



INTERMEDIATE STATE PERMIT TO OPERATE

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to operate the air contaminant source(s) described below, in accordance with the laws, rules, and conditions set forth here in.

Intermediate Operating Permit Number: OP2009-037
Expiration Date: DEC 01 2014
Installation ID: 195-0046
Project Number: 2005-03-107

Installation Name and Address

Mid-Missouri Energy, Inc.
15311 N. Saline 65 Highway
Malta Bend, MO 65339
Saline County

Parent Company's Name and Address

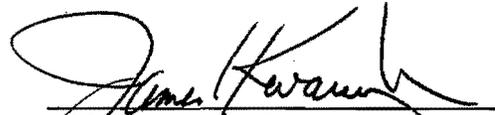
Mid-Missouri Energy, Inc.
15311 N. Saline 65 Highway
Malta Bend, Missouri 65339

Installation Description:

Mid-Missouri Energy, Inc. is an ethanol plant located in Malta Bend, MO. The facility began operation in 2005 and is located in Saline County which is an attainment area for all criteria pollutants.

DEC 02 2009

Effective Date



Director or Designee
Department of Natural Resources

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I. Installation Description and Equipment Listing

INSTALLATION DESCRIPTION

Mid-Missouri Energy, Inc. is an ethanol plant located in Malta Bend, MO. The facility began operation in 2005 and is located in Saline County which is an attainment area for all criteria pollutants.

Reported Air Pollutant Emissions, tons per year							
Year	Particulate Matter ≤ Ten Microns (PM ₁₀)	Sulfur Oxides (SO _x)	Nitrogen Oxides (NO _x)	Volatile Organic Compounds (VOC)	Carbon Monoxide (CO)	Particulate Matter ≤ 2.5 Microns (PM _{2.5})	Hazardous Air Pollutants (HAPs)
2008	43.46	0.41	36.27	31.96	64.50	8.42	-
2007	43.81	0.45	58.85	38.93	63.99	8.42	-
2006	40.97	0.44	58.06	44.75	61.63	30.55	1.91
2005	36.20	0.16	64.50	48.08	39.57	23.63	-

EMISSION UNITS WITH LIMITATIONS

The following list provides a description of the equipment at this installation which emits air pollutants and identified as having unit-specific emission limitations.

Emission Unit #	Description of Emission Unit
EU0001	Thermal Oxidizer/Heat Recovery Boiler/DDGS Dryer, EP#P10
EU0002	Grain Unloading, EP#P15
EU0003	Hammermill, EP#P30
EU0004	DDGS Loadout, EP#P90
EU0005	Truck Traffic on Haul Roads, EP#F100
EU0006	Cooling Tower, EP#P80
EU0007	DDGS Cooler Cyclone, EP#P70
EU0010	CO ₂ Fermentation Scrubber, EP#P40
EU0011	Denatured Ethanol Tank #1, EP#T61
EU0012	Denatured Ethanol Tank #2, EP#T62
EU0013	200-Proof Ethanol Storage Tank, EP#T63
EU0014	Denaturant Storage Tank, EP#T64
EU0015	190-Proof Ethanol Storage Tank, EP#T65
EU0016	Diesel Emergency Generator Engine
EU0017	Emergency Fire Water Pump Engine

EMISSION UNITS WITHOUT LIMITATIONS

The following list provides a description of the equipment, which does not have unit specific limitations at the time of permit issuance.

Description of Emission Source

Biomethanator Flare, EP#EP11 (Smokeless)
Truck VRS Loadout Flare (Combustion), EP#EP22 (Smokeless)
Denatured Ethanol Loadout to Rail, EP#F55
Truck VRS Loadout Flare (VOCs), EP#F56
VOC Equipment Leaks (Subpart VV), EP#F60
Distillation & other processes (to P10), EP#P50

DOCUMENTS INCORPORATED BY REFERENCE

This permit incorporates the following documents by reference:

Construction Permit No. 102003-011A, Revised December 13, 2007

II. Plant Wide Emission Limitations

The installation shall comply with each of the following emission limitations. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect on the date of permit issuance.

PERMIT CONDITION PW001

10 CSR 10-6.070 New Source Performance Regulations

40 CFR Part 60 Subpart VV Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for which Construction, Reconstruction, or Modification Commenced After January 5, 1981, and on or Before November 7, 2006

Emission Limitation:

- a) Each owner or operator subject to the provisions of this subpart shall demonstrate compliance with the requirements of §§60.482–1 through 60.482–10 or §60.480(e) for all equipment within 180 days of initial startup. [§60.482-1(a)]
- b) Compliance with §§60.482–1 to 60.482–10 will be determined by review of records and reports, review of performance test results, and inspection using the methods and procedures specified in §60.485. [§60.482-1(b)]
- c)
 - 1) An owner or operator may request a determination of equivalence of a means of emission limitation to the requirements of §§60.482–2, 60.482–3, 60.482–5, 60.482–6, 60.482–7, 60.482–8, and 60.482–10 as provided in §60.484. [§60.482-1(c)(1)]
 - 2) If the Administrator makes a determination that a means of emission limitation is at least equivalent to the requirements of §§60.482–2, 60.482–3, 60.482–5, 60.482–6, 60.482–7, 60.482–8, or 60.482–10, an owner or operator shall comply with the requirements of that determination. [§60.482-1(c)(2)]
- d) Equipment that is in vacuum service is excluded from the requirements of §§60.482–2 to 60.482–10 if it is identified as required in §60.486(e)(5). [§60.482-1(d)]
- e) Equipment that an owner or operator designates as being in VOC service less than 300 hours (hr)/yr is excluded from the requirements of §§60.482–2 through 60.482–10 if it is identified as required in §60.486(e)(6) and it meets any of the conditions specified in paragraphs (e)(1) through (3) of this section. [§60.482-1(e)]
 - 1) The equipment is in VOC service only during startup and shutdown, excluding startup and shutdown between batches of the same campaign for a batch process. [§60.482-1(e)(1)]
 - 2) The equipment is in VOC service only during process malfunctions or other emergencies. [§60.482-1(e)(2)]
 - 3) The equipment is backup equipment that is in VOC service only when the primary equipment is out of service. [§60.482-1(e)(3)]
- f)
 - 1) If a dedicated batch process unit operates less than 365 days during a year, an owner or operator may monitor to detect leaks from pumps and valves at the frequency specified in the following table instead of monitoring as specified in §§60.482–2, 60.482–7, and 60.483–2: [§60.482-1(f)(1)]

Operating time (percent of hours during year)	Equivalent monitoring frequency time in use		
	Monthly	Quarterly	Semiannually
0 to <25	Quarterly	Annually	Annually.
25 to <50	Quarterly	Semiannually	Annually.
50 to <75	Bimonthly	Three quarters	Semiannually.
75 to 100	Monthly	Quarterly	Semiannually.

- 2) Pumps and valves that are shared among two or more batch process units that are subject to this subpart may be monitored at the frequencies specified in paragraph (f)(1) of this section, provided the operating time of all such process units is considered. [§60.482-1(f)(2)]
- 3) The monitoring frequencies specified in paragraph (f)(1) of this section are not requirements for monitoring at specific intervals and can be adjusted to accommodate process operations. An owner or operator may monitor at any time during the specified monitoring period (e.g., month, quarter, year), provided the monitoring is conducted at a reasonable interval after completion of the last monitoring campaign. Reasonable intervals are defined in paragraphs (f)(3)(i) through (iv) of this section. [§60.482-1(f)(3)]
 - i) When monitoring is conducted quarterly, monitoring events must be separated by at least 30 calendar days. [§60.482-1(f)(3)(i)]
 - ii) When monitoring is conducted semiannually (i.e. , once every 2 quarters), monitoring events must be separated by at least 60 calendar days. [§60.482-1(f)(3)(ii)]
 - iii) When monitoring is conducted in 3 quarters per year, monitoring events must be separated by at least 90 calendar days. [§60.482-1(f)(3)(iii)]
 - iv) When monitoring is conducted annually, monitoring events must be separated by at least 120 calendar days. [§60.482-1(f)(3)(iv)]
- g) If the storage vessel is shared with multiple process units, the process unit with the greatest annual amount of stored materials (predominant use) is the process unit the storage vessel is assigned to. If the storage vessel is shared equally among process units, and one of the process units has equipment subject to subpart VVa of this part, the storage vessel is assigned to that process unit. If the storage vessel is shared equally among process units, none of which have equipment subject to subpart VVa of this part, the storage vessel is assigned to any process unit subject to this subpart. If the predominant use of the storage vessel varies from year to year, then the owner or operator must estimate the predominant use initially and reassess every 3 years. The owner or operator must keep records of the information and supporting calculations that show how predominant use is determined. All equipment on the storage vessel must be monitored when in VOC service. [§60.482-1(g)]

Operational Limitation:

Standards: Pumps in light liquid service.

- a)
 - 1) Each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in §60.485(b), except as provided in §60.482–1(c) and (f) and paragraphs (d), (e), and (f) of this section. A pump that begins operation in light liquid service after the initial startup date for the process unit must be monitored for the first time within 30 days after the end of its startup period, except for a pump that replaces a leaking pump and except as provided in §60.482–1(c) and (f) and paragraphs (d), (e), and (f) of this section. [§60.482-2(a)(1)]
 - 2) Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal, except as provided in §60.482–1(f). [§60.482-2(a)(2)]
- b)
 - 1) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected. [§60.482-2(b)(1)]

- 2) If there are indications of liquids dripping from the pump seal, the owner or operator shall follow the procedure specified in either paragraph (b)(2)(i) or (ii) of this section. This requirement does not apply to a pump that was monitored after a previous weekly inspection if the instrument reading for that monitoring event was less than 10,000 ppm and the pump was not repaired since that monitoring event. [§60.482-2(b)(2)]
 - i) Monitor the pump within 5 days as specified in §60.485(b). If an instrument reading of 10,000 ppm or greater is measured, a leak is detected. The leak shall be repaired using the procedures in paragraph (c) of this section. [§60.482-2(b)(2)(i)]
 - ii) Designate the visual indications of liquids dripping as a leak, and repair the leak within 15 days of detection by eliminating the visual indications of liquids dripping. [§60.482-2(b)(2)(ii)]
- c)
 - 1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482-9. [§60.482-2(c)(1)]
 - 2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. First attempts at repair include, but are not limited to, the practices described in paragraphs (c)(2)(i) and (ii) of this section, where practicable. [§60.482-2(c)(2)]
 - i) Tightening the packing gland nuts; [§60.482-2(c)(2)(i)]
 - ii) Ensuring that the seal flush is operating at design pressure and temperature. [§60.482-2(c)(2)(ii)]
- d) Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of paragraph (a) of this section, provided the requirements specified in paragraphs (d)(1) through (6) of this section are met. [§60.482-2(d)]
 - 1) Each dual mechanical seal system is—[§60.482-2(d)(1)]
 - i) Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure; or [§60.482-2(d)(1)(i)]
 - ii) Equipped with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed vent system to a control device that complies with the requirements of §60.482-10; or [§60.482-2(d)(1)(ii)]
 - iii) Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere. [§60.482-2(d)(1)(iii)]
 - 2) The barrier fluid system is in heavy liquid service or is not in VOC service. [§60.482-2(d)(2)]
 - 3) Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both. [§60.482-2(d)(3)]
 - 4) [§60.482-2(d)(4)]
 - i) Each pump is checked by visual inspection, each calendar week, for indications of liquids dripping from the pump seals. [§60.482-2(d)(4)(i)]
 - ii) If there are indications of liquids dripping from the pump seal at the time of the weekly inspection, the owner or operator shall follow the procedure specified in either paragraph (d)(4)(ii)(A) or (B) of this section. [§60.482-2(d)(4)(ii)]
 - (A) Monitor the pump within 5 days as specified in §60.485(b) to determine if there is a leak of VOC in the barrier fluid. If an instrument reading of 10,000 ppm or greater is measured, a leak is detected. [§60.482-2(d)(4)(ii)(A)]
 - (B) Designate the visual indications of liquids dripping as a leak. [§60.482-2(d)(4)(ii)(B)]
- 5)
 - i) Each sensor as described in paragraph (d)(3) of this section is checked daily or is equipped with an audible alarm. [§60.482-2(d)(5)(i)]
 - ii) The owner or operator determines, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both. [§60.482-2(d)(5)(ii)]
 - iii) If the sensor indicates failure of the seal system, the barrier fluid system, or both, based on the criterion established in paragraph (d)(5)(ii) of this section, a leak is detected. [§60.482-2(d)(5)(iii)]

