor, integrated or grab sampling and analysis procedure of Method 3B of appendix A of this part shall be used to determine the O<sub>2</sub> concentration (%O<sub>2</sub>). The O<sub>2</sub> sample shall be obtained simultaneously with, and at the same traverse points as, the particulate sample. If the grab sampling procedure is used, the O<sub>2</sub> concentration for the run shall be the arithmetic mean of the sample O<sub>2</sub> concentrations at all traverse points.

(iii) If the particulate run has more than 12 traverse points, the O<sub>2</sub> traverse points may be reduced to 12 provided that Method 1 of appendix A of this part is used to locate the 12 O<sub>2</sub> traverse points.

(3) Method 9 of appendix A of this part and the procedures in §60.11 shall be used to determine opacity.

(4) Method 6 of appendix A of this part shall be used to determine the SO<sub>2</sub> concentration.

(i) The sampling site shall be the same as that selected for the particulate sample. The sampling location in the duct shall be at the centroid of the cross section or at a point no closer to the walls than 1 m (3.28 ft). The sampling time and sample volume for each sample run shall be at least 20 minutes

and 0.020 dscm (0.71 dscf). Two samples shall be taken during a 1-hour period, with each sample taken within a 30-minute interval.

(ii) The emission rate correction factor, integrated sampling and analysis procedure of Method 3B of appendix A of this part shall be used to determine the O<sub>2</sub> concentration (%O<sub>2</sub>). The O<sub>2</sub> sample shall be taken simultaneously with, and at the same point as, the SO<sub>2</sub> sample. The SO<sub>2</sub> emission rate shall be computed for each pair of SO<sub>2</sub> and O<sub>2</sub> samples. The SO<sub>2</sub> emission rate (E) for each run shall be the arithmetic mean of the results of the two pairs of samples.

(5) Method 7 of appendix A of this part shall be used to determine the NO<sub>x</sub> concentration.

(i) The sampling site and location shall be the same as for the SO<sub>2</sub> sample. Each run shall consist of four grab samples, with each sample taken at about 15-minute intervals.

(ii) For each NO<sub>x</sub> sample, the emission rate correction factor, grab sampling and analysis procedure of Method 3B of appendix A of this part shall be used to determine the O<sub>2</sub> concentration (% O<sub>2</sub>). The sample shall be taken simultaneously with, and at the same point as, the NO<sub>x</sub> sample.

(iii) The NO<sub>x</sub> emission rate shall be computed for each pair of NO<sub>x</sub> and O<sub>2</sub> samples. The NO<sub>x</sub> emission rate (E) for each run shall be the arithmetic mean of the results of the four pairs of samples.

(c) When combinations of fossil fuels or fossil fuel and wood residue are fired, the owner or operator (in order to compute the prorated standard as shown in §§60.43(b) and 60.44(b)) shall determine the percentage (w, x, y, or z) of the total heat input derived from each type of fuel as follows:

(1) The heat input rate of each fuel shall be determined by multiplying the gross calorific value of each fuel fired by the rate of each fuel burned.

(2) ASTM Methods D2015, or D5865 (solid fuels), D240 (liquid fuels), or D1826 (gaseous fuels) (all of these methods are incorporated by reference, see §60.17) shall be used to determine the gross calorific values of the fuels. The method used to determine the calorific value of wood residue must be approved by the Administrator.

(3) Suitable methods shall be used to determine the rate of each fuel burned during each test period, and a material balance over the steam generating system shall be used to confirm the rate.

(d) The owner or operator may use the following as alternatives to the reference methods and procedures in this section or in other sections as specified:

(1) The emission rate (E) of PM, SO<sub>2</sub> and NO<sub>x</sub> may be determined by using the F<sub>c</sub> factor, provided that the following procedure is used:

(i) The emission rate (E) shall be computed using the following equation:

$$E = CF_c \left( \frac{100}{\%CO_2} \right)$$

Where:

E = Emission rate of pollutant, ng/J (lb/MMBtu);

C = Concentration of pollutant, ng/dscm (lb/dscf);

%CO<sub>2</sub> = CO<sub>2</sub> concentration, percent dry basis; and

F<sub>c</sub> = Factor as determined in appropriate sections of Method 19 of appendix A of this part.

(ii) If and only if the average F<sub>c</sub> factor in Method 19 of appendix A of this part is used to calculate E and either E is from 0.97 to 1.00 of the emission standard or the relative accuracy of a continuous emission monitoring system is from 17 to 20 percent, then three runs of Method 3B of appendix A of this part shall be used to determine the O<sub>2</sub> and CO<sub>2</sub> concentration according to the procedures in paragraph (b)(2)(ii), (4)(ii), or (5)(ii) of this section. Then if F<sub>o</sub> (average of three runs), as calculated from the equation in Method 3B of appendix A of this part, is more than ±3 percent than the average F<sub>o</sub> value, as determined from the average values of F<sub>d</sub> and F<sub>c</sub> in Method 19 of appendix A of this part, *i.e.*, F<sub>oa</sub> = 0.209 (F<sub>da</sub>/F<sub>ca</sub>), then the following procedure shall be followed:



(A) When  $F_o$  is less than  $0.97 F_{oa}$ , then  $E$  shall be increased by that proportion under  $0.97 F_{oa}$ , *e.g.*, if  $F_o$  is  $0.95 F_{oa}$ ,  $E$  shall be increased by 2 percent. This recalculated value shall be used to determine compliance with the emission standard.

(B) When  $F_o$  is less than  $0.97 F_{oa}$  and when the average difference ( $d$ ) between the continuous monitor minus the reference methods is negative, then  $E$  shall be increased by that proportion under  $0.97 F_{oa}$ , *e.g.*, if  $F_o$  is  $0.95 F_{oa}$ ,  $E$  shall be increased by 2 percent. This recalculated value shall be used to determine compliance with the relative accuracy specification.

(C) When  $F_o$  is greater than  $1.03 F_{oa}$  and when the average difference  $d$  is positive, then  $E$  shall be decreased by that proportion over  $1.03 F_{oa}$ , *e.g.*, if  $F_o$  is  $1.05 F_{oa}$ ,  $E$  shall be decreased by 2 percent. This recalculated value shall be used to determine compliance with the relative accuracy specification.

(2) For Method 5 or 5B of appendix A-3 of this part, Method 17 of appendix A-6 of this part may be used at facilities with or without wet FGD systems if the stack gas temperature at the sampling location does not exceed an average temperature of  $160\text{ }^{\circ}\text{C}$  ( $320\text{ }^{\circ}\text{F}$ ). The procedures of sections 8.1 and 11.1 of Method 5B of appendix A-3 of this part may be used with Method 17 of appendix A-6 of this part only if it is used after wet FGD systems. Method 17 of appendix A-6 of this part shall not be used after wet FGD systems if the effluent gas is saturated or laden with water droplets.

(3) Particulate matter and  $\text{SO}_2$  may be determined simultaneously with the Method 5 of appendix A of this part train provided that the following changes are made:

(i) The filter and impinger apparatus in sections 2.1.5 and 2.1.6 of Method 8 of appendix A of this part is used in place of the condenser (section 2.1.7) of Method 5 of appendix A of this part.

(ii) All applicable procedures in Method 8 of appendix A of this part for the determination of  $\text{SO}_2$  (including moisture) are used:

(4) For Method 6 of appendix A of this part, Method 6C of appendix A of this part may be used. Method 6A of appendix A of this part may also be used whenever Methods 6 and 3B of appendix A of this part data are specified to determine the  $\text{SO}_2$  emission rate, under the conditions in paragraph (d) (1) of this section.

(5) For Method 7 of appendix A of this part, Method 7A, 7C, 7D, or 7E of appendix A of this part may be used. If Method 7C, 7D, or 7E of appendix A of this part is used, the sampling time for each run shall be at least 1 hour and the integrated sampling approach shall be used to determine the  $\text{O}_2$  concentration ( $\%\text{O}_2$ ) for the emission rate correction factor.

(6) For Method 3 of appendix A of this part, Method 3A or 3B of appendix A of this part may be used.

(7) For Method 3B of appendix A of this part, Method 3A of appendix A of this part may be used.

[60 FR 65415, Dec. 19, 1995, as amended at 74 FR 5078, Jan. 28, 2009]

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Appendix G

40 CFR Part 60, Subpart Kb - *Standards of Performance for Volatile Organic Liquid Storage Vessels for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984*



# ELECTRONIC CODE OF FEDERAL REGULATIONS

e-CFR Data is current as of October 14, 2013

Title 40: Protection of Environment  
PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

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## Subpart Kb—Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984

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  - §60.117b Delegation of authority.
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SOURCE: 52 FR 11429, Apr. 8, 1987, unless otherwise noted.

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### §60.110b Applicability and designation of affected facility.

(a) Except as provided in paragraph (b) of this section, the affected facility to which this subpart applies is each storage vessel with a capacity greater than or equal to 75 cubic meters (m<sup>3</sup>) that is used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after July 23, 1984.

(b) This subpart does not apply to storage vessels with a capacity greater than or equal to 151 m<sup>3</sup> storing a liquid with a maximum true vapor pressure less than 3.5 kilopascals (kPa) or with a capacity greater than or equal to 75 m<sup>3</sup> but less than 151 m<sup>3</sup> storing a liquid with a maximum true vapor pressure less than 15.0 kPa.

(c) [Reserved]

(d) This subpart does not apply to the following:

- (1) Vessels at coke oven by-product plants.
- (2) Pressure vessels designed to operate in excess of 204.9 kPa and without emissions to the atmosphere.
- (3) Vessels permanently attached to mobile vehicles such as trucks, railcars, barges, or ships.
- (4) Vessels with a design capacity less than or equal to 1,589.874 m<sup>3</sup> used for petroleum or condensate stored, processed, or treated prior to custody transfer.
- (5) Vessels located at bulk gasoline plants.
- (6) Storage vessels located at gasoline service stations.
- (7) Vessels used to store beverage alcohol.

(8) Vessels subject to subpart GGGG of 40 CFR part 63.

(e) *Alternative means of compliance*—(1) *Option to comply with part 65.* Owners or operators may choose to comply with 40 CFR part 65, subpart C, to satisfy the requirements of §§60.112b through 60.117b for storage vessels that are subject to this subpart that meet the specifications in paragraphs (e)(1)(i) and (ii) of this section. When choosing to comply with 40 CFR part 65, subpart C, the monitoring requirements of §60.116b(c), (e), (f)(1), and (g) still apply. Other provisions applying to owners or operators who choose to comply with 40 CFR part 65 are provided in 40 CFR 65.1.

(i) A storage vessel with a design capacity greater than or equal to 151 m<sup>3</sup> containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 5.2 kPa; or

(ii) A storage vessel with a design capacity greater than 75 m<sup>3</sup> but less than 151 m<sup>3</sup> containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 27.6 kPa.

(2) *Part 60, subpart A.* Owners or operators who choose to comply with 40 CFR part 65, subpart C, must also comply with §§60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for those storage vessels. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (e)(2) do not apply to owners or operators of storage vessels complying with 40 CFR part 65, subpart C, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart C, must comply with 40 CFR part 65, subpart A.

(3) *Internal floating roof report.* If an owner or operator installs an internal floating roof and, at initial startup, chooses to comply with 40 CFR part 65, subpart C, a report shall be furnished to the Administrator stating that the control equipment meets the specifications of 40 CFR 65.43. This report shall be an attachment to the notification required by 40 CFR 65.5(b).

(4) *External floating roof report.* If an owner or operator installs an external floating roof and, at initial startup, chooses to comply with 40 CFR part 65, subpart C, a report shall be furnished to the Administrator stating that the control equipment meets the specifications of 40 CFR 65.44. This report shall be an attachment to the notification required by 40 CFR 65.5(b).

[52 FR 11429, Apr. 8, 1987, as amended at 54 FR 32973, Aug. 11, 1989; 65 FR 78275, Dec. 14, 2000; 68 FR 59332, Oct. 15, 2003]

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### **§60.111b Definitions.**

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

*Bulk gasoline plant* means any gasoline distribution facility that has a gasoline throughput less than or equal to 75,700 liters per day. Gasoline throughput shall be the maximum calculated design throughput as may be limited by compliance with an enforceable condition under Federal requirement or Federal, State or local law, and discoverable by the Administrator and any other person.

*Condensate* means hydrocarbon liquid separated from natural gas that condenses due to changes in the temperature or pressure, or both, and remains liquid at standard conditions.

*Custody transfer* means the transfer of produced petroleum and/or condensate, after processing and/or treatment in the producing operations, from storage vessels or automatic transfer facilities to pipelines or any other forms of transportation.

*Fill* means the introduction of VOL into a storage vessel but not necessarily to complete capacity.

*Gasoline service station* means any site where gasoline is dispensed to motor vehicle fuel tanks from stationary storage tanks.

*Maximum true vapor pressure* means the equilibrium partial pressure exerted by the volatile organic compounds (as defined in 40 CFR 51.100) in the stored VOL at the temperature equal to the highest calendar-month average of the VOL storage temperature for VOL's stored above or below the ambient temperature or at the local maximum monthly average temperature as reported by the National Weather Service for VOL's stored at the ambient temperature, as determined:

(1) In accordance with methods described in American Petroleum Institute Bulletin 2517, Evaporation Loss From External Floating Roof Tanks, (incorporated by reference—see §60.17); or

(2) As obtained from standard reference texts; or

(3) As determined by ASTM D2879-83, 96, or 97 (incorporated by reference—see §60.17);

(4) Any other method approved by the Administrator.

*Petroleum* means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

*Petroleum liquids* means petroleum, condensate, and any finished or intermediate products manufactured in a petroleum refinery.

*Process tank* means a tank that is used within a process (including a solvent or raw material recovery process) to collect material discharged from a feedstock storage vessel or equipment within the process before the material is transferred to other equipment within the process, to a product or by-product storage vessel, or to a vessel used to store recovered solvent or raw material. In many process tanks, unit operations such as reactions and blending are conducted. Other process tanks, such as surge control vessels and bottoms receivers, however, may not involve unit operations.

*Reid vapor pressure* means the absolute vapor pressure of volatile crude oil and volatile nonviscous petroleum liquids except liquified petroleum gases, as determined by ASTM D323-82 or 94 (incorporated by reference—see §60.17).

*Storage vessel* means each tank, reservoir, or container used for the storage of volatile organic liquids but does not include:

(1) Frames, housing, auxiliary supports, or other components that are not directly involved in the containment of liquids or vapors;

(2) Subsurface caverns or porous rock reservoirs; or

(3) Process tanks.

*Volatile organic liquid (VOL)* means any organic liquid which can emit volatile organic compounds (as defined in 40 CFR 51.100) into the atmosphere.

*Waste* means any liquid resulting from industrial, commercial, mining or agricultural operations, or from community activities that is discarded or is being accumulated, stored, or physically, chemically, or biologically treated prior to being discarded or recycled.

[52 FR 11429, Apr. 8, 1987, as amended at 54 FR 32973, Aug. 11, 1989; 65 FR 61756, Oct. 17, 2000; 68 FR 59333, Oct. 15, 2003]

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### **§60.112b Standard for volatile organic compounds (VOC).**

(a) The owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m<sup>3</sup> containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 5.2 kPa but less than 76.6 kPa or with a design capacity greater than or equal to 75 m<sup>3</sup> but less than 151 m<sup>3</sup> containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 27.6 kPa but less than 76.6 kPa, shall equip each storage vessel with one of the following:

(1) A fixed roof in combination with an internal floating roof meeting the following specifications:

(i) The internal floating roof shall rest or float on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed roof. The internal floating roof shall be floating on the liquid surface at all times, except during initial fill and during those intervals when the storage vessel is completely emptied or subsequently emptied and refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible.

(ii) Each internal floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof:

(A) A foam- or liquid-filled seal mounted in contact with the liquid (liquid-mounted seal). A liquid-mounted seal means a foam- or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the tank.

(B) Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous.

(C) A mechanical shoe seal. A mechanical shoe seal is a metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

(iii) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface.

(iv) Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains is to be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use.

(v) Automatic bleeder vents shall be equipped with a gasket and are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports.

(vi) Rim space vents shall be equipped with a gasket and are to be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting.

(vii) Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90 percent of the opening.

(viii) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.

(ix) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.

(2) An external floating roof. An external floating roof means a pontoon-type or double-deck type cover that rests on the liquid surface in a vessel with no fixed roof. Each external floating roof must meet the following specifications:

(i) Each external floating roof shall be equipped with a closure device between the wall of the storage vessel and the roof edge. The closure device is to consist of two seals, one above the other. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal.

(A) The primary seal shall be either a mechanical shoe seal or a liquid-mounted seal. Except as provided in §60.113b(b)(4), the seal shall completely cover the annular space between the edge of the floating roof and tank wall.

(B) The secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion except as allowed in §60.113b(b)(4).

(ii) Except for automatic bleeder vents and rim space vents, each opening in a noncontact external floating roof shall provide a projection below the liquid surface. Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof is to be equipped with a gasketed cover, seal, or lid that is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. Automatic bleeder vents are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. Rim vents are to be set to open when the roof is being floated off the roof legs supports or at the manufacturer's recommended setting. Automatic bleeder vents and rim space vents are to be



gasketed. Each emergency roof drain is to be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening.

(iii) The roof shall be floating on the liquid at all times (i.e., off the roof leg supports) except during initial fill until the roof is lifted off leg supports and when the tank is completely emptied and subsequently refilled. The process of filling, emptying, or refilling when the roof is resting on the leg supports shall be continuous and shall be accomplished as rapidly as possible.

(3) A closed vent system and control device meeting the following specifications:

(i) The closed vent system shall be designed to collect all VOC vapors and gases discharged from the storage vessel and operated with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background and visual inspections, as determined in part 60, subpart VV, §60.485(b).

(ii) The control device shall be designed and operated to reduce inlet VOC emissions by 95 percent or greater. If a flare is used as the control device, it shall meet the specifications described in the general control device requirements (§60.18) of the General Provisions.

(4) A system equivalent to those described in paragraphs (a)(1), (a)(2), or (a)(3) of this section as provided in §60.114b of this subpart.

(b) The owner or operator of each storage vessel with a design capacity greater than or equal to 75 m<sup>3</sup> which contains a VOL that, as stored, has a maximum true vapor pressure greater than or equal to 76.6 kPa shall equip each storage vessel with one of the following:

(1) A closed vent system and control device as specified in §60.112b(a)(3).

(2) A system equivalent to that described in paragraph (b)(1) as provided in §60.114b of this subpart.

(c) *Site-specific standard for Merck & Co., Inc.'s Stonewall Plant in Elkton, Virginia.* This paragraph applies only to the pharmaceutical manufacturing facility, commonly referred to as the Stonewall Plant, located at Route 340 South, in Elkton, Virginia ("site").

(1) For any storage vessel that otherwise would be subject to the control technology requirements of paragraphs (a) or (b) of this section, the site shall have the option of either complying directly with the requirements of this subpart, or reducing the site-wide total criteria pollutant emissions cap (total emissions cap) in accordance with the procedures set forth in a permit issued pursuant to 40 CFR 52.2454. If the site chooses the option of reducing the total emissions cap in accordance with the procedures set forth in such permit, the requirements of such permit shall apply in lieu of the otherwise applicable requirements of this subpart for such storage vessel.

(2) For any storage vessel at the site not subject to the requirements of 40 CFR 60.112b (a) or (b), the requirements of 40 CFR 60.116b (b) and (c) and the General Provisions (subpart A of this part) shall not apply.

[52 FR 11429, Apr. 8, 1987, as amended at 62 FR 52641, Oct. 8, 1997]

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### **§60.113b Testing and procedures.**

The owner or operator of each storage vessel as specified in §60.112b(a) shall meet the requirements of paragraph (a), (b), or (c) of this section. The applicable paragraph for a particular storage vessel depends on the control equipment installed to meet the requirements of §60.112b.

(a) After installing the control equipment required to meet §60.112b(a)(1) (permanently affixed roof and internal floating roof), each owner or operator shall:

(1) Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), prior to filling the storage vessel with VOL. If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric or defects in the internal floating roof, or both, the owner or operator shall repair the items before filling the storage vessel.

(2) For Vessels equipped with a liquid-mounted or mechanical shoe primary seal, visually inspect the internal floating roof and the primary seal or the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill. If the internal floating roof is not resting on the surface of the VOL inside the storage vessel, or there is liquid accumulated on the roof, or the seal is detached, or there are holes or tears in the seal fabric, the owner or operator shall repair the items or empty and remove the storage vessel from service within 45 days. If a failure that is detected during inspections required in this paragraph cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Administrator in the inspection report required in §60.115b(a)(3). Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions the company will take that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

(3) For vessels equipped with a double-seal system as specified in §60.112b(a)(1)(ii)(B):

(i) Visually inspect the vessel as specified in paragraph (a)(4) of this section at least every 5 years; or

(ii) Visually inspect the vessel as specified in paragraph (a)(2) of this section.

(4) Visually inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the storage vessel is emptied and degassed. If the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, or the gaskets no longer close off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10 percent open area, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage vessel with VOL. In no event shall inspections conducted in accordance with this provision occur at intervals greater than 10 years in the case of vessels conducting the annual visual inspection as specified in paragraphs (a)(2) and (a)(3)(ii) of this section and at intervals no greater than 5 years in the case of vessels specified in paragraph (a)(3)(i) of this section.

(5) Notify the Administrator in writing at least 30 days prior to the filling or refilling of each storage vessel for which an inspection is required by paragraphs (a)(1) and (a)(4) of this section to afford the Administrator the opportunity to have an observer present. If the inspection required by paragraph (a)(4) of this section is not planned and the owner or operator could not have known about the inspection 30 days in advance or refilling the tank, the owner or operator shall notify the Administrator at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Administrator at least 7 days prior to the refilling.

(b) After installing the control equipment required to meet §60.112b(a)(2) (external floating roof), the owner or operator shall:

(1) Determine the gap areas and maximum gap widths, between the primary seal and the wall of the storage vessel and between the secondary seal and the wall of the storage vessel according to the following frequency.

(i) Measurements of gaps between the tank wall and the primary seal (seal gaps) shall be performed during the hydrostatic testing of the vessel or within 60 days of the initial fill with VOL and at least once every 5 years thereafter.

(ii) Measurements of gaps between the tank wall and the secondary seal shall be performed within 60 days of the initial fill with VOL and at least once per year thereafter.

(iii) If any source ceases to store VOL for a period of 1 year or more, subsequent introduction of VOL into the vessel shall be considered an initial fill for the purposes of paragraphs (b)(1)(i) and (b)(1)(ii) of this section.

(2) Determine gap widths and areas in the primary and secondary seals individually by the following procedures:

(i) Measure seal gaps, if any, at one or more floating roof levels when the roof is floating off the roof leg supports.

(ii) Measure seal gaps around the entire circumference of the tank in each place where a 0.32-cm diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the wall of the storage vessel and measure the circumferential distance of each such location.

(iii) The total surface area of each gap described in paragraph (b)(2)(ii) of this section shall be determined by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance.

(3) Add the gap surface area of each gap location for the primary seal and the secondary seal individually and divide the sum for each seal by the nominal diameter of the tank and compare each ratio to the respective standards in paragraph (b)(4) of this section.

(4) Make necessary repairs or empty the storage vessel within 45 days of identification in any inspection for seals not meeting the requirements listed in (b)(4) (i) and (ii) of this section:

(i) The accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal shall not exceed 212 cm<sup>2</sup> per meter of tank diameter, and the width of any portion of any gap shall not exceed 3.81 cm.

(A) One end of the mechanical shoe is to extend into the stored liquid, and the other end is to extend a minimum vertical distance of 61 cm above the stored liquid surface.

(B) There are to be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope.

(ii) The secondary seal is to meet the following requirements:

(A) The secondary seal is to be installed above the primary seal so that it completely covers the space between the roof edge and the tank wall except as provided in paragraph (b)(2)(iii) of this section.

(B) The accumulated area of gaps between the tank wall and the secondary seal shall not exceed 21.2 cm<sup>2</sup> per meter of tank diameter, and the width of any portion of any gap shall not exceed 1.27 cm.

(C) There are to be no holes, tears, or other openings in the seal or seal fabric.

(iii) If a failure that is detected during inspections required in paragraph (b)(1) of §60.113b(b) cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Administrator in the inspection report required in §60.115b(b)(4). Such extension request must include a demonstration of unavailability of alternate storage capacity and a specification of a schedule that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

(5) Notify the Administrator 30 days in advance of any gap measurements required by paragraph (b)(1) of this section to afford the Administrator the opportunity to have an observer present.

(6) Visually inspect the external floating roof, the primary seal, secondary seal, and fittings each time the vessel is emptied and degassed.