- 6)
 - i) When a leak is detected pursuant to paragraph (d)(4)(ii)(A) of this section, it shall be repaired as specified in paragraph (c) of this section. [§60.482-2(d)(6)(i)]
 - ii) A leak detected pursuant to paragraph (d)(5)(iii) of this section shall be repaired within 15 days of detection by eliminating the conditions that activated the sensor. [§60.482-2(d)(6)(ii)]
 - iii) A designated leak pursuant to paragraph (d)(4)(ii)(B) of this section shall be repaired within 15 days of detection by eliminating visual indications of liquids dripping. [§60.482-2(d)(6)(iii)]
- e) Any pump that is designated, as described in §60.486(e)(1) and (2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraphs (a), (c), and (d) of this section if the pump: [§60.482-2(e)]
 - 1) Has no externally actuated shaft penetrating the pump housing. [§60.482-2(e)(1)]
 - 2) Is demonstrated to be operating with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background as measured by the methods specified in §60.485(c), and [§60.482-2(e)(2)]
 - 3) Is tested for compliance with paragraph (e)(2) of this section initially upon designation, annually, and at other times requested by the Administrator. [§60.482-2(e)(3)]
- f) If any pump is equipped with a closed vent system capable of capturing and transporting any leakage from the seal or seals to a process or to a fuel gas system or to a control device that complies with the requirements of §60.482-10, it is exempt from paragraphs (a) through (e) of this section. [§60.482-2(f)]
- g) Any pump that is designated, as described in §60.486(f)(1), as an unsafe-to-monitor pump is exempt from the monitoring and inspection requirements of paragraphs (a) and (d)(4) through (6) of this section if: [§60.482-2(g)]
 - 1) The owner or operator of the pump demonstrates that the pump is unsafe-to-monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (a) of this section; and [§60.482-2(g)(1)]
 - 2) The owner or operator of the pump has a written plan that requires monitoring of the pump as frequently as practicable during safe-to-monitor times but not more frequently than the periodic monitoring schedule otherwise applicable, and repair of the equipment according to the procedures in paragraph (c) of this section if a leak is detected. [§60.482-2(g)(2)]
- h) Any pump that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement of paragraphs (a)(2) and (d)(4) of this section, and the daily requirements of paragraph (d)(5) of this section, provided that each pump is visually inspected as often as practicable and at least monthly. [§60.482-2(h)]

Standards: Compressors.

- a) Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of VOC to the atmosphere, except as provided in §60.482-1(c) and paragraphs (h), (i), and (j) of this section. [§60.482-3(a)]
- b) Each compressor seal system as required in paragraph (a) shall be: [§60.482-3(b)]
 - 1) Operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or [§60.482-3(b)(1)]
 - 2) Equipped with a barrier fluid system degassing reservoir that is routed to a process or fuel gas system or connected by a closed vent system to a control device that complies with the requirements of §60.482-10; or [§60.482-3(b)(2)]
 - 3) Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere. [§60.482-3(b)(3)]
- c) The barrier fluid system shall be in heavy liquid service or shall not be in VOC service. [§60.482-3(c)]
- d) Each barrier fluid system as described in paragraph (a) shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both. [§60.482-3(d)]

- e)
 - 1) Each sensor as required in paragraph (d) shall be checked daily or shall be equipped with an audible alarm. [§60.482-3(e)(1)]
 - 2) The owner or operator shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both. [§60.482-3(e)(2)]
- f) If the sensor indicates failure of the seal system, the barrier system, or both based on the criterion determined under paragraph (e)(2), a leak is detected. [§60.482-3(f)]
- g)
 - 1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482-9. [§60.482-3(g)(1)]
 - 2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. [§60.482-3(g)(2)]
- h) A compressor is exempt from the requirements of paragraphs (a) and (b) of this section, if it is equipped with a closed vent system to capture and transport leakage from the compressor drive shaft back to a process or fuel gas system or to a control device that complies with the requirements of §60.482-10, except as provided in paragraph (i) of this section. [§60.482-3(h)]
- i) Any compressor that is designated, as described in §60.486(e) (1) and (2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraphs (a)–(h) if the compressor: [§60.482-3(i)]
 - 1) Is demonstrated to be operating with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the methods specified in §60.485(c); and [§60.482-3(i)(1)]
 - 2) Is tested for compliance with paragraph (i)(1) of this section initially upon designation, annually, and at other times requested by the Administrator. [§60.482-3(i)(2)]
- j) Any existing reciprocating compressor in a process unit which becomes an affected facility under provisions of §60.14 or §60.15 is exempt from paragraphs (a) through (e) and (h) of this section, provided the owner or operator demonstrates that recasting the distance piece or replacing the compressor are the only options available to bring the compressor into compliance with the provisions of paragraphs (a) through (e) and (h) of this section. [§60.482-3(j)]

Standards: Pressure relief devices in gas/vapor service.

- a) Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as determined by the methods specified in §60.485(c). [§60.482-4(a)]
- b)
 - 1) After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after the pressure release, except as provided in §60.482-9. [§60.482-4(b)(1)]
 - 2) No later than 5 calendar days after the pressure release, the pressure relief device shall be monitored to confirm the conditions of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, by the methods specified in §60.485(c). [§60.482-4(b)(2)]
- c) Any pressure relief device that is routed to a process or fuel gas system or equipped with a closed vent system capable of capturing and transporting leakage through the pressure relief device to a control device as described in §60.482-10 is exempted from the requirements of paragraphs (a) and (b) of this section. [§60.482-4(c)]
- d)
 - 1) Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the requirements of paragraphs (a) and (b) of this section, provided the owner or operator complies with the requirements in paragraph (d)(2) of this section. [§60.482-4(d)(1)]

- 2) After each pressure release, a new rupture disk shall be installed upstream of the pressure relief device as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in §60.482-9. [§60.482-4(d)(2)]

Standards: Sampling connection systems.

- a) Each sampling connection system shall be equipped with a closed-purge, closed-loop, or closed-vent system, except as provided in §60.482-1(c) and paragraph (c) of this section. [§60.482-5(a)]
- b) Each closed-purge, closed-loop, or closed-vent system as required in paragraph (a) of this section shall comply with the requirements specified in paragraphs (b)(1) through (4) of this section. [§60.482-5(b)]
 - 1) Gases displaced during filling of the sample container are not required to be collected or captured. [§60.482-5(b)(1)]
 - 2) Containers that are part of a closed-purge system must be covered or closed when not being filled or emptied. [§60.482-5(b)(2)]
 - 3) Gases remaining in the tubing or piping between the closed-purge system valve(s) and sample container valve(s) after the valves are closed and the sample container is disconnected are not required to be collected or captured. [§60.482-5(b)(3)]
 - 4) Each closed-purge, closed-loop, or closed-vent system shall be designed and operated to meet requirements in either paragraph (b)(4)(i), (ii), (iii), or (iv) of this section. [§60.482-5(b)(4)]
 - i) Return the purged process fluid directly to the process line. [§60.482-5(b)(4)(i)]
 - ii) Collect and recycle the purged process fluid to a process. [§60.482-5(b)(4)(ii)]
 - iii) Capture and transport all the purged process fluid to a control device that complies with the requirements of §60.482-10. [§60.482-5(b)(4)(iii)]
 - iv) Collect, store, and transport the purged process fluid to any of the following systems or facilities: [§60.482-5(b)(4)(iv)]
 - (A) A waste management unit as defined in §63.111, if the waste management unit is subject to and operated in compliance with the provisions of 40 CFR part 63, subpart G, applicable to Group 1 wastewater streams; [§60.482-5(b)(4)(iv)(A)]
 - (B) A treatment, storage, or disposal facility subject to regulation under 40 CFR part 262, 264, 265, or 266; [§60.482-5(b)(4)(iv)(B)]
 - (C) A facility permitted, licensed, or registered by a state to manage municipal or industrial solid waste, if the process fluids are not hazardous waste as defined in 40 CFR part 261; [§60.482-5(b)(4)(iv)(C)]
 - (D) A waste management unit subject to and operated in compliance with the treatment requirements of §61.348(a), provided all waste management units that collect, store, or transport the purged process fluid to the treatment unit are subject to and operated in compliance with the management requirements of §§61.343 through 61.347; or [§60.482-5(b)(4)(iv)(D)]
 - (E) A device used to burn off-specification used oil for energy recovery in accordance with 40 CFR part 279, subpart G, provided the purged process fluid is not hazardous waste as defined in 40 CFR part 261. [§60.482-5(b)(4)(iv)(E)]
- c) In situ sampling systems and sampling systems without purges are exempt from the requirements of paragraphs (a) and (b) of this section. [§60.482-5(c)]

Standards: Open-ended valves or lines.

- a)
 - 1) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in §60.482-1(c) and paragraphs (d) and (e) of this section. [§60.482-6(a)(1)]
 - 2) The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line. [§60.482-6(a)(2)]
- b) Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed. [§60.482-6(b)]

- c) When a double block-and-bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with paragraph (a) at all other times. [§60.482-6(c)]
- d) Open-ended valves or lines in an emergency shutdown system which are designed to open automatically in the event of a process upset are exempt from the requirements of paragraphs (a), (b) and (c) of this section. [§60.482-6(d)]
- e) Open-ended valves or lines containing materials which would autocatalytically polymerize or would present an explosion, serious overpressure, or other safety hazard if capped or equipped with a double block and bleed system as specified in paragraphs (a) through (c) of this section are exempt from the requirements of paragraphs (a) through (c) of this section. [§60.482-6(e)]

Standards: Valves in gas/vapor service and in light liquid service.

- a)
 - 1) Each valve shall be monitored monthly to detect leaks by the methods specified in §60.485(b) and shall comply with paragraphs (b) through (e) of this section, except as provided in paragraphs (f), (g), and (h) of this section, §60.482-1(c) and (f), and §§60.483-1 and 60.483-2. [§60.482-7(a)(1)]
 - 2) A valve that begins operation in gas/vapor service or light liquid service after the initial startup date for the process unit must be monitored according to paragraphs (a)(2)(i) or (ii), except for a valve that replaces a leaking valve and except as provided in paragraphs (f), (g), and (h) of this section, §60.482-1(c), and §§60.483-1 and 60.483-2. [§60.482-7(a)(2)]
 - i) Monitor the valve as in paragraph (a)(1) of this section. The valve must be monitored for the first time within 30 days after the end of its startup period to ensure proper installation. [§60.482-7(a)(2)(i)]
 - ii) If the valves on the process unit are monitored in accordance with §60.483-1 or §60.483-2, count the new valve as leaking when calculating the percentage of valves leaking as described in §60.483-2(b)(5). If less than 2.0 percent of the valves are leaking for that process unit, the valve must be monitored for the first time during the next scheduled monitoring event for existing valves in the process unit or within 90 days, whichever comes first. [§60.482-7(a)(2)(ii)]
- b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected. [§60.482-7(b)]
- c)
 - 1)
 - i) Any valve for which a leak is not detected for 2 successive months may be monitored the first month of every quarter, beginning with the next quarter, until a leak is detected. [§60.482-7(c)(1)(i)]
 - ii) As an alternative to monitoring all of the valves in the first month of a quarter, an owner or operator may elect to subdivide the process unit into 2 or 3 subgroups of valves and monitor each subgroup in a different month during the quarter, provided each subgroup is monitored every 3 months. The owner or operator must keep records of the valves assigned to each subgroup. [§60.482-7(c)(1)(ii)]
 - 2) If a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months. [§60.482-7(c)(2)]
- d)
 - 1) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in §60.482-9. [§60.482-7(d)(1)]
 - 2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. [§60.482-7(d)(2)]
- e) First attempts at repair include, but are not limited to, the following best practices where practicable: [§60.482-7(e)]
 - 1) Tightening of bonnet bolts; [§60.482-7(e)(1)]
 - 2) Replacement of bonnet bolts; [§60.482-7(e)(2)]
 - 3) Tightening of packing gland nuts; [§60.482-7(e)(3)]
 - 4) Injection of lubricant into lubricated packing. [§60.482-7(e)(4)]

- f) Any valve that is designated, as described in §60.486(e)(2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraph (a) if the valve: [§60.482-7(f)]
 - 1) Has no external actuating mechanism in contact with the process fluid, [§60.482-7(f)(1)]
 - 2) Is operated with emissions less than 500 ppm above background as determined by the method specified in §60.485(c), and [§60.482-7(f)(2)]
 - 3) Is tested for compliance with paragraph (f)(2) of this section initially upon designation, annually, and at other times requested by the Administrator. [§60.482-7(f)(3)]
- g) Any valve that is designated, as described in §60.486(f)(1), as an unsafe-to-monitor valve is exempt from the requirements of paragraph (a) if: [§60.482-7(g)]
 - 1) The owner or operator of the valve demonstrates that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (a), and [§60.482-7(g)(1)]
 - 2) The owner or operator of the valve adheres to a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times. [§60.482-7(g)(2)]
- h) Any valve that is designated, as described in §60.486(f)(2), as a difficult-to-monitor valve is exempt from the requirements of paragraph (a) if: [§60.482-7(h)]
 - 1) The owner or operator of the valve demonstrates that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface. [§60.482-7(h)(1)]
 - 2) The process unit within which the valve is located either becomes an affected facility through §60.14 or §60.15 or the owner or operator designates less than 3.0 percent of the total number of valves as difficult-to-monitor, and [§60.482-7(h)(2)]
 - 3) The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year. [§60.482-7(h)(3)]

Standards: Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and connectors.