(i) If the external floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before filling or refilling the storage vessel with VOL.

(ii) For all the inspections required by paragraph (b)(6) of this section, the owner or operator shall notify the Administrator in writing at least 30 days prior to the filling or refilling of each storage vessel to afford the Administrator the opportunity to inspect the storage vessel prior to refilling. If the inspection required by paragraph (b)(6) of this section is not planned and the owner or operator could not have known about the inspection 30 days in advance of refilling the tank, the owner or operator shall notify the Administrator at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Administrator at least 7 days prior to the refilling.

(c) The owner or operator of each source that is equipped with a closed vent system and control device as required in §60.112b (a)(3) or (b)(2) (other than a flare) is exempt from §60.8 of the General Provisions and shall meet the following requirements.

(1) Submit for approval by the Administrator as an attachment to the notification required by §60.7(a)(1) or, if the facility is exempt from §60.7(a)(1), as an attachment to the notification required by §60.7(a)(2), an operating plan containing the information listed below.

(i) Documentation demonstrating that the control device will achieve the required control efficiency during maximum loading conditions. This documentation is to include a description of the gas stream which enters the control device, including flow and VOC content under varying liquid level conditions (dynamic and static) and manufacturer's design specifications for the control device. If the control device or the closed vent capture system receives vapors, gases, or liquids other than fuels from sources that are not designated sources under this subpart, the efficiency demonstration is to include consideration of all vapors, gases, and liquids received by the closed vent capture system and control device. If an enclosed combustion device with a minimum residence time of 0.75 seconds and a minimum temperature of 816 °C is used to meet the 95 percent requirement, documentation that those conditions will exist is sufficient to meet the requirements of this paragraph.

(ii) A description of the parameter or parameters to be monitored to ensure that the control device will be operated in conformance with its design and an explanation of the criteria used for selection of that parameter (or parameters).

(2) Operate the closed vent system and control device and monitor the parameters of the closed vent system and control device in accordance with the operating plan submitted to the Administrator in accordance with paragraph (c)(1) of this section, unless the plan was modified by the Administrator during the review process. In this case, the modified plan applies.

(d) The owner or operator of each source that is equipped with a closed vent system and a flare to meet the requirements in §60.112b (a)(3) or (b)(2) shall meet the requirements as specified in the general control device requirements, §60.18 (e) and (f).

[52 FR 11429, Apr. 8, 1987, as amended at 54 FR 32973, Aug. 11, 1989]

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#### **§60.114b Alternative means of emission limitation.**

(a) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in emissions at least equivalent to the reduction in emissions achieved by any requirement in §60.112b, the Administrator will publish in the FEDERAL REGISTER a notice permitting the use of the alternative means for purposes of compliance with that requirement.

(b) Any notice under paragraph (a) of this section will be published only after notice and an opportunity for a hearing.

(c) Any person seeking permission under this section shall submit to the Administrator a written application including:

(1) An actual emissions test that uses a full-sized or scale-model storage vessel that accurately collects and measures all VOC emissions from a given control device and that accurately simulates wind and accounts for other emission variables such as temperature and barometric pressure.

(2) An engineering evaluation that the Administrator determines is an accurate method of determining equivalence.

(d) The Administrator may condition the permission on requirements that may be necessary to ensure operation and maintenance to achieve the same emissions reduction as specified in §60.112b.

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#### **§60.115b Reporting and recordkeeping requirements.**

The owner or operator of each storage vessel as specified in §60.112b(a) shall keep records and furnish reports as required by paragraphs (a), (b), or (c) of this section depending upon the control equipment installed to meet the requirements of §60.112b. The owner or operator shall keep copies of all reports and records required by this section, except for the record required by (c)(1), for at least 2 years. The record required by (c)(1) will be kept for the life of the control equipment.

(a) After installing control equipment in accordance with §60.112b(a)(1) (fixed roof and internal floating roof), the owner or operator shall meet the following requirements.

(1) Furnish the Administrator with a report that describes the control equipment and certifies that the control equipment meets the specifications of §60.112b(a)(1) and §60.113b(a)(1). This report shall be an attachment to the notification required by §60.7(a)(3).

(2) Keep a record of each inspection performed as required by §60.113b (a)(1), (a)(2), (a)(3), and (a)(4). Each record shall identify the storage vessel on which the inspection was performed and shall contain the date the vessel was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings).

(3) If any of the conditions described in §60.113b(a)(2) are detected during the annual visual inspection required by §60.113b(a)(2), a report shall be furnished to the Administrator within 30 days of the inspection. Each report shall identify the storage vessel, the nature of the defects, and the date the storage vessel was emptied or the nature of and date the repair was made.

(4) After each inspection required by §60.113b(a)(3) that finds holes or tears in the seal or seal fabric, or defects in the internal floating roof, or other control equipment defects listed in §60.113b(a)(3)(ii), a report shall be furnished to the Administrator within 30 days of the inspection. The report shall identify the storage vessel and the reason it did not meet the specifications of §61.112b(a)(1) or §60.113b(a)(3) and list each repair made.

(b) After installing control equipment in accordance with §61.112b(a)(2) (external floating roof), the owner or operator shall meet the following requirements.

(1) Furnish the Administrator with a report that describes the control equipment and certifies that the control equipment meets the specifications of §60.112b(a)(2) and §60.113b(b)(2), (b)(3), and (b)(4). This report shall be an attachment to the notification required by §60.7(a)(3).

(2) Within 60 days of performing the seal gap measurements required by §60.113b(b)(1), furnish the Administrator with a report that contains:

(i) The date of measurement.

(ii) The raw data obtained in the measurement.

(iii) The calculations described in §60.113b (b)(2) and (b)(3).

(3) Keep a record of each gap measurement performed as required by §60.113b(b). Each record shall identify the storage vessel in which the measurement was performed and shall contain:

(i) The date of measurement.

(ii) The raw data obtained in the measurement.

(iii) The calculations described in §60.113b (b)(2) and (b)(3).

(4) After each seal gap measurement that detects gaps exceeding the limitations specified by §60.113b(b)(4), submit a report to the Administrator within 30 days of the inspection. The report will identify the vessel and contain the information specified in paragraph (b)(2) of this section and the date the vessel was emptied or the repairs made and date of repair.

(c) After installing control equipment in accordance with §60.112b (a)(3) or (b)(1) (closed vent system and control device other than a flare), the owner or operator shall keep the following records.

(1) A copy of the operating plan.

(2) A record of the measured values of the parameters monitored in accordance with §60.113b(c)(2).

(d) After installing a closed vent system and flare to comply with §60.112b, the owner or operator shall meet the following requirements.

(1) A report containing the measurements required by §60.18(f) (1), (2), (3), (4), (5), and (6) shall be furnished to the Administrator as required by §60.8 of the General Provisions. This report shall be submitted within 6 months of the initial start-up date.

(2) Records shall be kept of all periods of operation during which the flare pilot flame is absent.

(3) Semiannual reports of all periods recorded under §60.115b(d)(2) in which the pilot flame was absent shall be furnished to the Administrator.

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#### **§60.116b Monitoring of operations.**

(a) The owner or operator shall keep copies of all records required by this section, except for the record required by paragraph (b) of this section, for at least 2 years. The record required by paragraph (b) of this section will be kept for the life of the source.

(b) The owner or operator of each storage vessel as specified in §60.110b(a) shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel.

(c) Except as provided in paragraphs (f) and (g) of this section, the owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m<sup>3</sup> storing a liquid with a maximum true vapor pressure greater than or equal to 3.5 kPa or with a design capacity greater than or equal to 75 m<sup>3</sup> but less than 151 m<sup>3</sup> storing a liquid with a maximum true vapor pressure greater than or equal to 15.0 kPa shall maintain a record of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period.

(d) Except as provided in paragraph (g) of this section, the owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m<sup>3</sup> storing a liquid with a maximum true vapor pressure that is normally less than 5.2 kPa or with a design capacity greater than or equal to 75 m<sup>3</sup> but less than 151 m<sup>3</sup> storing a liquid with a maximum true vapor pressure that is normally less than 27.6 kPa shall notify the Administrator within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor pressure values for each volume range.

(e) Available data on the storage temperature may be used to determine the maximum true vapor pressure as determined below.

(1) For vessels operated above or below ambient temperatures, the maximum true vapor pressure is calculated based upon the highest expected calendar-month average of the storage temperature. For vessels operated at ambient temperatures, the maximum true vapor pressure is calculated based upon the maximum local monthly average ambient temperature as reported by the National Weather Service.

(2) For crude oil or refined petroleum products the vapor pressure may be obtained by the following:

(i) Available data on the Reid vapor pressure and the maximum expected storage temperature based on the highest expected calendar-month average temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517 (incorporated by reference—see §60.17), unless the Administrator specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s).

(ii) The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa or with physical properties that preclude determination by the recommended method is to be determined from available data and recorded if the estimated maximum true vapor pressure is greater than 3.5 kPa.

(3) For other liquids, the vapor pressure:

(i) May be obtained from standard reference texts, or

(ii) Determined by ASTM D2879-83, 96, or 97 (incorporated by reference—see §60.17); or

(iii) Measured by an appropriate method approved by the Administrator; or

(iv) Calculated by an appropriate method approved by the Administrator.

(f) The owner or operator of each vessel storing a waste mixture of indeterminate or variable composition shall be subject to the following requirements.

(1) Prior to the initial filling of the vessel, the highest maximum true vapor pressure for the range of anticipated liquid compositions to be stored will be determined using the methods described in paragraph (e) of this section.

(2) For vessels in which the vapor pressure of the anticipated liquid composition is above the cutoff for monitoring but below the cutoff for controls as defined in §60.112b(a), an initial physical test of the vapor pressure is required; and a physical test at least once every 6 months thereafter is required as determined by the following methods:

(i) ASTM D2879-83, 96, or 97 (incorporated by reference—see §60.17); or

(ii) ASTM D323-82 or 94 (incorporated by reference—see §60.17); or

(iii) As measured by an appropriate method as approved by the Administrator.

(g) The owner or operator of each vessel equipped with a closed vent system and control device meeting the specification of §60.112b or with emissions reductions equipment as specified in 40 CFR 65.42(b)(4), (b)(5), (b)(6), or (c) is exempt from the requirements of paragraphs (c) and (d) of this section.

[52 FR 11429, Apr. 8, 1987, as amended at 65 FR 61756, Oct. 17, 2000; 65 FR 78276, Dec. 14, 2000; 68 FR 59333, Oct. 15, 2003]

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#### **§60.117b Delegation of authority.**

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: §§60.111b(f)(4), 60.114b, 60.116b(e)(3)(iii), 60.116b(e)(3)(iv), and 60.116b(f)(2)(iii).

[52 FR 11429, Apr. 8, 1987, as amended at 52 FR 22780, June 16, 1987]

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Appendix H

40 CFR Part 63, Subpart RR – *National Emission Standards for Hazardous Air Pollutants for Individual Drain Systems*



## ELECTRONIC CODE OF FEDERAL REGULATIONS

e-CFR Data is current as of October 14, 2013

Title 40: Protection of Environment

PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES (CONTINUED)

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### Subpart RR—National Emission Standards for Individual Drain Systems

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  - §63.967 Implementation and enforcement.
- 

SOURCE: 61 FR 34193, July 1, 1996, unless otherwise noted.

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#### §63.960 Applicability.

(a) The provisions of this subpart apply to the control of air emissions from individual drain systems for which another subpart of 40 CFR parts 60, 61, or 63 references the use of this subpart for such air emission control. These air emission standards for individual drain systems are placed here for administrative convenience and only apply to those owners and operators of facilities subject to the other subparts that reference this subpart. The provisions of 40 CFR part 63, subpart A—General Provisions do not apply to this subpart except as noted in the subpart that references this subpart.

(b) [Reserved]

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#### §63.961 Definitions.

All terms used in this subpart shall have the meaning given to them in the Act and in this section. If a term is defined in both this section and in another subpart that references the use of this subpart, then the definition in this subpart shall take precedence when implementing this subpart.

*Closure device* means a cap, cover, hatch, lid, plug, seal, valve, or other type of fitting that, when the device is secured in the closed position, prevents or reduces air emissions to the atmosphere by blocking an opening to the individual drain system. Closure devices include devices that are detachable (e.g., a plug or manhole cover), manually operated (e.g., a hinged access lid or hatch), or automatically operated (e.g., a spring-loaded pressure relief valve).

*Hard-piping* means pipe or tubing that is manufactured and properly installed in accordance with relevant standards (e.g., ANSI B31-3) and good engineering practices.

*Individual drain system* means a stationary system used to convey regulated-material to a waste management unit or to discharge or disposal. The term includes hard-piping, all drains and junction boxes, together with their associated sewer lines and other junction boxes (e.g., manholes, sumps, and lift stations) conveying regulated-material. For the purpose of this subpart, an individual drain system is not a drain and collection system that is designed and operated for the sole purpose of

collecting rainfall runoff (e.g., stormwater sewer system) and is segregated from all other individual drain systems.

*Junction box* means a sump, manhole, or access point to a sewer line or a lift station.

*Regulated-material* means the wastewater streams, residuals, and any other materials specified by the referencing subpart to be managed in accordance with the standards under this subpart.

*Sewer line* means a lateral, trunk line, branch line, or other conduit used to convey regulated-material to a downstream waste management unit. Sewer lines include pipes, grates, and trenches.

*Waste management unit* means the equipment, structure, or device used to convey, store, treat, or dispose of regulated-material. 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.

*Water seal* means a seal pot, p-leg trap, or other type of trap filled with water (e.g., flooded sewers that maintain liquid levels adequate to prevent air flow through the system) that creates a liquid barrier between the sewer line and the atmosphere. The liquid level of the seal must be maintained in the vertical leg of a drain in order to be considered a water seal.

[61 FR 34193, July 1, 1996, as amended at 64 FR 38989, July 20, 1999]

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### **§63.962 Standards.**

(a) The owner or operator subject to this subpart shall control air emissions from the individual drain system using one or a combination of the following:

(1) Covers, water seals, and other air emission control equipment as specified in paragraph (b) of this section.

(2) Hard-piping.

(3) Venting of the individual drain system through a closed vent system to a control device in accordance with the following requirements:

(i) The individual drain system is designed and operated such that an internal pressure in the vapor headspace in the system is maintained at a level less than atmospheric pressure when the control device is operating, and

(ii) The closed vent system and control device are designed and operated in accordance with the requirements of §63.693 in 40 CFR part 63, subpart DD—National Emission Standards for Hazardous Air Pollutant Standards from Off-Site Waste and Recovery Operations.

(b) Owners and operators controlling air emissions from an individual drain system in accordance with paragraph (a)(1) of this section shall meet the following requirements:

(1) The individual drain system shall be designed to segregate the organic vapors from regulated material managed in the controlled individual drain system from entering any other individual drain system that is not controlled for air emissions in accordance with the standards specified in this subpart.

(2) *Drain control requirements.* Each drain shall be equipped with either a water seal or a closure device in accordance with the following requirements:

(i) When a water seal is used, the water seal shall be designed such that either:

(A) The outlet to the pipe discharging the regulated-material extends below the liquid surface in the water seal of the drain; or

(B) A flexible shield or other device is installed which restricts wind motion across the open space between the outlet of the pipe discharging the regulated material and the drain.

(ii) When a closure device is used (e.g., securing a cap or plug on a drain that is not receiving regulated-material), the closure device shall be designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the drain opening and the closure device.

(3) *Junction box control requirements.* Each junction box shall be equipped with controls as follows:

(i) The junction box shall be equipped with a closure device (e.g., manhole cover, access hatch) that is designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the junction box opening and the closure device.

(ii) If the junction box is vented, the junction box shall be vented in accordance with the following requirements:

(A) The junction box shall be vented through a closed vent system to a control device except as provided for in paragraph (b)(3)(ii)(B) of this section. The closed vent system and control device shall be designed and operated in accordance with the standards specified in §63.693.

(B) As an alternative to paragraph (b)(3)(ii)(A) of this section, the owner or operator may vent the junction box directly to the atmosphere when all of the following conditions are met:

(1) The junction box is filled and emptied by gravity flow (i.e., there is no pump) or is operated with no more than slight fluctuations in the liquid level. Large changes in the size of the junction box vapor headspace created by using a pump to repeatedly empty and then refill the junction box do not meet this condition.

(2) The vent pipe installed on the junction box shall be at least 90 centimeters in length and no greater than 10 centimeters in nominal inside diameter.

(3) Water seals are installed at the liquid entrance(s) to or exit from the junction box to restrict ventilation in the individual drain system and between components in the individual drain system. The owner or operator shall demonstrate (e.g., by visual inspection or smoke test) upon request by the Administrator that the junction box water seal is properly designed and restricts ventilation.

(4) *Sewer line control requirements.* Each sewer line shall not be open to the atmosphere and shall be covered or closed in a manner such that there are no visible cracks, holes, gaps, or other open spaces in the sewer line joints, seals, or other emission interfaces.

(5) *Operating requirements.* The owner or operator shall operate the air emission controls required by paragraphs (b)(2) through (b)(4) of this section in accordance with the following requirements:

(i) Each closure device shall be maintained in a closed position whenever regulated-material is in the individual drain system except when it is necessary to remove or open the closure device for sampling or removing material in the individual drain system, or for equipment inspection, maintenance, or repair.

(ii) Each drain equipped with a water seal and open to the atmosphere shall be operated to ensure that the liquid in the water seal is maintained at the appropriate level. Examples of acceptable means for complying with this provision include but are not limited to using a flow-monitoring device indicating positive flow from a main to a branch water line supplying a trap; continuously dripping water into the trap using a hose; or regular visual observations.

(iii) Each closed-vent system and the control device used to comply with paragraph (b)(3)(ii)(A) of this section shall be operated in accordance with the standards specified in 40 CFR 63.693.

[61 FR 34193, July 1, 1996, as amended at 64 FR 38990, July 20, 1999; 66 FR 1267, Jan. 8, 2001]

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**§63.963 [Reserved]**

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**§63.964 Inspection and monitoring requirements.**

(a) The owner or operator shall inspect the individual drain system in accordance with the following requirements:

(1) The individual drain system shall be visually inspected by the owner or operator as follows to check for defects that could result in air emissions to the atmosphere.

(i) The owner or operator shall visually inspect each drain as follows:

(A) In the case when the drain is using a water seal to control air emissions, the owner or operator shall verify appropriate liquid levels are being maintained and identify any other defects that could reduce water seal control effectiveness.

(B) In the case when the drain is using a closure device to control air emissions, the owner or operator shall visually inspect each drain to verify that the closure device is in place and there are no defects. Defects include, but are not limited to, visible cracks, holes, or gaps in the closure devices; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing plugs, caps, or other closure devices.

(ii) The owner or operator shall visually inspect each junction box to verify that closure devices are in place and there are no defects. Defects include, but are not limited to, visible cracks, holes, or gaps in the closure devices; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(iii) The owner or operator shall visually inspect the unburied portion of each sewer line to verify that all closure devices are in place and there are no defects. Defects include, but are not limited to, visible cracks, holes, gaps, or other open spaces in the sewer line joints, seals, or other emission interfaces.

(iv) The owner or operator shall perform the inspections initially at the time of installation of the water seals and closure devices for the individual drain system and, thereafter, at least once every year.

(v) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (b) of this section.

(vi) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in §63.965(a) of this subpart.

(2) The owner or operator shall inspect and monitor the closed-vent system and the control device in accordance with the requirements specified in §63.693 in 40 CFR 63 subpart DD—National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations.

(b) The owner or operator shall repair all detected defects as follows:

(1) The owner or operator shall make first efforts at repair of the defect no later than 5 calendar days after detection and repair shall be completed as soon as possible but no later than 15 calendar days after detection except as provided in paragraph (b)(2) of this section.

(2) Repair of a defect may be delayed beyond 15 calendar days if the owner or operator determines that repair of the defect requires emptying or temporary removal from service of the individual drain system and no alternative capacity is available at the facility site to accept the regulated-material normally managed in the individual drain system. In this case, the owner or operator shall repair the defect the next time the process or unit that is generating the regulated-material managed in the individual drain system stops operation. Repair of the defect shall be completed before the process or unit resumes operation.

(3) The owner or operator shall maintain a record of the defect repair in accordance with the requirements specified in §63.965(a)(3) of this subpart.

[61 FR 34193, July 1, 1996, as amended at 64 FR 38990, July 20, 1999]

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**§63.965 Recordkeeping requirements.**

(a) Each owner or operator complying with §63.962(a)(1) of this subpart shall prepare and maintain the following records:

(1) A written site-specific individual drain system inspection plan that includes a drawing or schematic of the individual drain system and identifies each drain, junction box, and sewer line location.

(2) A record of the date that each inspection required by §63.964(a) of this subpart is performed.

(3) When applicable, a record for each defect detected during inspections required by §63.964(a) of this subpart that includes the following information: the location of the defect, a description of the defect, the date of detection, the corrective action taken to repair the defect, and the date that the corrective action was completed. In the event that repair of the defect is delayed in accordance with the provisions of §63.964(b)(2) of this section, the owner or operator shall also record the reason for the delay and the date that completion of repair of the defect is expected.

(b) Owners and operators that use a closed-vent system and a control device in accordance with the provisions of §63.962 shall prepare and maintain the records required for the closed-vent system and control device in accordance with the requirements of §63.693.

[61 FR 34193, July 1, 1996, as amended at 64 FR 38991, July 20, 1999; 66 FR 1267, Jan. 8, 2001]

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**§63.966 Reporting requirements.**

Owners and operators that use a closed-vent system and a control device in accordance with the provisions of §63.962 shall prepare and submit to the Administrator the reports required for closed-vent systems and control devices in accordance with the requirements of §63.693.

[66 FR 1267, Jan. 8, 2001]

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**§63.967 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 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 §§63.960 and 63.962. Where these standards reference subpart DD, the cited provisions will be delegated according to the delegation provisions subpart DD of this part.

(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 37355, June 23, 2003]

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Appendix I

40 CFR Part 63, Subpart ZZZZ – *National Emissions Standards for Hazardous Air Pollutants  
for Stationary Reciprocating Internal Combustion Engines*



## ELECTRONIC CODE OF FEDERAL REGULATIONS

**e-CFR Data is current as of October 14, 2013**

Title 40: Protection of Environment

PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES (CONTINUED)

### Subpart ZZZZ—National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

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SOURCE: 69 FR 33506, June 15, 2004, unless otherwise noted.

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## WHAT THIS SUBPART COVERS

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### §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]

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### §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 or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii) and 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 or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii) and 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 or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii) and 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]

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### **§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 that does not operate or is not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii).

(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 that does not operate or is not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii).

(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]

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### **§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]

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## EMISSION AND OPERATING LIMITATIONS

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### **§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]



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**§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]

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**§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]

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**§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 annually, 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 annually, whichever comes first, and replace as necessary.

(3) Inspect fuel filters and belts, if installed, every 750 hours of operation or annually, whichever comes first, and replace as necessary.

(4) Inspect all flexible hoses every 1,000 hours of operation or annually, 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]

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### **§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 80.510(b) 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 or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii) or that operates for the purpose specified in §63.6640(f)(4)(ii), you must use diesel fuel that meets the requirements in 40 CFR 80.510 (b) 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) Beginning January 1, 2015, if you own or operate a new emergency CI stationary RICE with a site rating of more than 500 brake HP and a displacement of less than 30 liters per cylinder located at a major source of HAP that uses diesel fuel and operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii), you must use diesel fuel that meets the requirements in 40 CFR 80.510(b) for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to January 1, 2015, may be used until depleted.

(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]

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## GENERAL COMPLIANCE REQUIREMENTS

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### **§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]

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## TESTING AND INITIAL COMPLIANCE REQUIREMENTS

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### **§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]

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**§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]

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**§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]

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### **§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.

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### **§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:

$$\frac{C_i - C_o}{C_i} \times 100 = R \quad (\text{Eq. 1})$$

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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:

$$F_o = \frac{0.209 F_d}{F_c} \quad (\text{Eq. 2})$$

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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:

$$X_{CO_2} = \frac{5.9}{F_o} \quad (\text{Eq. 3})$$

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Where:

X<sub>CO<sub>2</sub></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:

$$C_{adj} = C_d \frac{X_{CO_2}}{\%CO_2} \quad (\text{Eq. 4})$$

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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<sub>CO<sub>2</sub></sub> = 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.

[69 FR 33506, June 15, 2004, as amended at 75 FR 9676, Mar. 3, 2010; 78 FR 6702, Jan. 30, 2013]

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### **§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.