- a) If evidence of a potential leak is found by visual, audible, olfactory, or any other detection method at pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and connectors, the owner or operator shall follow either one of the following procedures: [§60.482-8(a)]
 - 1) The owner or operator shall monitor the equipment within 5 days by the method specified in §60.485(b) and shall comply with the requirements of paragraphs (b) through (d) of this section. [§60.482-8(a)(1)]
 - 2) The owner or operator shall eliminate the visual, audible, olfactory, or other indication of a potential leak within 5 calendar days of detection. [§60.482-8(a)(2)]
- b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected. [§60.482-8(b)]
- c)
 - 1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482-9. [§60.482-8(c)(1)]
 - 2) The first attempt at repair shall be made no later than 5 calendar days after each leak is detected. [§60.482-8(c)(2)]
- d) First attempts at repair include, but are not limited to, the best practices described under §§60.482-2(c)(2) and 60.482-7(e). [§60.482-8(d)]

Standards: Delay of repair.

- a) Delay of repair of equipment for which leaks have been detected will be allowed if repair within 15 days is technically infeasible without a process unit shutdown. Repair of this equipment shall occur before the end of the next process unit shutdown. Monitoring to verify repair must occur within 15 days after startup of the process unit. [§60.482-9(a)]
- b) Delay of repair of equipment will be allowed for equipment which is isolated from the process and which does not remain in VOC service. [§60.482-9(b)]
- c) Delay of repair for valves will be allowed if: [§60.482-9(c)]

- 1) The owner or operator demonstrates that emissions of purged material resulting from immediate repair are greater than the fugitive emissions likely to result from delay of repair, and[§60.482-9(c)(1)]
- 2) When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with §60.482–10. [§60.482-9(c)(2)]
- d) Delay of repair for pumps will be allowed if: [§60.482-9(d)]
 - 1) Repair requires the use of a dual mechanical seal system that includes a barrier fluid system, and[§60.482-9(d)(1)]
 - 2) Repair is completed as soon as practicable, but not later than 6 months after the leak was detected. [§60.482-9(d)(2)]
- e) Delay of repair beyond a process unit shutdown will be allowed for a valve, if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next process unit shutdown will not be allowed unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown. [§60.482-9(e)]
- f) When delay of repair is allowed for a leaking pump or valve that remains in service, the pump or valve may be considered to be repaired and no longer subject to delay of repair requirements if two consecutive monthly monitoring instrument readings are below the leak definition. [§60.482-9(f)]

Standards: Closed vent systems and control devices.

- a) Owners or operators of closed vent systems and control devices used to comply with provisions of this subpart shall comply with the provisions of this section. [§60.482-10(a)]
- b) Vapor recovery systems (for example, condensers and absorbers) shall be designed and operated to recover the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume, whichever is less stringent. [§60.482-10(b)]
- c) Enclosed combustion devices shall be designed and operated to reduce the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent or to provide a minimum residence time of 0.75 seconds at a minimum temperature of 816 °C. [§60.482-10(c)]
- d) Flares used to comply with this subpart shall comply with the requirements of §60.18. [§60.482-10(d)]
- e) Owners or operators of control devices used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs. [§60.482-10(e)]
- f) Except as provided in paragraphs (i) through (k) of this section, each closed vent system shall be inspected according to the procedures and schedule specified in paragraphs (f)(1) and (f)(2) of this section. [§60.482-10(f)]
 - 1) If the vapor collection system or closed vent system is constructed of hard-piping, the owner or operator shall comply with the requirements specified in paragraphs (f)(1)(i) and (f)(1)(ii) of this section: [§60.482-10(f)(1)]
 - i) Conduct an initial inspection according to the procedures in §60.485(b); and [§60.482-10(f)(1)(i)]
 - ii) Conduct annual visual inspections for visible, audible, or olfactory indications of leaks. [§60.482-10(f)(1)(ii)]
 - 2) If the vapor collection system or closed vent system is constructed of ductwork, the owner or operator shall: [§60.482-10(f)(2)]
 - i) Conduct an initial inspection according to the procedures in §60.485(b); and [§60.482-10(f)(2)(i)]
 - ii) Conduct annual inspections according to the procedures in §60.485(b). [§60.482-10(f)(2)(ii)]
- g) Leaks, as indicated by an instrument reading greater than 500 parts per million by volume above background or by visual inspections, shall be repaired as soon as practicable except as provided in paragraph (h) of this section. [§60.482-10(g)]
 - 1) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected. [§60.482-10(g)(1)]
 - 2) Repair shall be completed no later than 15 calendar days after the leak is detected. [§60.482-10(g)(2)]

- h) Delay of repair of a closed vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next process unit shutdown. [§60.482-10(h)]
- i) If a vapor collection system or closed vent system is operated under a vacuum, it is exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section. [§60.482-10(i)]
- j) Any parts of the closed vent system that are designated, as described in paragraph (l)(1) of this section, as unsafe to inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section if they comply with the requirements specified in paragraphs (j)(1) and (j)(2) of this section: [§60.482-10(j)]
 - 1) The owner or operator determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with paragraphs (f)(1)(i) or (f)(2) of this section; and [§60.482-10(j)(1)]
 - 2) The owner or operator has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times. [§60.482-10(j)(2)]
- k) Any parts of the closed vent system that are designated, as described in paragraph (l)(2) of this section, as difficult to inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section if they comply with the requirements specified in paragraphs (k)(1) through (k)(3) of this section: [§60.482-10(k)]
 - 1) The owner or operator determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface; and [§60.482-10(k)(1)]
 - 2) The process unit within which the closed vent system is located becomes an affected facility through §§60.14 or 60.15, or the owner or operator designates less than 3.0 percent of the total number of closed vent system equipment as difficult to inspect; and [§60.482-10(k)(2)]
 - 3) The owner or operator has a written plan that requires inspection of the equipment at least once every 5 years. A closed vent system is exempt from inspection if it is operated under a vacuum. [§60.482-10(k)(3)]
- l) The owner or operator shall record the information specified in paragraphs (l)(1) through (l)(5) of this section. [§60.482-10(l)]
 - 1) Identification of all parts of the closed vent system that are designated as unsafe to inspect, an explanation of why the equipment is unsafe to inspect, and the plan for inspecting the equipment. [§60.482-10(l)(1)]
 - 2) Identification of all parts of the closed vent system that are designated as difficult to inspect, an explanation of why the equipment is difficult to inspect, and the plan for inspecting the equipment. [§60.482-10(l)(2)]
 - 3) For each inspection during which a leak is detected, a record of the information specified in §60.486(c). [§60.482-10(l)(3)]
 - 4) For each inspection conducted in accordance with §60.485(b) during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected. [§60.482-10(l)(4)]
 - 5) For each visual inspection conducted in accordance with paragraph (f)(1)(ii) of this section during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected. [§60.482-10(l)(5)]
- m) Closed vent systems and control devices used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them. [§60.482-10(m)]

Alternative Compliance Methods:

Alternative standards for valves—allowable percentage of valves leaking.

- a) An owner or operator may elect to comply with an allowable percentage of valves leaking of equal to or less than 2.0 percent. [§60.483-1(a)]
- b) The following requirements shall be met if an owner or operator wishes to comply with an allowable percentage of valves leaking: [§60.483-1(b)]

- 1) An owner or operator must notify the Administrator that the owner or operator has elected to comply with the allowable percentage of valves leaking before implementing this alternative standard, as specified in §60.487(d). [§60.483-1(b)(1)]
- 2) A performance test as specified in paragraph (c) of this section shall be conducted initially upon designation, annually, and at other times requested by the Administrator. [§60.483-1(b)(2)]
- 3) If a valve leak is detected, it shall be repaired in accordance with §60.482–7(d) and (e). [§60.483-1(b)(3)]
- c) Performance tests shall be conducted in the following manner: [§60.483-1(c)]
 - 1) All valves in gas/vapor and light liquid service within the affected facility shall be monitored within 1 week by the methods specified in §60.485(b). [§60.483-1(c)(1)]
 - 2) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected. [§60.483-1(c)(2)]
 - 3) The leak percentage shall be determined by dividing the number of valves for which leaks are detected by the number of valves in gas/vapor and light liquid service within the affected facility. [§60.483-1(c)(3)]
- d) Owners and operators who elect to comply with this alternative standard shall not have an affected facility with a leak percentage greater than 2.0 percent, determined as described in §60.485(h). [§60.483-1(d)]

Alternative standards for valves—skip period leak detection and repair.

- a)
 - 1) An owner or operator may elect to comply with one of the alternative work practices specified in paragraphs (b)(2) and (3) of this section. [§60.483-2(a)(1)]
 - 2) An owner or operator must notify the Administrator before implementing one of the alternative work practices, as specified in §60.487(d). [§60.483-2(a)(2)]
- b)
 - 1) An owner or operator shall comply initially with the requirements for valves in gas/vapor service and valves in light liquid service, as described in §60.482–7. [§60.483-2(b)(1)]
 - 2) After 2 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 1 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service. [§60.483-2(b)(2)]
 - 3) After 5 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 3 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service. [§60.483-2(b)(3)]
 - 4) If the percent of valves leaking is greater than 2.0, the owner or operator shall comply with the requirements as described in §60.482–7 but can again elect to use this section. [§60.483-2(b)(4)]
 - 5) The percent of valves leaking shall be determined as described in §60.485(h). [§60.483-2(b)(5)]
 - 6) An owner or operator must keep a record of the percent of valves found leaking during each leak detection period. [§60.483-2(b)(6)]
 - 7) A valve that begins operation in gas/vapor service or light liquid service after the initial startup date for a process unit following one of the alternative standards in this section must be monitored in accordance with §60.482–7(a)(2)(i) or (ii) before the provisions of this section can be applied to that valve. [§60.483-2(b)(7)]

Equivalence of means of emission limitation.