(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 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 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. If any of the limits are exceeded, the engine owner or operator must change the oil 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 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 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, 9, or 11 of Table 2d to this subpart, you have the option of utilizing an oil analysis program in order to extend the specified oil 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 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. If any of the limits are exceeded, the engine owner or operator must change the oil 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 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 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]

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### **§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]

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## CONTINUOUS COMPLIANCE REQUIREMENTS

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### **§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]

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### **§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, emergency demand response, and operation in

non-emergency situations for 50 hours per year, as described in paragraphs (f)(1) through (4) of this section, is prohibited. If you do not operate the engine according to the requirements in paragraphs (f) (1) through (4) of this section, 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 any combination of the purposes specified in paragraphs (f)(2)(i) through (iii) 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) Emergency stationary RICE may be operated for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see §63.14), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3.

(iii) Emergency stationary RICE may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.

(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 and emergency demand response 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 and emergency demand response 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]

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## NOTIFICATIONS, REPORTS, AND RECORDS

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### §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.

(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.

(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.

(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.

(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) 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).

(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]

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### **§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 (6) 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 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 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.

(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 (4) of this section and the information in paragraphs (d)(1) and (2) of this section.

(1) The total operating time of the stationary RICE at which the deviation occurred during the reporting period.

(2) Information on the number, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.

(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 (4) and (e)(1) through (12) of this section.

(1) The date and time that each malfunction started and stopped.

(2) The date, time, and duration 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, and whether each deviation occurred during a period of malfunction or during another period.

(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 breakdown 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 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) A brief description of the stationary RICE.

(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.

(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.

(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 or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii) or 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 and model year.

(iv) Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place.

(v) Hours operated for the purposes specified in §63.6640(f)(2)(ii) and (iii), including the date, start time, and end time for engine operation for the purposes specified in §63.6640(f)(2)(ii) and (iii).

(vi) Number of hours the engine is contractually obligated to be available for the purposes specified in §63.6640(f)(2)(ii) and (iii).

(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, 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) 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) (*www.epa.gov/cdx*). 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.

[69 FR 33506, June 15, 2004, as amended at 75 FR 9677, Mar. 3, 2010; 78 FR 6705, Jan. 30, 2013]

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### **§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 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 purposes specified in §63.6640(f)(2)(ii) or (iii) or §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]

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### **§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]

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## **OTHER REQUIREMENTS AND INFORMATION**

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### **§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]

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### **§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).

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### **§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 of 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)(2)(ii) or (iii) and §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 or 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 P of this part, that tests stationary RICE.

*Stoichiometric* means the theoretical air-to-fuel ratio required for complete combustion.

*Storage vessel with the potential for flash emissions* means any storage vessel that contains a hydrocarbon liquid with a stock tank gas-to-oil ratio equal to or greater than 0.31 cubic meters per liter and an American Petroleum Institute gravity equal to or greater than 40 degrees and an actual annual average hydrocarbon liquid throughput equal to or greater than 79,500 liters per day. Flash emissions occur when dissolved hydrocarbons in the fluid evolve from solution when the fluid pressure is reduced.

*Subpart* means 40 CFR part 63, subpart ZZZZ.



*Surface site* means any combination of one or more graded pad sites, gravel pad sites, foundations, platforms, or the immediate physical location upon which equipment is physically affixed.

*Two-stroke engine* means a type of engine which completes the power cycle in single crankshaft revolution by combining the intake and compression operations into one stroke and the power and exhaust operations into a second stroke. This system requires auxiliary scavenging and inherently runs lean of stoichiometric.

[69 FR 33506, June 15, 2004, as amended at 71 FR 20467, Apr. 20, 2006; 73 FR 3607, Jan. 18, 2008; 75 FR 9679, Mar. 3, 2010; 75 FR 51592, Aug. 20, 2010; 76 FR 12867, Mar. 9, 2011; 78 FR 6706, Jan. 30, 2013]

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**Table 1a to Subpart ZZZZ of Part 63—Emission Limitations for Existing, New, and Reconstructed Spark Ignition, 4SRB Stationary RICE >500 HP Located at a Major Source of HAP Emissions**

As stated in §§63.6600 and 63.6640, you must comply with the following emission limitations at 100 percent load plus or minus 10 percent for existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions:

For each . . .	You must meet the following emission limitation, except during periods of startup . . .	During periods of startup you must . . .
1. 4SRB stationary RICE	a. Reduce formaldehyde emissions by 76 percent or more. If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004, you may reduce formaldehyde emissions by 75 percent or more until June 15, 2007 or	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply. <sup>1</sup>
	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]

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**Table 1b to Subpart ZZZZ of Part 63—Operating Limitations for Existing, New, and Reconstructed SI 4SRB Stationary RICE >500 HP Located at a Major Source of HAP Emissions**

As stated in §§63.6600, 63.6603, 63.6630 and 63.6640, you must comply with the following operating limitations for existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions:

For each . . .	You must meet the following operating limitation, except during periods of startup . . .
1. existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions complying with the requirement to reduce formaldehyde emissions by 76 percent or more (or by 75 percent or more, if applicable) and using NSCR; or existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust to 350 ppbvd or less at 15 percent O <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 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	Comply with any operating limitations approved by the Administrator.
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 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]

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**Table 2a to Subpart ZZZZ of Part 63—Emission Limitations for New and Reconstructed 2SLB and Compression Ignition Stationary RICE >500 HP and New and Reconstructed 4SLB Stationary RICE ≥250 HP Located at a Major Source of HAP Emissions**

As stated in §§63.6600 and 63.6640, you must comply with the following emission limitations for new and reconstructed lean burn and new and reconstructed compression ignition stationary RICE at 100 percent load plus or minus 10 percent:

For each . . .	You must meet the following emission limitation, except during periods of startup . . .	During periods of startup you must . . .
1. 2SLB stationary RICE	a. Reduce CO emissions by 58 percent or more; or b. Limit concentration of formaldehyde in the stationary RICE exhaust to 12 ppmvd or less at 15 percent O <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	
	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	
	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]

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**Table 2b to Subpart ZZZZ of Part 63—Operating Limitations for New and Reconstructed 2SLB and CI Stationary RICE >500 HP Located at a Major Source of HAP Emissions, New and**

**Reconstructed 4SLB Stationary RICE  $\geq 250$  HP Located at a Major Source of HAP Emissions, Existing CI Stationary RICE  $> 500$  HP**

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  $\geq 250$  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 $\geq 250$ 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 $\geq 250$ HP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust and using an oxidation catalyst.	a. maintain your catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water at 100 percent load plus or minus 10 percent from the pressure drop across the catalyst that was measured during the initial performance test; and b. maintain the temperature of your stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 450 °F and less than or equal to 1350 °F. <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 oxidation catalyst	a. maintain your catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water from the pressure drop across the catalyst that was measured during the initial performance test; and b. maintain the temperature of your stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 450 °F and less than or equal to 1350 °F. <sup>1</sup>
3. New and reconstructed 2SLB and CI stationary RICE $> 500$ HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE $\geq 250$ HP located at a major source of HAP emissions complying with the requirement to reduce CO emissions and not using an oxidation catalyst; and New and reconstructed 2SLB and CI stationary RICE $> 500$ HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE $\geq 250$ HP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust and not using an oxidation catalyst; and existing CI stationary RICE $> 500$ HP complying with the requirement to limit or reduce the concentration of CO in the stationary RICE exhaust and not using an oxidation catalyst.	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.

[78 FR 6707, Jan. 30, 2013]

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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**

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  $\leq 500$  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>	a. Change oil and filter every 500 hours of operation or annually, whichever comes first. <sup>2</sup> b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary. <sup>3</sup>	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>
2. Non-Emergency, non-black start stationary CI RICE <100 HP	a. Change oil and filter every 1,000 hours of operation or annually, whichever comes first. <sup>2</sup> b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary. <sup>3</sup>	
3. Non-Emergency, non-black start CI stationary RICE $100 \leq \text{HP} \leq 300$ 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 $300 < \text{HP} \leq 500$	a. Limit concentration of CO in the stationary RICE exhaust to 49 ppmvd or less at 15 percent O <sub>2</sub> ; or b. Reduce CO emissions by 70 percent or more.	
5. Non-Emergency, non-black start stationary CI RICE >500 HP	a. Limit concentration of CO in the stationary RICE exhaust to 23 ppmvd or less at 15 percent O <sub>2</sub> ; or b. Reduce CO emissions by 70 percent or more.	
6. Emergency stationary SI RICE and black start stationary SI RICE. <sup>1</sup>	a. Change oil and filter every 500 hours of operation or annually, whichever comes first; <sup>2</sup> b. Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and	

	belts every 500 hours of operation or annually, whichever comes first, and replace as necessary. <sup>3</sup>	
7. Non-Emergency, non-black start stationary SI RICE <100 HP that are not 2SLB stationary RICE	a. Change oil and filter every 1,440 hours of operation or annually, whichever comes first; <sup>2</sup> b. Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary;	
	c. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary. <sup>3</sup>	
8. Non-Emergency, non-black start 2SLB stationary SI RICE <100 HP	a. Change oil and filter every 4,320 hours of operation or annually, whichever comes first; <sup>2</sup> b. Inspect spark plugs every 4,320 hours of operation or annually, whichever comes first, and replace as necessary;	
	c. Inspect all hoses and belts every 4,320 hours of operation or annually, 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 combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis	Limit concentration of CO in the stationary RICE exhaust to 177 ppmvd or 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.

[78 FR 6708, Jan. 30, 2013, as amended at 78 FR 14457, Mar. 6, 2013]

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**Table 2d to Subpart ZZZZ of Part 63—Requirements for Existing Stationary RICE Located at Area Sources of HAP Emissions**

As stated in §§63.6603 and 63.6640, you must comply with the following requirements for existing stationary RICE located at area sources of HAP emissions:

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
1. Non-Emergency, non-black start CI stationary RICE ≤300 HP	a. Change oil and filter every 1,000 hours of operation or annually, whichever comes first; <sup>1</sup> b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.
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 annually, whichever comes first; <sup>1</sup>	
	b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first,	

	and replace as necessary; and	
	c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.	
5. Emergency stationary SI RICE; black start stationary SI RICE; non-emergency, non-black start 4SLB stationary RICE >500 HP that operate 24 hours or less per calendar year; non-emergency, non-black start 4SRB stationary RICE >500 HP that operate 24 hours or less per calendar year. <sup>2</sup>	a. Change oil and filter every 500 hours of operation or annually, whichever comes first; <sup>1</sup> ; b. Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.	
6. Non-emergency, non-black start 2SLB stationary RICE	a. Change oil and filter every 4,320 hours of operation or annually, whichever comes first; <sup>1</sup>	
	b. Inspect spark plugs every 4,320 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 4,320 hours of operation or annually, whichever comes first, and replace as necessary.	
7. Non-emergency, non-black start 4SLB stationary RICE ≤500 HP	a. Change oil and filter every 1,440 hours of operation or annually, whichever comes first; <sup>1</sup>	
	b. Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.	
8. Non-emergency, non-black start 4SLB remote stationary RICE >500 HP	a. Change oil and filter every 2,160 hours of operation or annually, whichever comes first; <sup>1</sup>	

	b. Inspect spark plugs every 2,160 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 2,160 hours of operation or annually, whichever comes first, and replace as necessary.	
9. Non-emergency, non-black start 4SLB stationary RICE >500 HP that are not remote stationary RICE and that operate more than 24 hours per calendar year	Install an oxidation catalyst to reduce HAP emissions from the stationary RICE.	
10. Non-emergency, non-black start 4SRB stationary RICE ≤500 HP	a. Change oil and filter every 1,440 hours of operation or annually, whichever comes first; <sup>1</sup>	
	b. Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.	
11. Non-emergency, non-black start 4SRB remote stationary RICE >500 HP	a. Change oil and filter every 2,160 hours of operation or annually, whichever comes first; <sup>1</sup>	
	b. Inspect spark plugs every 2,160 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 2,160 hours of operation or annually, whichever comes first, and replace as necessary.	
12. Non-emergency, non-black start 4SRB stationary RICE >500 HP that are not remote stationary RICE and that operate more than 24 hours per calendar year	Install NSCR to reduce HAP emissions from the stationary RICE.	
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	a. Change oil and filter every 1,440 hours of operation or annually, whichever comes first; <sup>1</sup> b. Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first,	



	and replace as necessary; and	
	c. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.	

<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.

[78 FR 6709, Jan. 30, 2013]

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### 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 ≥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 ≥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≤HP≤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.

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**Table 4 to Subpart ZZZZ of Part 63—Requirements for Performance Tests**

As stated in §§63.6610, 63.6611, 63.6612, 63.6620, and 63.6640, you must comply with the following requirements for performance tests for stationary RICE:

For each . . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
1. 2SLB, 4SLB, and CI stationary RICE	a. reduce CO emissions	i. Measure the O <sub>2</sub> at the inlet and outlet of the control device; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A, or ASTM Method D6522-00 (Reapproved 2005). <sup>ac</sup>	(a) Measurements to determine O <sub>2</sub> must be made at the same time as the measurements for CO concentration.
		ii. Measure the CO at the inlet and the outlet of the control device	(1) ASTM D6522-00 (Reapproved 2005) <sup>abc</sup> or Method 10 of 40 CFR part 60, appendix A	(a) The CO concentration must be at 15 percent O <sub>2</sub> , dry basis.
2. 4SRB stationary RICE	a. reduce formaldehyde emissions	i. Select the sampling port location and the number of traverse points; and	(1) Method 1 or 1A of 40 CFR part 60, appendix A §63.7(d)(1) (i)	(a) sampling sites must be located at the inlet and outlet of the control device.
		ii. Measure O <sub>2</sub> at the inlet and outlet of the control device; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A, or ASTM Method D6522-00 (Reapproved 2005). <sup>a</sup>	(a) measurements to determine O <sub>2</sub> concentration must be made at the same time as the measurements for formaldehyde or THC concentration.
		iii. Measure moisture content at the inlet and outlet of the control device; and	(1) Method 4 of 40 CFR part 60, appendix A, or Test Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03. <sup>a</sup>	(a) measurements to determine moisture content must be made at the same time and location as the measurements for formaldehyde or THC concentration.
		iv. If demonstrating compliance with the formaldehyde percent reduction requirement, measure formaldehyde at the inlet and the outlet of the control device	(1) Method 320 or 323 of 40 CFR part 63, appendix A; or ASTM D6348-03, <sup>a</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	(a) 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.
		v. If demonstrating compliance with the THC percent reduction requirement, measure THC at the inlet and the outlet of the control device	(1) Method 25A, reported as propane, of 40 CFR part 60, appendix A	(a) 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.
	a. limit the concentration of	i. Select the sampling port	(1) Method 1 or 1A of 40 CFR part 60,	(a) if using a control device, the sampling site

3. Stationary RICE	formaldehyde or CO in the stationary RICE exhaust	location and the number of traverse points; and	appendix A §63.7(d)(1)(i)	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, or ASTM Method D6522-00 (Reapproved 2005). <sup>a</sup>	(a) 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; and	(1) Method 4 of 40 CFR part 60, appendix A, or Test Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03. <sup>a</sup>	(a) measurements to determine moisture content must be made at the same time and location as the measurements for formaldehyde or CO concentration.
		iv. Measure formaldehyde at the exhaust of the stationary RICE; or	(1) Method 320 or 323 of 40 CFR part 63, appendix A; or ASTM D6348-03, <sup>a</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	(a) 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.
		v. measure CO at the exhaust of the stationary RICE.	(1) Method 10 of 40 CFR part 60, appendix A, ASTM Method D6522-00 (2005), <sup>ac</sup> Method 320 of 40 CFR part 63, appendix A, or ASTM D6348-03. <sup>a</sup>	(a) 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.

<sup>a</sup>Incorporated by reference, see 40 CFR 63.14. You may also obtain copies from University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106.

<sup>b</sup>You may also use Method 320 of 40 CFR part 63, appendix A, or ASTM D6348-03.

<sup>c</sup>ASTM-D6522-00 (2005) may be used to test both CI and SI stationary RICE.

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#### **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:

<b>For each . . .</b>	<b>Complying with the requirement to . . .</b>	<b>You have demonstrated initial compliance if . . .</b>
1. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB	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

stationary RICE $\geq 250$ 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		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in §63.6625(b); and iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
2. Non-emergency stationary CI RICE $> 500$ HP located at a major source of HAP, and existing non-emergency stationary CI RICE $> 500$ HP located at an area source of HAP	a. Limit the concentration of CO, using oxidation catalyst, and using a CPMS	i. The average CO concentration determined from the initial performance test is less than or equal to the CO emission limitation; and
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in §63.6625(b); and
		iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
3. New or reconstructed non-emergency 2SLB stationary RICE $> 500$ HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE $\geq 250$ HP located at a major source of HAP, non-emergency stationary CI RICE $> 500$ HP located at a major source of HAP, and existing non-emergency stationary CI RICE $> 500$ HP located at an area source of HAP	a. Reduce CO emissions and not using oxidation catalyst	i. The average reduction of emissions of CO determined from the initial performance test achieves the required CO percent reduction; and ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in §63.6625(b); and iii. You have recorded the approved operating parameters (if any) during the initial performance test.
4. Non-emergency stationary CI RICE $> 500$ HP located at a major source of HAP, and existing non-emergency stationary CI RICE $> 500$ HP located at an area source of HAP	a. Limit the concentration of CO, and not using oxidation catalyst	i. The average CO concentration determined from the initial performance test is less than or equal to the CO emission limitation; and ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in §63.6625(b); and
		iii. You have recorded the approved operating parameters (if any) during the initial performance test.
5. New or reconstructed non-emergency 2SLB stationary RICE $> 500$ HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE $\geq 250$ HP located at a major source of HAP, non-emergency stationary CI RICE $> 500$ HP located at a major source of HAP, and existing non-emergency stationary CI RICE $> 500$ HP located at an area source of HAP	a. Reduce CO emissions, and using a CEMS	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 ii. You have conducted a performance evaluation of your CEMS using PS 3 and 4A of 40 CFR part 60, appendix B; and
		iii. The average reduction of CO calculated using §63.6620 equals or exceeds the required percent reduction. The initial test comprises the first 4-hour period after successful validation of the CEMS.

		Compliance is based on the average percent reduction achieved during the 4-hour period.
6. Non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Limit the concentration of CO, and using a CEMS	i. You have installed a CEMS to continuously monitor CO and either 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
		ii. You have conducted a performance evaluation of your CEMS using PS 3 and 4A of 40 CFR part 60, appendix B; and
		iii. The average concentration of CO calculated using §63.6620 is less than or equal to the CO emission limitation. The initial test comprises the first 4-hour period after successful validation of the CEMS. Compliance is based on the average concentration measured during the 4-hour period.
7. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and using NSCR	i. The average reduction of emissions of formaldehyde determined from the initial performance test is equal to or greater than the required formaldehyde percent reduction, or the average reduction of emissions of THC determined from the initial performance test is equal to or greater than 30 percent; and
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in §63.6625(b); and
		iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
8. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and not using NSCR	i. The average reduction of emissions of formaldehyde determined from the initial performance test is equal to or greater than the required formaldehyde percent reduction or the average reduction of emissions of THC determined from the initial performance test is equal to or greater than 30 percent; and
		ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in §63.6625(b); and
		iii. You have recorded the approved operating parameters (if any) during the initial performance test.
9. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and using	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;

a major source of HAP, and existing non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	oxidation catalyst or NSCR	and ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in §63.6625(b); and
		iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
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 $250 \leq \text{HP} \leq 500$ located at a major source of HAP, and existing non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and not using oxidation catalyst or NSCR	i. The average formaldehyde concentration, corrected to 15 percent O <sub>2</sub> , dry basis, from the three test runs is less than or equal to the formaldehyde emission limitation; and ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in §63.6625(b); and
		iii. You have recorded the approved operating parameters (if any) during the initial performance test.
11. Existing non-emergency stationary RICE $100 \leq \text{HP} \leq 500$ located at a major source of HAP, and existing non-emergency stationary CI RICE $300 < \text{HP} \leq 500$ 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 $100 \leq \text{HP} \leq 500$ located at a major source of HAP, and existing non-emergency stationary CI RICE $300 < \text{HP} \leq 500$ 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 that are operated more than 24 hours per calendar year	a. Install an oxidation catalyst	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 93 percent or more, or the average CO concentration is less than or equal to 47 ppmvd at 15 percent O <sub>2</sub> ;
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in §63.6625(b), or you have installed equipment to automatically shut down the engine if the catalyst inlet temperature exceeds 1350 °F.
14. Existing non-emergency 4SRB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year	a. Install NSCR	i. You have conducted an initial compliance demonstration as specified in §63.6630(e) to show that the average reduction of emissions of CO is 75 percent or more, the average CO concentration is less than or equal to 270 ppmvd at 15 percent O <sub>2</sub> , or the average reduction of emissions of THC is 30 percent or more;

		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in §63.6625(b), or you have installed equipment to automatically shut down the engine if the catalyst inlet temperature exceeds 1250 °F.
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[78 FR 6712, Jan. 30, 2013]

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**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 ii. Collecting the catalyst inlet temperature data according to §63.6625(b); and iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
2. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, and new or reconstructed non-emergency CI stationary RICE >500 HP located at a major source of HAP	a. Reduce CO emissions and not using an oxidation catalyst, and using a CPMS	i. Conducting semiannual performance tests for CO to demonstrate that the required CO percent reduction is achieved <sup>a</sup> ; and ii. Collecting the approved operating parameter (if any) data according to §63.6625(b); and iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the

		operating parameters established during the performance test.
3. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or 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	a. Reduce CO emissions or limit the concentration of CO in the stationary RICE exhaust, and using a CEMS	i. Collecting the monitoring data according to §63.6625 (a), reducing the measurements to 1-hour averages, calculating the percent reduction or concentration of CO emissions according to §63.6620; and ii. Demonstrating that the catalyst achieves the required percent reduction of CO emissions over the 4-hour averaging period, or that the emission remain at or below the CO concentration limit; and
		iii. Conducting an annual RATA of your CEMS using PS 3 and 4A of 40 CFR part 60, appendix B, as well as daily and periodic data quality checks in accordance with 40 CFR part 60, appendix F, procedure 1.
4. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and using NSCR	i. Collecting the catalyst inlet temperature data according to §63.6625(b); and
		ii. Reducing these data to 4-hour rolling averages; and
		iii. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		iv. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
5. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and not using NSCR	i. Collecting the approved operating parameter (if any) data according to §63.6625(b); and
		ii. Reducing these data to 4-hour rolling averages; and
		iii. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters



		established during the performance test.
6. Non-emergency 4SRB stationary RICE with a brake HP $\geq 5,000$ located at a major source of HAP	a. Reduce formaldehyde emissions	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 RICE exhaust and using oxidation catalyst or NSCR	i. Conducting semiannual performance tests for formaldehyde to demonstrate that your emissions remain at or below the formaldehyde concentration limit <sup>a</sup> ; and ii. Collecting the catalyst inlet temperature data according to §63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
8. 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 RICE exhaust and not using oxidation catalyst or NSCR	i. Conducting semiannual performance tests for formaldehyde to demonstrate that your emissions remain at or below the formaldehyde concentration limit <sup>a</sup> ; and ii. Collecting the approved operating parameter (if any) data according to §63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters

		established during the performance test.
9. Existing emergency and black start stationary RICE $\leq 500$ 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 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 $\leq 500$ HP located at an area source of HAP, existing non-emergency 4SLB and 4SRB stationary RICE $> 500$ HP located at an area source of HAP that operate 24 hours or less per calendar year, and existing non-emergency 4SLB and 4SRB stationary RICE $> 500$ HP located at an area source of HAP that are remote stationary RICE	a. Work or Management practices	i. Operating and maintaining the stationary RICE according to the manufacturer's emission-related operation and maintenance instructions; or ii. Develop and follow your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.
10. Existing stationary CI RICE $> 500$ HP that are not limited use stationary RICE	a. Reduce CO emissions, or limit the concentration of CO in the stationary RICE exhaust, and using oxidation catalyst	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
		ii. Collecting the catalyst inlet temperature data according to §63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
11. Existing stationary CI RICE $> 500$ HP that are not limited use stationary RICE	a. Reduce CO emissions, or limit the concentration of CO in the stationary RICE	i. Conducting performance tests every 8,760 hours or 3 years, whichever comes first, for CO or formaldehyde, as

	exhaust, and not using oxidation catalyst	appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and
		ii. Collecting the approved operating parameter (if any) data according to §63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
12. Existing limited use CI stationary RICE >500 HP	a. Reduce CO emissions or limit the concentration of CO in the stationary RICE exhaust, and using an oxidation catalyst	i. Conducting performance tests every 8,760 hours or 5 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and
		ii. Collecting the catalyst inlet temperature data according to §63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
13. 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, whichever comes

	of CO in the stationary RICE exhaust, and not using an oxidation catalyst	first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and
		ii. Collecting the approved operating parameter (if any) data according to §63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
14. Existing non-emergency 4SLB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year	a. Install an oxidation catalyst	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 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 450 °F and less than or equal to 1350 °F for the catalyst inlet temperature; or iii. Immediately shutting down the engine if the catalyst inlet temperature exceeds 1350 °F.
15. Existing non-emergency 4SRB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year	a. Install NSCR	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