- a) Each owner or operator subject to the provisions of this subpart may apply to the Administrator for determination of equivalence for any means of emission limitation that achieves a reduction in emissions of VOC at least equivalent to the reduction in emissions of VOC achieved by the controls required in this subpart. [§60.484(a)]
- b) Determination of equivalence to the equipment, design, and operational requirements of this subpart will be evaluated by the following guidelines: [§60.484(b)]
 - 1) Each owner or operator applying for an equivalence determination shall be responsible for collecting and verifying test data to demonstrate equivalence of means of emission limitation. [§60.484(b)(1)]
 - 2) The Administrator will compare test data for demonstrating equivalence of the means of emission limitation to test data for the equipment, design, and operational requirements. [§60.484(b)(2)]

- 3) The Administrator may condition the approval of equivalence on requirements that may be necessary to assure operation and maintenance to achieve the same emission reduction as the equipment, design, and operational requirements. [§60.484(b)(3)]
- c) Determination of equivalence to the required work practices in this subpart will be evaluated by the following guidelines: [§60.484(c)]
 - 1) Each owner or operator applying for a determination of equivalence shall be responsible for collecting and verifying test data to demonstrate equivalence of an equivalent means of emission limitation. [§60.484(c)(1)]
 - 2) For each affected facility for which a determination of equivalence is requested, the emission reduction achieved by the required work practice shall be demonstrated. [§60.484(c)(2)]
 - 3) For each affected facility, for which a determination of equivalence is requested, the emission reduction achieved by the equivalent means of emission limitation shall be demonstrated. [§60.484(c)(3)]
 - 4) Each owner or operator applying for a determination of equivalence shall commit in writing to work practice(s) that provide for emission reductions equal to or greater than the emission reductions achieved by the required work practice. [§60.484(c)(4)]
 - 5) The Administrator will compare the demonstrated emission reduction for the equivalent means of emission limitation to the demonstrated emission reduction for the required work practices and will consider the commitment in paragraph (c)(4). [§60.484(c)(5)]
 - 6) The Administrator may condition the approval of equivalence on requirements that may be necessary to assure operation and maintenance to achieve the same emission reduction as the required work practice. [§60.484(c)(6)]
- d) An owner or operator may offer a unique approach to demonstrate the equivalence of any equivalent means of emission limitation. [§60.484(d)]
- e)
 - 1) After a request for determination of equivalence is received, the Administrator will publish a notice in the Federal Register and provide the opportunity for public hearing if the Administrator judges that the request may be approved. [§60.484(e)(1)]
 - 2) After notice and opportunity for public hearing, the Administrator will determine the equivalence of a means of emission limitation and will publish the determination in the Federal Register. [§60.484(e)(2)]
 - 3) Any equivalent means of emission limitations approved under this section shall constitute a required work practice, equipment, design, or operational standard within the meaning of section 111(h)(1) of the Clean Air Act. [§60.484(e)(3)]
- f)
 - 1) Manufacturers of equipment used to control equipment leaks of VOC may apply to the Administrator for determination of equivalence for any equivalent means of emission limitation that achieves a reduction in emissions of VOC achieved by the equipment, design, and operational requirements of this subpart. [§60.484(f)(1)]
 - 2) The Administrator will make an equivalence determination according to the provisions of paragraphs (b), (c), (d), and (e) of this section. [§60.484(f)(2)]

Test Methods/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 as specified in this section, except as provided in §60.8(b). [§60.485(a)]
- b) The owner or operator shall determine compliance with the standards in §§60.482–1 through 60.482–10, 60.483, and 60.484 as follows: [§60.485(b)]
 - 1) Method 21 shall be used to determine the presence of leaking sources. The instrument shall be calibrated before use each day of its use by the procedures specified in Method 21. The following calibration gases shall be used: [§60.485(b)(1)]
 - i) Zero air (less than 10 ppm of hydrocarbon in air); and [§60.485(b)(1)(i)]
 - ii) A mixture of methane or n-hexane and air at a concentration of about, but less than, 10,000 ppm methane or n-hexane. [§60.485(b)(1)(ii)]

- c) The owner or operator shall determine compliance with the no detectable emission standards in §§60.482–2(e), 60.482–3(i), 60.482–4, 60.482–7(f), and 60.482–10(e) as follows: [§60.485(c)]
- 1) The requirements of paragraph (b) shall apply. [§60.485(c)(1)]
 - 2) Method 21 shall be used to determine the background level. All potential leak interfaces shall be traversed as close to the interface as possible. The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance. [§60.485(c)(2)]
- d) The owner or operator shall test each piece of equipment unless he demonstrates that a process unit is not in VOC service, i.e., that the VOC content would never be reasonably expected to exceed 10 percent by weight. For purposes of this demonstration, the following methods and procedures shall be used: [§60.485(d)]
- 1) Procedures that conform to the general methods in ASTM E260–73, 91, or 96, E168–67, 77, or 92, E169–63, 77, or 93 (incorporated by reference—see §60.17) shall be used to determine the percent VOC content in the process fluid that is contained in or contacts a piece of equipment. [§60.485(d)(1)]
 - 2) Organic compounds that are considered by the Administrator to have negligible photochemical reactivity may be excluded from the total quantity of organic compounds in determining the VOC content of the process fluid. [§60.485(d)(2)]
 - 3) Engineering judgment may be used to estimate the VOC content, if a piece of equipment had not been shown previously to be in service. If the Administrator disagrees with the judgment, paragraphs (d) (1) and (2) of this section shall be used to resolve the disagreement. [§60.485(d)(3)]
- e) The owner or operator shall demonstrate that a piece of equipment is in light liquid service by showing that all the following conditions apply: [§60.485(e)]
- 1) The vapor pressure of one or more of the organic components is greater than 0.3 kPa at 20 °C (1.2 in. H₂O at 68 °F). Standard reference texts or ASTM D2879–83, 96, or 97 (incorporated by reference—see §60.17) shall be used to determine the vapor pressures. [§60.485(e)(1)]
 - 2) The total concentration of the pure organic components having a vapor pressure greater than 0.3 kPa at 20 °C (1.2 in. H₂O at 68 °F) is equal to or greater than 20 percent by weight. [§60.485(e)(2)]
 - 3) The fluid is a liquid at operating conditions. [§60.485(e)(3)]
- f) Samples used in conjunction with paragraphs (d), (e), and (g) of this section shall be representative of the process fluid that is contained in or contacts the equipment or the gas being combusted in the flare. [§60.485(f)]
- g) The owner or operator shall determine compliance with the standards of flares as follows: [§60.485(g)]
- 1) Method 22 shall be used to determine visible emissions. [§60.485(g)(1)]
 - 2) A thermocouple or any other equivalent device shall be used to monitor the presence of a pilot flame in the flare. [§60.485(g)(2)]
 - 3) The maximum permitted velocity for air assisted flares shall be computed using the following equation:

$$V_{\max} = K_1 + K_2 \times H_T$$

Where:

V_{\max} = Maximum permitted velocity, m/sec (ft/sec)

H_T = Net heating value of the gas being combusted, MJ/scm (Btu/scf).

K_1 = 8.706 m/sec (metric units)
= 28.56 ft/sec (English units)

K_2 = 0.7084 m⁴/(MJ-sec) (metric units)
= 0.087 ft⁴/(Btu-sec) (English units) [§60.485(g)(3)]

- 4) The net heating value (HT) of the gas being combusted in a flare shall be computed using the following equation:

$$H_T = K \times \sum_{i=1}^n (C_i \times H_i)$$

Where:

K = Conversion constant, 1.740×10^{-7} (g-mole)(MJ)/(ppm-scm-kcal) (metric units) = 4.674×10^{-6} [(g-mole)(Btu)/(ppm-scf-kcal)] (English units)

C_i = Concentration of sample component “i,” ppm

H_i = Net heat of combustion of sample component “i” at 25 °C and 760 mm Hg (77 °F and 14.7 psi), kcal/g-mole [§60.485(g)(4)]

- 5) Method 18 or ASTM D6420–99 (2004) (where the target compound(s) are those listed in Section 1.1 of ASTM D6420–99, and the target concentration is between 150 parts per billion by volume and 100 parts per million by volume) and ASTM D2504–67, 77 or 88 (Reapproved 1993) (incorporated by reference—see §60.17) shall be used to determine the concentration of sample component “i.” [§60.485(g)(5)]
- 6) ASTM D2382–76 or 88 or D4809–95 (incorporated by reference—see §60.17) shall be used to determine the net heat of combustion of component “i” if published values are not available or cannot be calculated. [§60.485(g)(6)]
- 7) Method 2, 2A, 2C, or 2D, as appropriate, shall be used to determine the actual exit velocity of a flare. If needed, the unobstructed (free) cross-sectional area of the flare tip shall be used. [§60.485(g)(7)]
- h) The owner or operator shall determine compliance with §60.483–1 or §60.483–2 as follows: [§60.485(h)]
 - 1) The percent of valves leaking shall be determined using the following equation:

$$\% \text{VL} = \frac{\text{VL} \times 100}{\text{VT}}$$

Where:

% VL = Percent leaking valves

VL = Number of valves found leaking

VT = The sum of the total number of valves monitored [§60.485(h)(1)]

- 2) The total number of valves monitored shall include difficult-to-monitor and unsafe-to-monitor valves only during the monitoring period in which those valves are monitored. [§60.485(h)(2)]
- 3) The number of valves leaking shall include valves for which repair has been delayed. [§60.485(h)(3)]
- 4) Any new valve that is not monitored within 30 days of being placed in service shall be included in the number of valves leaking and the total number of valves monitored for the monitoring period in which the valve is placed in service. [§60.485(h)(4)]
- 5) If the process unit has been subdivided in accordance with §60.482–7(c)(1)(ii), the sum of valves found leaking during a monitoring period includes all subgroups. [§60.485(h)(5)]
- 6) The total number of valves monitored does not include a valve monitored to verify repair. [§60.485(h)(6)]

Recordkeeping:

- a)
 - 1) Each owner or operator subject to the provisions of this subpart shall comply with the recordkeeping requirements of this section. [§60.486(a)(1)]
 - 2) An owner or operator of more than one affected facility subject to the provisions of this subpart may comply with the recordkeeping requirements for these facilities in one recordkeeping system if the system identifies each record by each facility. [§60.486(a)(2)]
- b) When each leak is detected as specified in §§60.482–2, 60.482–3, 60.482–7, 60.482–8, and 60.483–2, the following requirements apply: [§60.486(b)]
 - 1) A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment. [§60.486(b)(1)]
 - 2) The identification on a valve may be removed after it has been monitored for 2 successive months as specified in §60.482–7(c) and no leak has been detected during those 2 months. [§60.486(b)(2)]
 - 3) The identification on equipment except on a valve, may be removed after it has been repaired. [§60.486(b)(3)]
- c) When each leak is detected as specified in §§60.482–2, 60.482–3, 60.482–7, 60.482–8, and 60.483–2, the following information shall be recorded in a log and shall be kept for 2 years in a readily accessible location: [§60.486(c)]
 - 1) The instrument and operator identification numbers and the equipment identification number. [§60.486(c)(1)]
 - 2) The date the leak was detected and the dates of each attempt to repair the leak. [§60.486(c)(2)]

- 3) Repair methods applied in each attempt to repair the leak. [§60.486(c)(3)]
- 4) “Above 10,000” if the maximum instrument reading measured by the methods specified in §60.485(a) after each repair attempt is equal to or greater than 10,000 ppm. [§60.486(c)(4)]
- 5) “Repair delayed” and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak. [§60.486(c)(5)]
- 6) The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a process shutdown. [§60.486(c)(6)]
- 7) The expected date of successful repair of the leak if a leak is not repaired within 15 days. [§60.486(c)(7)]
- 8) Dates of process unit shutdowns that occur while the equipment is unrepaired. [§60.486(c)(8)]
- 9) The date of successful repair of the leak. [§60.486(c)(9)]
- d) The following information pertaining to the design requirements for closed vent systems and control devices described in §60.482–10 shall be recorded and kept in a readily accessible location: [§60.486(d)]
 - 1) Detailed schematics, design specifications, and piping and instrumentation diagrams. [§60.486(d)(1)]
 - 2) The dates and descriptions of any changes in the design specifications. [§60.486(d)(2)]
 - 3) A description of the parameter or parameters monitored, as required in §60.482–10(e), to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring. [§60.486(d)(3)]
 - 4) Periods when the closed vent systems and control devices required in §§60.482–2, 60.482–3, 60.482–4, and 60.482–5 are not operated as designed, including periods when a flare pilot light does not have a flame. [§60.486(d)(4)]
 - 5) Dates of startups and shutdowns of the closed vent systems and control devices required in §§60.482–2, 60.482–3, 60.482–4, and 60.482–5. [§60.486(d)(5)]
- e) The following information pertaining to all equipment subject to the requirements in §§60.482–1 to 60.482–10 shall be recorded in a log that is kept in a readily accessible location: [§60.486(e)]
 - 1) A list of identification numbers for equipment subject to the requirements of this subpart. [§60.486(e)(1)]
 - 2)
 - i) A list of identification numbers for equipment that are designated for no detectable emissions under the provisions of §§60.482–2(e), 60.482–3(i) and 60.482–7(f). [§60.486(e)(2)(i)]
 - ii) The designation of equipment as subject to the requirements of §60.482–2(e), §60.482–3(i), or §60.482–7(f) shall be signed by the owner or operator. Alternatively, the owner or operator may establish a mechanism with their permitting authority that satisfies this requirement. [§60.486(e)(2)(ii)]
 - 3) A list of equipment identification numbers for pressure relief devices required to comply with §60.482–4. [§60.486(e)(3)]
 - 4)
 - i) The dates of each compliance test as required in §§60.482–2(e), 60.482–3(i), 60.482–4, and 60.482–7(f). [§60.486(e)(4)(i)]
 - ii) The background level measured during each compliance test. [§60.486(e)(4)(ii)]
 - iii) The maximum instrument reading measured at the equipment during each compliance test. [§60.486(e)(4)(iii)]
 - 5) A list of identification numbers for equipment in vacuum service. [§60.486(e)(5)]
 - 6) A list of identification numbers for equipment that the owner or operator designates as operating in VOC service less than 300 hr/yr in accordance with §60.482–1(e), a description of the conditions under which the equipment is in VOC service, and rationale supporting the designation that it is in VOC service less than 300 hr/yr. [§60.486(e)(6)]
- f) The following information pertaining to all valves subject to the requirements of §60.482–7(g) and (h) and to all pumps subject to the requirements of §60.482–2(g) shall be recorded in a log that is kept in a readily accessible location: [§60.486(f)]
 - 1) A list of identification numbers for valves and pumps that are designated as unsafe-to-monitor, an explanation for each valve or pump stating why the valve or pump is unsafe-to-monitor, and the plan for monitoring each valve or pump. [§60.486(f)(1)]