	<p>percent or more; and either</p> <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>
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<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]

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#### 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 . . .
<p>1. Existing non-emergency, non-black start stationary RICE <math>100 \leq \text{HP} \leq 500</math> located at a major source of HAP; existing non-emergency, non-black start stationary CI RICE <math>&gt;500</math> HP located at a major source of HAP; existing non-emergency 4SRB stationary RICE <math>&gt;500</math> HP located at a major source of HAP; existing non-emergency, non-black start stationary CI RICE <math>&gt;300</math> HP located at an area source of HAP; new or reconstructed non-emergency stationary RICE <math>&gt;500</math> HP located at a major source of HAP; and new or reconstructed non-emergency 4SLB stationary RICE <math>250 \leq \text{HP} \leq 500</math> located at a major source of HAP</p>	<p>Compliance report</p>	<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>i. Semiannually according to the requirements in §63.6650(b)(1)-(5) for engines that are not limited use stationary RICE subject to numerical emission limitations; and</p> <p>ii. Annually according to the requirements in §63.6650(b)(6)-(9) for engines that are limited use stationary RICE subject to numerical emission limitations.</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</p>	<p>i. Semiannually according to the requirements in §63.6650(b).</p>

		CEMS and CPMS, was out-of-control, as specified in §63.8(c)(7), the information in §63.6650(e); or	
		c. If you had a malfunction during the reporting period, the information in §63.6650(c)(4).	i. Semiannually according to the requirements in §63.6650(b).
2. New or reconstructed non-emergency stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis	Report	a. The fuel flow rate of each fuel and the heating values that were used in your calculations, and you must demonstrate that the percentage of heat input provided by landfill gas or digester gas, is equivalent to 10 percent or more of the gross heat input on an annual basis; and	i. Annually, according to the requirements in §63.6650.
		b. The operating limits provided in your federally enforceable permit, and any deviations from these limits; and	i. See item 2.a.i.
		c. Any problems or errors suspected with the meters.	i. See item 2.a.i.
3. Existing non-emergency, non-black start 4SLB and 4SRB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that operate more than 24 hours per calendar year	Compliance report	a. The results of the annual compliance demonstration, if conducted during the reporting period.	i. Semiannually according to the requirements in §63.6650(b)(1)-(5).
4. Emergency stationary RICE that operate or are contractually obligated to be available for more than 15 hours per year for the purposes specified in §63.6640(f)(2)(ii) and (iii) or 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).

[78 FR 6719, Jan. 30, 2013]

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**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.	
§63.2	Definitions	Yes	Additional terms defined in §63.6675.
§63.3	Units and abbreviations	Yes.	
§63.4	Prohibited activities and circumvention	Yes.	
§63.5	Construction and reconstruction	Yes.	
§63.6(a)	Applicability	Yes.	
		Yes.	

§63.6(b)(1)-(4)	Compliance dates for new and reconstructed sources		
§63.6(b)(5)	Notification	Yes.	
§63.6(b)(6)	[Reserved]		
§63.6(b)(7)	Compliance dates for new and reconstructed area sources that become major sources	Yes.	
§63.6(c)(1)-(2)	Compliance dates for existing sources	Yes.	
§63.6(c)(3)-(4)	[Reserved]		
§63.6(c)(5)	Compliance dates for existing area sources that become major sources	Yes.	
§63.6(d)	[Reserved]		
§63.6(e)	Operation and maintenance	No.	
§63.6(f)(1)	Applicability of standards	No.	
§63.6(f)(2)	Methods for determining compliance	Yes.	
§63.6(f)(3)	Finding of compliance	Yes.	
§63.6(g)(1)-(3)	Use of alternate standard	Yes.	
§63.6(h)	Opacity and visible emission standards	No	Subpart ZZZZ does not contain opacity or visible emission standards.
§63.6(i)	Compliance extension procedures and criteria	Yes.	
§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 operation and maintenance	Yes.	
§63.8(c)(1)(i)	Routine and predictable SSM	No	
§63.8(c)(1)(ii)	SSM not in Startup Shutdown Malfunction Plan	Yes.	
§63.8(c)(1)(iii)	Compliance with operation and maintenance requirements	No	
§63.8(c)(2)-(3)	Monitoring system installation	Yes.	
§63.8(c)(4)	Continuous monitoring system (CMS) requirements	Yes	Except that subpart ZZZZ does not require Continuous Opacity Monitoring System (COMS).
§63.8(c)(5)	COMS minimum procedures	No	Subpart ZZZZ does not require COMS.
§63.8(c)(6)-(8)	CMS requirements	Yes	Except that subpart ZZZZ does not require COMS.
§63.8(d)	CMS quality control	Yes.	
§63.8(e)	CMS performance evaluation	Yes	Except for §63.8(e)(5)(ii), which applies to COMS.
		Except that §63.8(e) only applies as specified in §63.6645.	
§63.8(f)(1)-(5)	Alternative monitoring method	Yes	Except that §63.8(f)(4) only applies as specified in §63.6645.
§63.8(f)(6)	Alternative to relative accuracy test	Yes	Except that §63.8(f)(6) only applies as specified in §63.6645.
§63.8(g)	Data reduction	Yes	Except that provisions for COMS are not applicable. Averaging periods for demonstrating compliance are specified at §§63.6635 and 63.6640.
§63.9(a)	Applicability and State delegation of notification requirements	Yes.	
§63.9(b)(1)-(5)	Initial notifications	Yes	Except that §63.9(b)(3) is reserved.
		Except that §63.9(b) only applies as specified in §63.6645.	
§63.9(c)	Request for compliance extension	Yes	Except that §63.9(c) only applies as specified in §63.6645.
§63.9(d)	Notification of special compliance requirements for new sources	Yes	Except that §63.9(d) only applies as specified in §63.6645.
§63.9(e)	Notification of performance test	Yes	Except that §63.9(e) only applies as specified in §63.6645.
§63.9(f)	Notification of visible emission (VE)/opacity test	No	Subpart ZZZZ does not contain opacity or VE standards.
§63.9(g)(1)	Notification of performance evaluation	Yes	Except that §63.9(g) only applies as specified in §63.6645.
§63.9(g)(2)	Notification of use of COMS data	No	



			Subpart ZZZZ does not contain opacity or VE standards.
§63.9(g)(3)	Notification that criterion for alternative to RATA is exceeded	Yes	If alternative is in use.
		Except that §63.9(g) only applies as specified in §63.6645.	
§63.9(h)(1)-(6)	Notification of compliance status	Yes	Except that notifications for sources using a CEMS are due 30 days after completion of performance evaluations. §63.9(h)(4) is reserved.
			Except that §63.9(h) only applies as specified in §63.6645.
§63.9(i)	Adjustment of submittal deadlines	Yes.	
§63.9(j)	Change in previous information	Yes.	
§63.10(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.	
§63.10(b)(2)(xii)	Record when under waiver	Yes.	
§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	Yes.	Except that §63.10(e)(3)(i) (C) is reserved.
§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.	

[75 FR 9688, Mar. 3, 2010, as amended at 78 FR 6720, Jan. 30, 2013]

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## Appendix A—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).*







Appendix J

40 C.F.R. 60, Subpart III – *Standards of Performance for Stationary Compression Ignition  
Internal Combustion Engines*



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

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

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## WHAT THIS SUBPART COVERS

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### §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 (or the exemptions described in 40 CFR part 89, subpart J and 40 CFR part 94, subpart J, for engines that would need to be certified to standards in those parts), except that owners and operators, as well as manufacturers, may be eligible to request an exemption for national security.

(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]

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## EMISSION STANDARDS FOR MANUFACTURERS

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**§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 89.112, 40 CFR 89.113, 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 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 certification emission standards for new marine CI engines in 40 CFR 94.8, as applicable, for all pollutants, for the same displacement and maximum engine 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) may be certified to the provisions of 40 CFR part 94 or, if Table 1 to 40 CFR 1042.1 identifies 40 CFR part 1042 as being applicable, 40 CFR part 1042, if the engines will be used solely in either or both of the following locations:

(1) Areas of Alaska not accessible by the Federal Aid Highway System (FAHS); 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.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37967, June 28, 2011]

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**§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 certification emission standards for new nonroad CI engines for the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants 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 maximum engine power greater than or equal to 37 KW (50 HP), the certification emission standards for new nonroad CI engines for the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants 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 certification emission standards for new nonroad CI engines for engines of the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants.

(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 certification emission standards for new marine CI engines in 40 CFR 94.8, as applicable, for all pollutants, for the same displacement and maximum engine 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 internal combustion engines identified in paragraphs (a) and (c) may be certified to the provisions of 40 CFR part 94 or, if Table 2 to 40 CFR 1042.101 identifies Tier 3 standards as being applicable, the requirements applicable to Tier 3 engines in 40 CFR part 1042, if the engines will be used solely in either or both of the following locations:

(1) Areas of Alaska not accessible by the FAHS; 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]

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#### **§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]

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### **EMISSION STANDARDS FOR OWNERS AND OPERATORS**

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#### **§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 emission standards in 40 CFR 94.8(a)(1).

(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.

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#### **§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 emission standards in 40 CFR 94.8(a)(1).

(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]

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#### **§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]

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## FUEL REQUIREMENTS FOR OWNERS AND OPERATORS

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### **§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) Beginning October 1, 2007, owners and operators of stationary CI ICE subject to this subpart that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(a).

(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 80.510(b) 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 are no longer subject to the requirements of paragraph (a) of this section, and must use 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]

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## OTHER REQUIREMENTS FOR OWNERS AND OPERATORS

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### **§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.

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### **§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.

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## **COMPLIANCE REQUIREMENTS**

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### **§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 89, subpart B, or 40 CFR part 1039, subpart C, as applicable, and must test their engines as specified in those parts. For the purposes of this subpart, engines certified to the standards in table 1 to this subpart shall be subject to the same requirements as engines certified to the standards in 40 CFR part 89. For the purposes of this subpart, engines certified to the standards in table 4 to this subpart shall be subject to the same requirements as engines certified to the standards in 40 CFR part 89, 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 94, subpart C, or 40 CFR part 1042, subpart C, as applicable, and must test their engines as specified in 40 CFR part 94 or 1042, as applicable.

(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 89, 40 CFR part 94 or 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 parts 89, 94, 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 parts 89, 94, 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 parts 89, 94, 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 89.1003(b)(7), 40 CFR 94.1103(b)(3), 40 CFR 94.1103(b)(4) and 40 CFR 1068.240 are applicable to stationary CI engines replacing existing equipment that is less than 15 years old.

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### **§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 parts 89, 94 and/or 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 according to 40 CFR part 89 or 40 CFR part 94, as applicable, for the same model year and maximum engine power. 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, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (f)(1) through (3) of this section, is prohibited. If you do not operate the engine according to the requirements in paragraphs (f)(1) through (3) of this section, 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 any combination of the purposes specified in paragraphs (f)(2)(i) through (iii) 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) Emergency stationary ICE may be operated for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see §60.17), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3.

(iii) Emergency stationary ICE may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.

(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 and emergency demand response 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.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37970, June 28, 2011; 78 FR 6695, Jan. 30, 2013]

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## TESTING REQUIREMENTS FOR OWNERS AND OPERATORS

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### **§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.

(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 that are complying with the emission standards for new CI engines in 40 CFR 89.112 or 40 CFR 94.8, as applicable, must not exceed the NTE numerical requirements, rounded to the same number of decimal places as the applicable standard in 40 CFR 89.112 or 40 CFR 94.8, as applicable, determined from the following equation:

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

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Where:

STD = The standard specified for that pollutant in 40 CFR 89.112 or 40 CFR 94.8, as applicable.

Alternatively, stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR 89.112 or 40 CFR 94.8 may follow the testing procedures specified in §60.4213 of this subpart, as appropriate.

(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]

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### **§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:

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

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Where:

$C_i$  = concentration of NO<sub>x</sub> or PM at the control device inlet,

$C_o$  = concentration of NO<sub>x</sub> or PM at the control device outlet, and

R = percent reduction of NO<sub>x</sub> or PM emissions.