- 2) A list of identification numbers for valves that are designated as difficult-to-monitor, an explanation for each valve stating why the valve is difficult-to-monitor, and the schedule for monitoring each valve. [§60.486(f)(2)]
- g) The following information shall be recorded for valves complying with §60.483–2: [§60.486(g)]
 - 1) A schedule of monitoring. [§60.486(g)(1)]
 - 2) The percent of valves found leaking during each monitoring period. [§60.486(g)(2)]
- h) The following information shall be recorded in a log that is kept in a readily accessible location: [§60.486(h)]
 - 1) Design criterion required in §§60.482–2(d)(5) and 60.482–3(e)(2) and explanation of the design criterion; and [§60.486(h)(1)]
 - 2) Any changes to this criterion and the reasons for the changes. [§60.486(h)(2)]
- i) The following information shall be recorded in a log that is kept in a readily accessible location for use in determining exemptions as provided in §60.480(d): [§60.486(i)]
 - 1) An analysis demonstrating the design capacity of the affected facility, [§60.486(i)(1)]
 - 2) A statement listing the feed or raw materials and products from the affected facilities and an analysis demonstrating whether these chemicals are heavy liquids or beverage alcohol, and [§60.486(i)(2)]
 - 3) An analysis demonstrating that equipment is not in VOC service. [§60.486(i)(3)]
- j) Information and data used to demonstrate that a piece of equipment is not in VOC service shall be recorded in a log that is kept in a readily accessible location. [§60.486(j)]
- k) The provisions of §60.7 (b) and (d) do not apply to affected facilities subject to this subpart. [§60.486(k)]

Reporting:

- a) Each owner or operator subject to the provisions of this subpart shall submit semiannual reports to the Administrator beginning six months after the initial startup date. [§60.487(a)]
- b) The initial semiannual report to the Administrator shall include the following information: [§60.487(b)]
 - 1) Process unit identification. [§60.487(b)(1)]
 - 2) Number of valves subject to the requirements of §60.482–7, excluding those valves designated for no detectable emissions under the provisions of §60.482–7(f). [§60.487(b)(2)]
 - 3) Number of pumps subject to the requirements of §60.482–2, excluding those pumps designated for no detectable emissions under the provisions of §60.482–2(e) and those pumps complying with §60.482–2(f). [§60.487(b)(3)]
 - 4) Number of compressors subject to the requirements of §60.482–3, excluding those compressors designated for no detectable emissions under the provisions of §60.482–3(i) and those compressors complying with §60.482–3(h). [§60.487(b)(4)]
- c) All semiannual reports to the Administrator shall include the following information, summarized from the information in §60.486: [§60.487(c)]
 - 1) Process unit identification. [§60.487(c)(1)]
 - 2) For each month during the semiannual reporting period, [§60.487(c)(2)]
 - i) Number of valves for which leaks were detected as described in §60.482–7(b) or §60.483–2, [§60.487(c)(2)(i)]
 - ii) Number of valves for which leaks were not repaired as required in §60.482–7(d)(1), [§60.487(c)(2)(ii)]
 - iii) Number of pumps for which leaks were detected as described in §60.482–2(b), (d)(4)(ii)(A) or (B), or (d)(5)(iii), [§60.487(c)(2)(iii)]
 - iv) Number of pumps for which leaks were not repaired as required in §60.482–2(c)(1) and (d)(6), [§60.487(c)(2)(iv)]
 - v) Number of compressors for which leaks were detected as described in §60.482–3(f), [§60.487(c)(2)(v)]
 - vi) Number of compressors for which leaks were not repaired as required in §60.482–3(g)(1), and [§60.487(c)(2)(vi)]
 - vii) The facts that explain each delay of repair and, where appropriate, why a process unit shutdown was technically infeasible. [§60.487(c)(2)(vii)]
 - 3) Dates of process unit shutdowns which occurred within the semiannual reporting period. [§60.487(c)(3)]

- 4) Revisions to items reported according to paragraph (b) if changes have occurred since the initial report or subsequent revisions to the initial report. [§60.487(c)(4)]
- d) An owner or operator electing to comply with the provisions of §§60.483-1 or 60.483-2 shall notify the Administrator of the alternative standard selected 90 days before implementing either of the provisions. [§60.487(d)]
- e) An owner or operator shall report the results of all performance tests in accordance with §60.8 of the General Provisions. The provisions of §60.8(d) do not apply to affected facilities subject to the provisions of this subpart except that an owner or operator must notify the Administrator of the schedule for the initial performance tests at least 30 days before the initial performance tests. [§60.487(e)]
- f) The requirements of paragraphs (a) through (c) of this section remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of the obligation to comply with the requirements of paragraphs (a) through (c) of this section, provided that they comply with the requirements established by the State. [§60.487(f)]
- g) If at any time the emission limits or operational limits should be exceeded or a malfunction occur which could possibly cause exceedance the permittee shall report to the Air Pollution Control Enforcement Section, P.O. Box 176, Jefferson City, MO 65101, no later than fifteen (15) days after the exceedance.
- h) The permittee shall report any deviations from the monitoring/recordkeeping and reporting requirements of this permit condition in the annual monitoring report and compliance certification required by Section V of this permit.

PERMIT CONDITION PW002

10 CSR 10-6.060 Construction Permits Required
Construction Permit No. 102003-011A, Revised December 13, 2007

Emission Limitation:

Special Condition No. 1.A: The permittee shall not cause or allow the emission of volatile organic compounds (VOC) in excess of 100 tons in any consecutive 12 month period.

Monitoring/Record Keeping:

1. The permittee shall maintain an accurate record of average monthly throughput for emission units: EU0001, EU0007 through EU0015, EP#F55, EP#F56, EP#F60, and EP#P50.
2. The monthly emissions of volatile organic compounds for each emission unit shall be calculated, using the average monthly throughput and emission factor. Attachment A or an equivalent form generated by the permittee may be used.
3. The permittee shall calculate their annual emission of volatile organic compounds by summing the monthly emissions of each emission unit for the last twelve months. The annual emission will be calculated each month using the most recent twelve months worth of monthly emission totals.
4. All records shall be kept for no less than five years and be made available immediately to any Missouri Department of Natural Resources' personnel upon request.

Reporting:

1. If at any time the yearly emission limit of 100 tons should be exceeded or a malfunction occur which could possibly cause exceedance the permittee shall report to the Air Pollution Control Enforcement Section, P.O. Box 176, Jefferson City, MO 65101, no later than ten (10) days after the exceedance.
2. The permittee shall report any deviations from the monitoring/recordkeeping and reporting requirements of this permit condition in the annual monitoring report and compliance certification required by Section V of this permit.

PERMIT CONDITION PW003

10 CSR 10-6.060 Construction Permits Required
Construction Permit No. 102003-011A, Revised December 13, 2007

Emission Limitation:

Special Condition No. 1.B: The permittee shall not cause or allow the emission of carbon monoxide (CO) in excess of 100 tons in any consecutive 12 month period.

Monitoring/Record Keeping:

1. The permittee shall maintain an accurate record of average monthly throughput for all CO emission units: EU0001, Biomethanator Flare EP#EP11 (Smokeless) and Truck VRS Loadout Flare (Combustion) EP#EP22 (Smokeless).
2. The monthly emissions of CO for each emission unit shall be calculated as demonstrated in Attachment B or an equivalent form generated by the permittee.
3. The permittee shall calculate their annual emission of CO by summing the monthly emissions of each emission unit for the last twelve months. The annual emission will be calculated each month using the most recent twelve months worth of monthly emission totals.
4. All records shall be kept for no less than five years and be made available immediately to any Missouri Department of Natural Resources' personnel upon request.

Reporting:

1. If at any time the yearly emission limit of 100 tons should be exceeded or a malfunction occur which could possibly cause exceedance the permittee shall report to the Air Pollution Control Enforcement Section, P.O. Box 176, Jefferson City, MO 65101, no later than ten (10) days after the exceedance.
2. The permittee shall report any deviations from the monitoring/recordkeeping and reporting requirements of this permit condition in the annual monitoring report and compliance certification required by Section V of this permit.

PERMIT CONDITION PW004

10 CSR 10-6.060 Construction Permits Required
Construction Permit No. 102003-011A, Revised December 13, 2007

Emission Limitation:

1. Special Condition No. 1.C: The permittee shall emit less than ten (10) tons of any individual Hazardous Air Pollutants (HAPs) from the installation in any consecutive 12-month period.
2. Special Condition No. 1.C: The permittee shall emit less than twenty-five (25) tons combined of Hazardous Air Pollutants (HAPs) from the installation in any consecutive 12-month period.

Monitoring/Record Keeping:

1. The permittee shall record the amount of each HAP emitting material used or produced each month.
2. The permittee shall calculate the monthly and rolling 12-month HAP emissions for each individual HAP and for total combined HAP using Attachments C & D or equivalent forms generated by the permittee.
3. The permittee shall maintain a complete set of Material Safety Data Sheets (MSDS) for all material used at the installation.
4. All records shall be kept for no less than five years and be made available immediately to any Missouri Department of Natural Resources' personnel upon request.

Reporting:

1. If at any time the yearly emission limit of 10 tons individual or 25 tons combined should be exceeded or a malfunction occur which could possibly cause exceedance the permittee shall report to the Air Pollution Control Enforcement Section, P.O. Box 176, Jefferson City, MO 65101, no later than ten (10) days after the exceedance.
2. The permittee shall report any deviations from the monitoring/recordkeeping and reporting requirements of this permit condition in the annual monitoring report and compliance certification required by Section V of this permit.

PERMIT CONDITION PW005

10 CSR 10-6.065(2)(C) and 10 CSR 10-6.065(5)(A) Voluntary Limitation(s)

Emission Limitation:

The permittee shall not cause or allow the emission of particulate matter of a diameter of less than or equal to 10 microns (PM₁₀) in excess of 100 tons in any consecutive 12 month period.

Monitoring/Record Keeping:

1. The permittee shall maintain an accurate record of average monthly throughput for emission units: EU0001 through EU0007.
2. The monthly emissions of particulate matter of a diameter of less than 10 microns for each emission unit shall be calculated, using the average monthly throughput, emission factor, and control device efficiency. Attachment E or an equivalent form generated by the permittee may be used.
3. The permittee shall calculate their annual emission of particulate matter of size 10 microns or less by summing the monthly emissions of each emission unit for the last twelve months. The annual emission will be calculated each month using the most recent twelve months worth of monthly emission totals.
4. All records shall be kept for no less than five years and be made available immediately to any Missouri Department of Natural Resources' personnel upon request.

Reporting:

1. If at any time the yearly emission limit of 100 tons should be exceeded or a malfunction occur which could possibly cause exceedance the permittee shall report to the Air Pollution Control Enforcement Section, P.O. Box 176, Jefferson City, MO 65101, no later than ten (10) days after the exceedance.
2. The permittee shall report any deviations from the monitoring/recordkeeping and reporting requirements of this permit condition in the annual monitoring report and compliance certification required by Section V of this permit.

III. Emission Unit Specific Emission Limitations

The installation shall comply with each of the following emission limitations. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect on the date of permit issuance.

EU0001 through EU0007		
Emission Unit	Description	2008 EIQ Reference #
EU0001	Thermal Oxidizer/Heat Recovery Boiler/DDGS Dryer	EP#P10
EU0002	Grain Unloading	EP#P15
EU0003	Hammermill	EP#P30
EU0004	DDGS Loadout	EP#P90
EU0005	Truck Traffic on Haul Roads	EP#F100
EU0006	Cooling Tower	EP#P80
EU0007	DDGS Cooler Cyclone	EP#P70

PERMIT CONDITION (EU0001 through EU0007) - 001
 10 CSR 10-6.220 Restriction of Emission of Visible Air Contaminants

Emission Limitation:

1. No owner or other person shall cause or permit to be discharged into the atmosphere from these emission units any visible emissions with an opacity greater than 20%.
2. Exception: A person may discharge into the atmosphere from any source of emissions for a period(s) aggregating not more than six (6) minutes in any sixty (60) minutes air contaminants with an opacity up to 60%.

Monitoring:

1. The permittee shall conduct opacity readings on these emission units using the procedures contained in USEPA Test Method 22. Readings are only required when the emission unit is operating and when the weather conditions allow. If no visible or other significant emissions are observed using these procedures, then no further observations would be required. For emission units with visible emissions perceived or believed to exceed the applicable opacity standard, the source representative would then conduct a Method 9 observation.
2. The following monitoring schedule must be maintained:
 - a) Weekly observations shall be conducted for a minimum of eight (8) consecutive weeks after permit issuance. Should no violation of this regulation be observed during this period then
 - b) Observations must be made once every two weeks for a period of eight (8) weeks. If a violation is noted, monitoring reverts to weekly. Should no violation of this regulation be observed during this period then
 - c) Observations must be made once per month. If a violation is noted, monitoring reverts to weekly.
3. If the source reverts to daily monitoring at any time, monitoring frequency will progress in an identical manner from the initial monitoring frequency.

Record Keeping:

1. The permittee shall maintain records of all observation results (see Attachments F & G, or equivalent forms generated by the permittee), noting:
 - a) Whether any air emissions (except for water vapor) were visible from the emission units,
 - b) All emission units from which visible emissions occurred, and
 - c) Whether the visible emissions were normal for the process.
2. The permittee shall maintain records of any equipment malfunctions.

3. The permittee shall maintain records of any USEPA Method 9 opacity test performed in accordance with this permit condition.
4. These records shall be made available immediately for inspection to the Department of Natural Resources personnel upon request.
5. All records must be maintained for five (5) years.

Reporting:

1. The permittee shall report to the Air Pollution Control Enforcement Section, P.O. Box 176, Jefferson City, MO 65101, no later than fifteen (15) days after any exceedance of any of the terms imposed by this regulation, or any malfunction which could possibly cause an exceedance of this regulation.
2. The permittee shall report any deviations from the monitoring/recordkeeping and reporting requirements of this permit condition in the annual monitoring report and compliance certification required by Section V of this permit.

PERMIT CONDITION EU0001-002

10 CSR 10-6.060 Construction Permits Required
Construction Permit No. 102003-011A, Revised December 13, 2007

Operational Limitation:

Special Condition No. 6.A: The thermal oxidizer (C10) must be in use at all times when the DDGS Dryer (P10) is in operation or any time that regulated volatile organic compounds (VOC) or hazardous air pollutant (HAP) emissions are possible. The thermal oxidizer shall be operated and maintained in accordance with the manufacturer's specifications.

Monitoring/Recordkeeping:

1. Special Condition No. 6.B: The operating temperature of the thermal oxidizer shall be continuously monitored and recorded during operation. The operating temperature of the thermal oxidizer shall be maintained on a rolling 3-hour average at no more than 50 degrees Fahrenheit below the average temperature of the oxidizer of 1503 degrees Fahrenheit. The thermal oxidizer shall be operated at all times during operation of the DDGS dryer or distillation equipment or any time that a regulated VOC or HAP emissions is possible. The most recent sixty (60) months of records shall be maintained on-site and shall be made immediately available to Missouri Department of Natural Resources' personnel upon request.
2. Special Condition No. 6.C: The permittee shall maintain an operating and maintenance log (using Attachment H or an equivalent from generated by the permittee) for the thermal oxidizer which shall include the following:
 - a) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - b) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
 - c) A written record of regular inspection schedule, the date and results of all inspections including any actions or maintenance activities that result from that inspection.
3. These records shall be made available immediately for inspection to the Department of Natural Resources personnel upon request.
4. All records must be maintained for five (5) years.

Reporting:

The permittee shall report any deviations from the operational limitations and monitoring/recordkeeping requirements of this permit condition in the annual monitoring report and compliance certification required by Section V of this permit.

PERMIT CONDITION EU0001-003

10 CSR 10-6.070 New Source Performance Regulations

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

Emission Limitation:

Standard for sulfur dioxide (SO₂).

- 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 SO₂ in excess of 87 ng/J (0.20 lb/MMBtu) or 10 percent (0.10) of the potential SO₂ emission rate (90 percent reduction) and the emission limit determined according to the following formula:

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

Where:

E_s= SO₂ emission limit, in ng/J or lb/MMBtu heat input;

K_a= 520 ng/J (or 1.2 lb/MMBtu);

K_b= 340 ng/J (or 0.80 lb/MMBtu);

H_a= Heat input from the combustion of coal, in J (MMBtu); and

H_b= 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. [§60.42b(a)]

- 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 SO₂ in excess of 87 ng/J (0.20 lb/MMBtu) or 20 percent (0.20) of the potential SO₂ 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. [§60.42b(b)]
- 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 SO₂ emissions, shall cause to be discharged into the atmosphere any gases that contain SO₂ in excess of 50 percent of the potential SO₂ emission rate (50 percent reduction) and that contain SO₂ in excess of the emission limit determined according to the following formula:

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

Where:

E_s= SO₂ emission limit, in ng/J or lb/MM Btu heat input;

K_c= 260 ng/J (or 0.60 lb/MMBtu);

K_d= 170 ng/J (or 0.40 lb/MMBtu);

H_c= Heat input from the combustion of coal, in J (MMBtu); and

H_d= 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. [§60.42b(c)]

- 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 SO₂ 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. [§60.42b(d)]
- 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; [§60.42b(d)(1)]
 - 2) Affected facilities located in a noncontinental area; or [§60.42b(d)(2)]
 - 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 [§60.42b(d)(3)]
 - 4) The affected facility burns coke oven gas alone or in combination with natural gas or very low sulfur distillate oil. [§60.42b(d)(4)]
- 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. [§60.42b(e)]
- 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. [§60.42b(f)]
- g) Except as provided in paragraph (i) of this section and §60.45b(a), the SO₂ emission limits and percent reduction requirements under this section apply at all times, including periods of startup, shutdown, and malfunction. [§60.42b(g)]
- h) Reductions in the potential SO₂ emission rate through fuel pretreatment are not credited toward the percent reduction requirement under paragraph (c) of this section unless: [§60.42b(h)]
- 1) Fuel pretreatment results in a 50 percent or greater reduction in potential SO₂ emissions and [§60.42b(h)(1)]
 - 2) Emissions from the pretreated fuel (without combustion or post-combustion SO₂ control) are equal to or less than the emission limits specified in paragraph (c) of this section. [§60.42b(h)(2)]
- 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 SO₂ control system is not being operated because of malfunction or maintenance of the SO₂ control system. [§60.42b(i)]
- 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 SO₂ emission rate or fuel oil sulfur content; or (2) maintaining fuel records as described in §60.49b(r). [§60.42b(j)]

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 SO₂ in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 8 percent (0.08) of the potential SO₂ 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. [§60.42b(k)(1)]
- 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 SO₂ emission rate of 140 ng/J (0.32 lb/MMBtu) heat input or less are exempt from the SO₂ emissions limit in paragraph (k)(1) of this section. [§60.42b(k)(2)]
- 3) Units that are located in a noncontinental area and that combust coal, oil, or natural gas shall not discharge any gases that contain SO₂ 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. [§60.42b(k)(3)]

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: [§60.43b(a)]
 - 1) 22 ng/J (0.051 lb/MMBtu) heat input, [§60.43b(a)(1)]
 - i) If the affected facility combusts only coal, or [§60.43b(a)(1)(i)]
 - 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. [§60.43b(a)(1)(ii)]
 - 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. [§60.43b(a)(2)]
 - 3) 86 ng/J (0.20 lb/MMBtu) heat input if the affected facility combusts coal or coal and other fuels and [§60.43b(a)(3)]
 - i) Has an annual capacity factor for coal or coal and other fuels of 30 percent (0.30) or less, [§60.43b(a)(3)(i)]
 - ii) Has a maximum heat input capacity of 73 MW (250 MMBtu/hr) or less, [§60.43b(a)(3)(ii)]
 - 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 [§60.43b(a)(3)(iii)]
 - iv) Construction of the affected facility commenced after June 19, 1984, and before November 25, 1986. [§60.43b(a)(3)(iv)]
 - 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 SO₂ emissions is not subject to the PM limits under §60.43b(a). [§60.43b(a)(4)]
- 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 SO₂ 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. [§60.43b(b)]

- 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: [§60.43b(c)]
 - 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. [§60.43b(c)(1)]
 - 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. [§60.43b(c)(2)]
- 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: [§60.43b(d)]
 - 1) 43 ng/J (0.10 lb/MMBtu) heat input; [§60.43b(d)(1)]
 - i) If the affected facility combusts only municipal-type solid waste; or [§60.43b(d)(1)(i)]
 - 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. [§60.43b(d)(1)(ii)]
 - 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 [§60.43b(d)(2)]
 - i) Has an annual capacity factor for municipal-type solid waste and other fuels of 30 percent (0.30) or less; [§60.43b(d)(2)(i)]
 - ii) Has a maximum heat input capacity of 73 MW (250 MMBtu/hr) or less; [§60.43b(d)(2)(ii)]
 - 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 [§60.43b(d)(2)(iii)]
 - iv) Construction of the affected facility commenced after June 19, 1984, but on or before November 25, 1986. [§60.43b(d)(2)(iv)]
- 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. [§60.43b(e)]
- 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 can combust 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. Owners and operators of an affected facility that elect to install, calibrate, maintain, and operate a continuous emissions monitoring system (CEMS) for measuring PM emissions according to the requirements of this subpart and are subject to a federally enforceable PM limit of 0.030 lb/MMBtu or less are exempt from the opacity standard specified in this paragraph. [§60.43b(f)]
- g) The PM and opacity standards apply at all times, except during periods of startup, shutdown, or malfunction. [§60.43b(g)]
- 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, [§60.43b(h)(1)]

- 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: [§60.43b(h)(2)]
 - 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 [§60.43b(h)(2)(i)]
 - 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. [§60.43b(h)(2)(ii)]
- 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. [§60.43b(h)(3)]
- 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. [§60.43b(h)(4)]
- 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 SO₂ or PM emissions is not subject to the PM limits in (h)(1) of this section. [§60.43b(h)(5)]
- 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 SO₂ or PM emissions is not subject to the PM limits in (h)(1) of this section. [§60.43b(h)(6)]

Standard for nitrogen oxides (NO_x).