(2) You must normalize the NO<sub>x</sub> or PM concentrations at the inlet and outlet of the control device to a dry basis and to 15 percent oxygen (O<sub>2</sub>) using Equation 3 of this section, or an equivalent percent carbon dioxide (CO<sub>2</sub>) using the procedures described in paragraph (d)(3) of this section.

$$C_{adj} = C_d \frac{5.9}{20.9 - \% O_2} \quad (\text{Eq. 3})$$

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Where:

$C_{adj}$  = Calculated NO<sub>x</sub> or PM concentration adjusted to 15 percent O<sub>2</sub>.

$C_d$  = Measured concentration of NO<sub>x</sub> or PM, uncorrected.

5.9 = 20.9 percent O<sub>2</sub>–15 percent O<sub>2</sub>, the defined O<sub>2</sub> correction value, percent.

%O<sub>2</sub> = Measured O<sub>2</sub> concentration, dry basis, percent.

(3) If pollutant concentrations are to be corrected to 15 percent O<sub>2</sub> and CO<sub>2</sub> concentration is measured in lieu of O<sub>2</sub> concentration measurement, a CO<sub>2</sub> correction factor is needed. Calculate the CO<sub>2</sub> correction factor as described in paragraphs (d)(3)(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:

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

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Where:

F<sub>o</sub> = Fuel factor based on the ratio of O<sub>2</sub> 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 O<sub>2</sub>, 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:

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

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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 NO<sub>x</sub> and PM gas concentrations adjusted to 15 percent O<sub>2</sub> using CO<sub>2</sub> as follows:

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

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Where:

C<sub>adj</sub> = Calculated NO<sub>x</sub> or PM concentration adjusted to 15 percent O<sub>2</sub>.

C<sub>d</sub> = Measured concentration of NO<sub>x</sub> or PM, uncorrected.

%CO<sub>2</sub> = Measured CO<sub>2</sub> concentration, dry basis, percent.

(e) To determine compliance with the NO<sub>x</sub> mass per unit output emission limitation, convert the concentration of NO<sub>x</sub> in the engine exhaust using Equation 7 of this section:

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

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Where:

ER = Emission rate in grams per KW-hour.

C<sub>d</sub> = Measured NO<sub>x</sub> concentration in ppm.

1.912x10<sup>-3</sup> = Conversion constant for ppm NO<sub>x</sub> 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:



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

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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]

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## NOTIFICATION, REPORTS, AND RECORDS FOR OWNERS AND OPERATORS

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### **§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.

(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 or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §60.4211(f)(2)(ii) and (iii) or that operates for the purposes 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) Hours operated for the purposes specified in §60.4211(f)(2)(ii) and (iii), including the date, start time, and end time for engine operation for the purposes specified in §60.4211(f)(2)(ii) and (iii).

(vi) Number of hours the engine is contractually obligated to be available for the purposes specified in §60.4211(f)(2)(ii) and (iii).

(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) ([www.epa.gov/cdx](http://www.epa.gov/cdx)). 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.

[71 FR 39172, July 11, 2006, as amended at 78 FR 6696, Jan. 30, 2013]

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## SPECIAL REQUIREMENTS

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### **§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]

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#### **§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 areas of Alaska not accessible by the FAHS may meet the requirements of this subpart by manufacturing and installing engines meeting the requirements of 40 CFR parts 94 or 1042, as appropriate, rather than the otherwise applicable requirements of 40 CFR parts 89 and 1039, as indicated in sections §§60.4201(f) and 60.4202(g) of this subpart.

(c) Manufacturers, owners and operators of stationary CI ICE that are located in areas of Alaska not accessible by the FAHS 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 non-emergency CI ICE, the owner or operator of any such engine that was not certified as meeting Tier 4 PM standards, must meet the applicable requirements for PM in §§60.4201 and 60.4204 or install a PM emission control device that achieves PM emission reductions of 85 percent, or 60 percent for engines with a displacement of greater than or equal to 30 liters per cylinder, compared to engine-out emissions.

(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 areas of Alaska not accessible by the FAHS.

(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 areas of Alaska not accessible by the FAHS 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]

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#### **§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]

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### **GENERAL PROVISIONS**

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#### **§60.4218 What parts of the General Provisions apply to me?**

Table 8 to this subpart shows which parts of the General Provisions in §§60.1 through 60.19 apply to you.

#### DEFINITIONS

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#### **§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.

*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 94.9 (a).

*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)(2)(ii) or (iii) and §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.

*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]

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**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 (HP<11)	10.5 (7.8)			8.0 (6.0)	1.0 (0.75)
8≤KW<19 (11≤HP<25)	9.5 (7.1)			6.6 (4.9)	0.80 (0.60)
19≤KW<37 (25≤HP<50)	9.5 (7.1)			5.5 (4.1)	0.80 (0.60)
37≤KW<56 (50≤HP<75)			9.2 (6.9)		
56≤KW<75 (75≤HP<100)			9.2 (6.9)		
75≤KW<130 (100≤HP<175)			9.2 (6.9)		
130≤KW<225 (175≤HP<300)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
225≤KW<450 (300≤HP<600)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
450≤KW<560 (600≤HP<750)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
KW>560 (HP>750)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)

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**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]

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)				
Engine power	Model year(s)	NO <sub>x</sub> + NMHC	CO	PM
KW<8 (HP<11)	2008 +	7.5 (5.6)	8.0 (6.0)	0.40 (0.30)
8≤KW<19 (11≤HP<25)	2008 +	7.5 (5.6)	6.6 (4.9)	0.40 (0.30)
19≤KW<37 (25≤HP<50)	2008 +	7.5 (5.6)	5.5 (4.1)	0.30 (0.22)

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**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 (HP<100)	2011
75≤KW<130 (100≤HP<175)	2010
130≤KW≤560 (175≤HP≤750)	2009
KW>560 (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]

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**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)	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)
	2011 +	7.5 (5.6)		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)
	2011 +	7.5 (5.6)		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)
	2011 +	7.5 (5.6)		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)
	2011 + <sup>1</sup>	4.7 (3.5)		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)
	2011 + <sup>1</sup>	4.7 (3.5)		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)
	2010 + <sup>2</sup>	4.0 (3.0)		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)
	2009 + <sup>3</sup>	4.0 (3.0)		0.20 (0.15)
225≤KW<450 (300≤HP<600)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009 + <sup>3</sup>	4.0 (3.0)		0.20 (0.15)
450≤KW≤560 (600≤HP≤750)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009 +	4.0 (3.0)		0.20 (0.15)
KW>560 (HP>750)	2007 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2008 +	6.4 (4.8)		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.

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#### 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

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#### 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: ±2 percent of point.

<sup>2</sup>Torque: NFPA certified nameplate HP for 100 percent point. All points should be ±2 percent of engine percent load value.

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#### Table 7 to Subpart IIII of Part 60—Requirements for Performance Tests for Stationary CI ICE With a Displacement of ≥30 Liters per Cylinder

As stated in §60.4213, you must comply with the following requirements for performance tests for stationary CI ICE with a displacement of ≥30 liters per cylinder:

Each	Complying with the requirement to	You must	Using	According to the following requirements
1. Stationary CI internal combustion engine with a displacement of ≥ 30 liters per cylinder	a. Reduce NO <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 ≤6 inches in diameter may be sampled at a single point located at the duct centroid and ducts >6 and ≤12 inches in diameter may be sampled at 3 traverse points located at 16.7, 50.0, and 83.3% of the measurement line ('3-point long line'). If the duct is >12 inches in diameter <i>and</i> the sampling port location meets the two and half-diameter criterion of Section 11.1.1 of Method 1 of 40 CFR part 60, appendix A-1, the duct may be sampled at '3-point long line'; otherwise, conduct the stratification testing and select sampling points according to Section 8.1.2 of Method 7E of 40 CFR part 60, appendix A-4.
		ii. Measure O <sub>2</sub> at the inlet and outlet of the control device;	(1) Method 3, 3A, or 3B of 40 CFR part 60, appendix A-2	(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.
		iii. If necessary, measure moisture content at the inlet and outlet of the control device; and	(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)	(c) Measurements to determine moisture content must be made at the same time as the measurements for NO <sub>x</sub> concentration.
		iv. Measure NO <sub>x</sub> at the inlet and outlet of the control device.	(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	(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.

			(incorporated by reference, see §60.17)	
	b. Limit the concentration of NO <sub>x</sub> in the stationary CI internal combustion engine exhaust.	i. Select the sampling port location and number/location of traverse points at the exhaust of the stationary internal combustion engine;		(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 >6 and ≤12 inches in diameter may be sampled at 3 traverse points located at 16.7, 50.0, and 83.3% of the measurement line ('3-point long line'). If the duct is >12 inches in diameter <i>and</i> the sampling port location meets the two and half-diameter criterion of Section 11.1.1 of Method 1 of 40 CFR part 60, appendix A-1, the duct may be sampled at '3-point long line'; otherwise, conduct the stratification testing and select sampling points according to Section 8.1.2 of Method 7E of 40 CFR part 60, appendix A-4.
		ii. Determine the O <sub>2</sub> concentration of the stationary internal combustion engine exhaust at the sampling port location;	(1) Method 3, 3A, or 3B of 40 CFR part 60, appendix A-2	(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.
		iii. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and	(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)	(c) Measurements to determine moisture content must be made at the same time as the measurement for NO <sub>x</sub> concentration.
		iv. Measure NO <sub>x</sub> at the exhaust of the stationary internal combustion engine; if using a control device, the sampling site must be located at the outlet of the control device.	(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)	(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.
	c. Reduce PM emissions by 60 percent or more	i. Select the sampling port location and the number of traverse points;	(1) Method 1 or 1A of 40 CFR part 60, appendix A-1	(a) Sampling sites must be located at the inlet and outlet of the control device.
		ii. Measure O <sub>2</sub> at the inlet and outlet of the control device;	(2) Method 3, 3A, or 3B of 40 CFR part 60, appendix A-2	(b) Measurements to determine O <sub>2</sub> concentration must be made at the same time as the measurements for PM concentration.
		iii. If necessary, measure moisture content at the inlet and outlet of the control device; and	(3) Method 4 of 40 CFR part 60, appendix A-3	(c) Measurements to determine and moisture content must be made at the same time as the measurements for PM concentration.
		iv. Measure PM at the inlet and outlet of the control device.	(4) Method 5 of 40 CFR part 60, appendix A-3	(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 concentration of PM in the stationary CI internal combustion engine exhaust	i. Select the sampling port location and the number of traverse points;	(1) Method 1 or 1A of 40 CFR part 60, appendix A-1	(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 internal combustion engine exhaust at the sampling port location;	(2) Method 3, 3A, or 3B of 40 CFR part 60, appendix A-2	(b) Measurements to determine O <sub>2</sub> concentration must be made at the same time as the measurements for PM concentration.
		iii. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and	(3) Method 4 of 40 CFR part 60, appendix A-3	(c) Measurements to determine moisture content must be made at the same time as the measurements for PM concentration.
		iv. Measure PM at the exhaust of the stationary internal combustion engine.	(4) Method 5 of 40 CFR part 60, appendix A-3	(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.

[79 FR 11251, Feb. 27, 2014]

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[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	
§60.2	Definitions	Yes	Additional terms defined in §60.4219.



§60.3	Units and abbreviations	Yes	
§60.4	Address	Yes	
§60.5	Determination of construction or modification	Yes	
§60.6	Review of plans	Yes	
§60.7	Notification and Recordkeeping	Yes	Except that §60.7 only applies as specified in §60.4214(a).
§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	
§60.10	State Authority	Yes	
§60.11	Compliance with standards and maintenance requirements	No	Requirements are specified in subpart IIII.
§60.12	Circumvention	Yes	
§60.13	Monitoring requirements	Yes	Except that §60.13 only applies to stationary CI ICE with a displacement of (≥30 liters per cylinder.
§60.14	Modification	Yes	
§60.15	Reconstruction	Yes	
§60.16	Priority list	Yes	
§60.17	Incorporations by reference	Yes	
§60.18	General control device requirements	No	
§60.19	General notification and reporting requirements	Yes	

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**CERTIFICATE OF SERVICE**

I, Cynthia Hook, hereby certify that a copy of this permit has been mailed by first class mail to Domtar A.W. LLC, 285 Highway 71 South, Ashdown, AR, 71822, on this 10<sup>th</sup> day of February, 2016.



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Cynthia Hook, ASIII, Air Division