- 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_x (expressed as NO₂) in excess of the following emission limits: [§60.44b(a)]

Fuel/steam generating unit type	Nitrogen oxide emission limits (expressed as NO ₂) 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 coal, oil, or natural gas shall cause to be discharged into the atmosphere from that affected facility any gases that contain NO_x in excess of a limit determined by the use of the following formula:

$$E_n = \frac{(EL_{go} \times H_{go}) + (EL_{ro} \times H_{ro}) + (EL_c \times H_c)}{(H_{go} + H_{ro} + H_c)}$$

Where:

E_n= NO_x emission limit (expressed as NO₂), 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). [§60.44b(b)]

- c) 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 coal or oil, or a mixture of these fuels with natural gas, and wood, municipal-type solid waste, or any other fuel shall cause to be discharged into the atmosphere any gases that contain NO_x in excess of the emission limit for the coal or oil, or mixtures of these fuels with natural gas combusted in the affected facility, as determined pursuant to paragraph (a) or (b) of this section, unless the affected facility has an annual capacity factor for coal or oil, or mixture of these fuels with 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 for coal, oil, or a mixture of these fuels with natural gas. [§60.44b(c)]

- 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 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_x in excess of 130 ng/J (0.30 lb/MMBtu) heat input unless the affected facility has an annual capacity factor for 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 for natural gas. [§60.44b(d)]
- 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 coal, oil, or natural gas with byproduct/waste shall cause to be discharged into the atmosphere any gases that contain NO_x 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:

$$E_n = \frac{(EL_{go} \times H_{go}) + (EL_{ro} \times H_{ro}) + (EL_c \times H_c)}{(H_{go} + H_{ro} + H_c)}$$

Where:

E_n= NO_x emission limit (expressed as NO₂), 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, distillate oil and gaseous byproduct/waste, J (MMBtu);

EL_{ro}= Appropriate emission limit from paragraph (a)(2) for combustion of residual oil and/or byproduct/waste, 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). [§60.44b(e)]

- 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_x 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_x 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. [§60.44b(f)]
 - 1) Any owner or operator of an affected facility petitioning for a facility-specific NO_x emission limit under this section shall: [§60.44b(f)(1)]
 - 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 [§60.44b(f)(1)(i)]
 - 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. [§60.44b(f)(1)(ii)]

- 2) The NO_x emission limits for natural gas or distillate oil in paragraph (a)(1) of this section or for residual oil in paragraph (a)(2) or (1)(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_x emission limit will be established at the NO_x 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_x emissions. In lieu of amending this subpart, a letter will be sent to the facility describing the facility-specific NO_x 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. [§60.44b(f)(2)]
- 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_x emission limit that applies specifically to that affected facility. The petition must include sufficient and appropriate data, as determined by the Administrator, on NO_x 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_x 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_x emission limits of this section. The NO_x emission limits for natural gas or distillate oil in paragraph (a)(1) of this section or for residual oil in paragraph (a)(2) or (1)(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_x 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. [§60.44b(g)]
- h) For purposes of paragraph (i) of this section, the NO_x standards under this section apply at all times including periods of startup, shutdown, or malfunction. [§60.44b(h)]
- 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. [§60.44b(i)]
- 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: [§60.44b(j)]
- 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; [§60.44b(j)(1)]
 - 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 [§60.44b(j)(2)]
 - 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. [§60.44b(j)(3)]
- 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_x emission limits under this section. [§60.44b(k)]
- 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 comes first, no owner or operator of an affected facility that commenced construction or reconstruction after July 9, 1997 shall cause to be discharged into the atmosphere from that affected facility any gases that contain NO_x (expressed as NO₂) in excess of the following limits: [§60.44b(l)]

- 1) If the affected facility combusts coal, oil, natural gas, a mixture of these fuels, or a mixture of these fuels with any other fuels: A limit of 86 ng/J (0.20 lb/MMBtu) heat input 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 facility to an annual capacity factor of 10 percent (0.10) or less for coal, oil, and natural gas; or [§60.44b(1)(1)]
- 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:

$$E_n = \frac{(0.1 \times H_{go}) + (0.2 \times H_r)}{(H_{go} + H_r)}$$

Where:

E_n = NO_x 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. [§60.44b(1)(2)]

- 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. [§60.44b(1)(3)]

Test Methods/Procedures:

Compliance and performance test methods and procedures for sulfur dioxide.

- a) The SO₂ 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 SO₂ control system maintenance. [§60.45b(a)]
- 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. [§60.45b(b)]
- c) The owner or operator of an affected facility shall conduct performance tests to determine compliance with the percent of potential SO₂ emission rate (% P_s) and the SO₂ emission rate (E_s) pursuant to §60.42b following the procedures listed below, except as provided under paragraph (d) and (k) of this section. [§60.45b(c)]
 - 1) The initial performance test shall be conducted over 30 consecutive operating days of the steam generating unit. Compliance with the SO₂ 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. [§60.45b(c)(1)]
 - 2) If only coal, only oil, or a mixture of coal and oil is combusted, the following procedures are used: [§60.45b(c)(2)]
 - i) The procedures in Method 19 of appendix A-7 of this part are used to determine the hourly SO₂ emission rate (E_{ho}) and the 30-day average emission rate (E_{ao}). The hourly averages used to compute the 30-day averages are obtained from the CEMS of §60.47b(a) or (b). [§60.45b(c)(2)(i)]
 - ii) The percent of potential SO₂ emission rate (%P_s) emitted to the atmosphere is computed using the following formula:

$$\%P_s = 100 \times \left(1 - \frac{\%R_g}{100}\right) \times \left(1 - \frac{\%R_f}{100}\right)$$

Where:

%P_s = Potential SO₂ emission rate, percent;

$\%R_g$ = SO₂ removal efficiency of the control device as determined by Method 19 of appendix A of this part, in percent; and

$\%R_f$ = SO₂ removal efficiency of fuel pretreatment as determined by Method 19 of appendix A of this part, in percent. [§60.45b(c)(2)(ii)]

- 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: [§60.45b(c)(3)]
- i) An adjusted hourly SO₂ emission rate (E_{ho}^o) 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_{ao}^o). The E_{ho}^o is computed using the following formula:

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

Where:

E_{ho}^o = Adjusted hourly SO₂ emission rate, ng/J (lb/MMBtu);

E_{ho} = Hourly SO₂ emission rate, ng/J (lb/MMBtu);

E_w = SO₂ concentration in fuels other than coal and oil combusted in the affected facility, as determined by the fuel sampling and analysis procedures in Method 19 of appendix A of this part, ng/J (lb/MMBtu). The value E_w for each fuel lot is used for each hourly average during the time that the lot is being combusted; and

X_k = 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. [§60.45b(c)(3)(i)]

- ii) To compute the percent of potential SO₂ emission rate ($\%P_s$), an adjusted $\%R_g$ ($\%R_{go}$) is computed from the adjusted E_{ao}^o from paragraph (b)(3)(i) of this section and an adjusted average SO₂ inlet rate (E_{ai}^o) using the following formula:

$$\%R_g^o = 100 \times \left(1 - \frac{E_{ao}^o}{E_{ai}^o}\right)$$

To compute E_{ai}^o , an adjusted hourly SO₂ inlet rate (E_{hi}^o) is used. The E_{hi}^o is computed using the following formula:

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

Where:

E_{hi}^o = Adjusted hourly SO₂ inlet rate, ng/J (lb/MMBtu); and

E_{hi} = Hourly SO₂ inlet rate, ng/J (lb/MMBtu). [§60.45b(c)(3)(ii)]

- 4) The owner or operator of an affected facility subject to paragraph (c)(3) of this section does not have to measure parameters E_w or X_k if the owner or operator elects to assume that $X_k = 1.0$. Owners or operators of affected facilities who assume $X_k = 1.0$ shall: [§60.45b(c)(4)]
- i) Determine $\%P_s$ following the procedures in paragraph (c)(2) of this section; and [§60.45b(c)(4)(i)]
- ii) Sulfur dioxide emissions (E_s) are considered to be in compliance with SO₂ emission limits under §60.42b. [§60.45b(c)(4)(ii)]
- 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 SO₂ emission rates of the coal or oil following the fuel sampling and analysis procedures in Method 19 of appendix A–7 of this part. [§60.45b(c)(5)]
- 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: [§60.45b(d)]

- 1) Conduct the initial performance test over 24 consecutive steam generating unit operating hours at full load; [§60.45b(d)(1)]
- 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. [§60.45b(d)(2)]
- 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. [§60.45b(e)]
- f) For the initial performance test required under §60.8, compliance with the SO₂ emission limits and percent reduction requirements under §60.42b is based on the average emission rates and the average percent reduction for SO₂ 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. [§60.45b(f)]
- g) After the initial performance test required under §60.8, compliance with the SO₂ emission limits and percent reduction requirements under §60.42b is based on the average emission rates and the average percent reduction for SO₂ 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 SO₂ are calculated to show compliance with the standard. [§60.45b(g)]
- h) Except as provided under paragraph (i) of this section, the owner or operator of an affected facility shall use all valid SO₂ 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 SO₂ 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. [§60.45b(h)]
- i) During periods of malfunction or maintenance of the SO₂ 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). [§60.45b(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 SO₂ 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). [§60.45b(j)]
- 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). [§60.45b(k)]

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_x emission standards under §60.44b apply at all times. [§60.46b(a)]
- 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. [§60.46b(b)]

- c) Compliance with the NO_x 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. [§60.46b(c)]
- 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: [§60.46b(d)]
- 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. [§60.46b(d)(1)]
 - 2) Method 5, 5B, or 17 of appendix A of this part shall be used to measure the concentration of PM as follows: [§60.46b(d)(2)]
 - i) Method 5 of appendix A of this part shall be used at affected facilities without wet flue gas desulfurization (FGD) systems; and [§60.46b(d)(2)(i)]
 - 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. [§60.46b(d)(2)(ii)]
 - iii) Method 5B of appendix A of this part is to be used only after wet FGD systems. [§60.46b(d)(2)(iii)]
 - 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. [§60.46b(d)(3)]
 - 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). [§60.46b(d)(4)]
 - 5) For determination of PM emissions, the oxygen (O₂) or CO₂ 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. [§60.46b(d)(5)]
 - 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: [§60.46b(d)(6)]
 - i) The O₂ or CO₂ measurements and PM measurements obtained under this section; [§60.46b(d)(6)(i)]
 - ii) The dry basis F factor; and [§60.46b(d)(6)(ii)]
 - iii) The dry basis emission rate calculation procedure contained in Method 19 of appendix A of this part. [§60.46b(d)(6)(iii)]
 - 7) Method 9 of appendix A of this part is used for determining the opacity of stack emissions. [§60.46b(d)(7)]
- e) To determine compliance with the emission limits for NO_x 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_x under §60.48(b). [§60.46b(e)]
- 1) For the initial compliance test, NO_x 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_x 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. [§60.46b(e)(1)]
 - 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_x 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_x emission data for the preceding 30 steam generating unit operating days. [§60.46b(e)(2)]

- 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_x 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_x emission data for the preceding 30 steam generating unit operating days. [§60.46b(e)(3)]
- 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_x standards in §60.44b through the use of a 30-day performance test. During periods when performance tests are not requested, NO_x 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_x 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_x emission data for the preceding 30 steam generating unit operating days. [§60.46b(e)(4)]
- 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. [§60.46b(e)(5)]
- f) To determine compliance with the emissions limits for NO_x required by §60.44b(a)(4) or §60.44b(1) 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: [§60.46b(f)]
 - 1) The owner or operator of an affected facility shall conduct the performance test required under §60.8 as follows: [§60.46b(f)(1)]
 - i) The emissions rate (E) of NO_x shall be computed using Equation 1 in this section:

$$E = E_{sg} + \left(\frac{H_g}{H_b}\right) \times (E_{sg} - E_g) \quad \text{Eq.1}$$

Where:

E = Emissions rate of NO_x 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. [§60.46b(f)(1)(i)]

- 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 O₂ concentration. [§60.46b(f)(1)(ii)]

- 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. [§60.46b(f)(1)(iii)]

- iv) Compliance with the emissions limits under §60.44b(a)(4) or §60.44b(1) is determined by the three-run average (nominal 1-hour runs) for the initial and subsequent performance tests; or [§60.46b(f)(1)(iv)]

- 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 O₂ 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. [§60.46b(f)(2)]

- 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. [§60.46b(g)]
- 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: [§60.46b(h)]
 - 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 [§60.46b(h)(1)]
 - 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. [§60.46b(h)(2)]
- 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). [§60.46b(i)]
- 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. [§60.46b(j)]
 - 1) Notify the Administrator one month before starting use of the system. [§60.46b(j)(1)]
 - 2) Notify the Administrator one month before stopping use of the system. [§60.46b(j)(2)]
 - 3) The monitor shall be installed, evaluated, and operated in accordance with §60.13 of subpart A of this part. [§60.46b(j)(3)]
 - 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. [§60.46b(j)(4)]
 - 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. [§60.46b(j)(5)]
 - 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. [§60.46b(j)(6)]
 - 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. [§60.46b(j)(7)]

- i) At least two data points per hour shall be used to calculate each 1-hour arithmetic average. [§60.46b(j)(7)(i)]
- 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. [§60.46b(j)(8)]
- 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. [§60.46b(j)(9)]
- 10) The CEMS shall be operated according to Performance Specification 11 in appendix B of this part. [§60.46b(j)(10)]
- 11) During the correlation testing runs of the CEMS required by Performance Specification 11 in appendix B of this part, PM and O₂(or CO₂) data shall be collected concurrently (or within a 30-to 60-minute period) by both the continuous emission monitors and performance tests conducted using the following test methods. [§60.46b(j)(11)]
 - 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 [§60.46b(j)(11)(i)]
 - ii) After July 1, 2010 or after Method 202 of appendix M of part 51 has been revised to minimize artifact measurement and notice of that change has been published in the Federal Register, whichever is later, for condensable PM emissions, Method 202 of appendix M of part 51 shall be used; and [§60.46b(j)(11)(ii)]
 - iii) For O₂(or CO₂), Method 3A or 3B of appendix A–2 of this part, as applicable shall be used. [§60.46b(j)(11)(iii)]
- 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 Audit's must be performed annually and Response Correlation Audits must be performed every 3 years. [§60.46b(j)(12)]
- 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. [§60.46b(j)(13)]
- 14) After July 1, 2011, within 90 days after completing a correlation testing run, the owner or operator of an affected facility shall either successfully enter the test data into EPA's WebFIRE data base located at <http://cfpub.epa.gov/oarweb/index.cfm?action=fire.main> or mail a copy to: United States Environmental Protection Agency; Energy Strategies Group; 109 TW Alexander DR; Mail Code: D243–01; RTP, NC 27711. [§60.46b(j)(14)]

Monitoring:

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 SO₂ standards in §60.42b shall install, calibrate, maintain, and operate CEMS for measuring SO₂ concentrations and either O₂ or CO₂ concentrations and shall record the output of the systems. For units complying with the percent reduction standard, the SO₂ and either O₂ or CO₂ concentrations shall both be monitored at the inlet and outlet of the SO₂ control device. If the owner or operator has installed and certified SO₂ and O₂ or CO₂ 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: [§60.47b(a)]
 - 1) When relative accuracy testing is conducted, SO₂ concentration data and CO₂ (or O₂) data are collected simultaneously; and [§60.47b(a)(1)]
 - 2) In addition to meeting the applicable SO₂ and CO₂ (or O₂) 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 [§60.47b(a)(2)]
- 3) The reporting requirements of §60.49b are met. SO₂ and CO₂ (or O₂) 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 SO₂ data have been bias adjusted according to the procedures of part 75 of this chapter. [§60.47b(a)(3)]
- 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 SO₂ emissions and percent reduction by: [§60.47b(b)]
- 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 SO₂ input rate, or [§60.47b(b)(1)]
 - 2) Measuring SO₂ according to Method 6B of appendix A of this part at the inlet or outlet to the SO₂ control system. An initial stratification test is required to verify the adequacy of the Method 6B of appendix A of this part sampling location. The stratification test shall consist of three paired runs of a suitable SO₂ and CO₂ measurement train operated at the candidate location and a second similar train operated according to the procedures in 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. [§60.47b(b)(2)]
 - 3) A daily SO₂ emission rate, ED, 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. [§60.47b(b)(3)]
 - 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. [§60.47b(b)(4)]
- 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. [§60.47b(c)]
- d) The 1-hour average SO₂ 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 SO₂ 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 SO₂ 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. [§60.47b(d)]
- e) The procedures under §60.13 shall be followed for installation, evaluation, and operation of the CEMS. [§60.47b(e)]
- 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. [§60.47b(e)(1)]
 - 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. [§60.47b(e)(2)]
 - 3) For affected facilities combusting coal or oil, alone or in combination with other fuels, the span value of the SO₂ CEMS at the inlet to the SO₂ control device is 125 percent of the maximum estimated hourly potential SO₂ emissions of the fuel combusted, and the span value of the CEMS at the outlet to the SO₂

control device is 50 percent of the maximum estimated hourly potential SO₂ emissions of the fuel combusted. Alternatively, SO₂ span values determined according to section 2.1.1 in appendix A to part 75 of this chapter may be used. [§60.47b(e)(3)]

- 4) As an alternative to meeting the 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: [§60.47b(e)(4)]
 - i) For all required CO₂ and O₂ monitors and for SO₂ and NO_x 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. [§60.47b(e)(4)(i)]
 - ii) For all required CO₂ and O₂ monitors and for SO₂ and NO_x 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 SO₂ and NO_x span values less than or equal to 30 ppm; and [§60.47b(e)(4)(ii)]
 - iii) For SO₂, CO₂, and O₂ monitoring systems and for NO_x 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 SO₂ (regardless of the SO₂ emission level during the RATA), and for NO_x when the average NO_x emission rate measured by the reference method during the RATA is less than 0.100 lb/MMBtu. [§60.47b(e)(4)(iii)]
- 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). [§60.47b(f)]

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), or (5) of this section who elects not to install 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 and shall comply with either paragraphs (a)(1), (a)(2), or (a)(3) of this section. If during the initial 60 minutes of observation all 6-minute averages are less than 10 percent and all individual 15-second observations are less than or equal to 20 percent, the observation period may be reduced from 3 hours to 60 minutes. [§60.48b(a)]

- 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. [§60.48b(a)(1)]
 - 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; [§60.48b(a)(1)(i)]
 - 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; [§60.48b(a)(1)(ii)]
 - 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 [§60.48b(a)(1)(iii)]
 - 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 30 calendar days from the date that the most recent performance test was conducted. [§60.48b(a)(1)(iv)]
- 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. [§60.48b(a)(2)]
 - 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 30 calendar days according to the requirements in §60.46d(d)(7). [§60.48b(a)(2)(i)]
 - ii) If no visible emissions are observed for 30 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. [§60.48b(a)(2)(ii)]
- 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. [§60.48b(a)(3)]

- 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_x standard under §60.44b shall comply with either paragraphs (b)(1) or (b)(2) of this section. [§60.48b(b)]
 - 1) Install, calibrate, maintain, and operate CEMS for measuring NO_x and O₂ (or CO₂) emissions discharged to the atmosphere, and shall record the output of the system; or [§60.48b(b)(1)]
 - 2) If the owner or operator has installed a NO_x 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. [§60.48b(b)(2)]
- 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. [§60.48b(c)]
- d) The 1-hour average NO_x emission rates measured by the continuous NO_x 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). [§60.48b(d)]
- e) The procedures under §60.13 shall be followed for installation, evaluation, and operation of the continuous monitoring systems. [§60.48b(e)]
 - 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. [§60.48b(e)(1)]
 - 2) For affected facilities combusting coal, oil, or natural gas, the span value for NO_x is determined using one of the following procedures: [§60.48b(e)(2)]
 - i) Except as provided under paragraph (e)(2)(ii) of this section, NO_x span values shall be determined as follows:

Fuel	Span values for NO _x (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. [§60.48b(e)(2)(i)]

- 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_x span values determined according to section 2.1.2 in appendix A to part 75 of this chapter. [§60.48b(e)(2)(ii)]
- 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. [§60.48b(e)(3)]
- f) When NO_x 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. [§60.48b(f)]

- 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: [§60.48b(g)]
- 1) Comply with the provisions of paragraphs (b), (c), (d), (e)(2), (e)(3), and (f) of this section; or [§60.48b(g)(1)]
 - 2) Monitor steam generating unit operating conditions and predict NO_x emission rates as specified in a plan submitted pursuant to §60.49b(c). [§60.48b(g)(2)]
- h) The owner or operator of a duct burner, as described in §60.41b, that is subject to the NO_x 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_x emissions. [§60.48b(h)]
- 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_x emissions. [§60.48b(i)]
- j) The owner or operator of an affected facility that meets the conditions in either paragraph (j)(1), (2), (3), (4), (5), or (6) of this section is not required to install or operate a COMS if: [§60.48b(j)]
- 1) The affected facility uses a PM CEMS to monitor PM emissions; or [§60.48b(j)(1)]
 - 2) The affected facility burns only liquid (excluding residual oil) or gaseous fuels with potential SO₂ emissions rates of 26 ng/J (0.060 lb/MMBtu) or less and does not use a post-combustion technology to reduce SO₂ 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 [§60.48b(j)(2)]
 - 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 SO₂ or PM emissions; or [§60.48b(j)(3)]
 - 4) The affected facility does not use post-combustion technology (except a wet scrubber) for reducing PM, SO₂, or carbon monoxide (CO) emissions, burns only gaseous fuels or fuel oils that contain less than or equal to 0.30 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 [§60.48b(j)(4)]
 - 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. [§60.48b(j)(4)(i)]
 - (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. [§60.48b(j)(4)(i)(A)]
 - (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). [§60.48b(j)(4)(i)(B)]
 - (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). [§60.48b(j)(4)(i)(C)]
 - (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. [§60.48b(j)(4)(i)(D)]
 - 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. [§60.48b(j)(4)(ii)]
 - 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.

[§60.48b(j)(4)(iii)]

- 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. [§60.48b(j)(4)(iv)]
- 5) The affected facility uses a bag leak detection system to monitor the performance of a fabric filter (baghouse) according to the most recent requirements in section §60.48Da of this part; or [§60.48b(j)(5)]
- 6) 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. [§60.48b(j)(6)]
- 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. [§60.48b(k)]

Recordkeeping/Reporting:

- 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: [§60.49b(a)]
 - 1) The design heat input capacity of the affected facility and identification of the fuels to be combusted in the affected facility; [§60.49b(a)(1)]
 - 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); [§60.49b(a)(2)]
 - 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 [§60.49b(a)(3)]
 - 4) Notification that an emerging technology will be used for controlling emissions of SO₂. 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. [§60.49b(a)(4)]
- b) The owner or operator of each affected facility subject to the SO₂, PM, and/or NO_x 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. [§60.49b(b)]
- c) The owner or operator of each affected facility subject to the NO_x 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:
[§60.49b(c)]

- 1) Identify the specific operating conditions to be monitored and the relationship between these operating conditions and NO_x 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 O₂ level); [§60.49b(c)(1)]
 - 2) Include the data and information that the owner or operator used to identify the relationship between NO_x emission rates and these operating conditions; and [§60.49b(c)(2)]
 - 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). [§60.49b(c)(3)]
- 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. [§60.49b(d)]
- 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. [§60.49b(d)(1)]
 - 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. [§60.49b(d)(2)]
- 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. [§60.49b(e)]
- 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. [§60.49b(f)]
- 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. [§60.49b(f)(1)]
 - i) Dates and time intervals of all opacity observation periods; [§60.49b(f)(1)(i)]
 - ii) Name, affiliation, and copy of current visible emission reading certification for each visible emission observer participating in the performance test; and [§60.49b(f)(1)(ii)]
 - iii) Copies of all visible emission observer opacity field data sheets; [§60.49b(f)(1)(iii)]
 - 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. [§60.49b(f)(2)]
 - i) Dates and time intervals of all visible emissions observation periods; [§60.49b(f)(2)(i)]
 - ii) Name and affiliation for each visible emission observer participating in the performance test; [§60.49b(f)(2)(ii)]
 - iii) Copies of all visible emission observer opacity field data sheets; and [§60.49b(f)(2)(iii)]

- 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. [§60.49b(f)(2)(iv)]
- 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. [§60.49b(f)(3)]
- g) Except as provided under paragraph (p) of this section, the owner or operator of an affected facility subject to the NO_x standards under §60.44b shall maintain records of the following information for each steam generating unit operating day: [§60.49b(g)]
 - 1) Calendar date; [§60.49b(g)(1)]
 - 2) The average hourly NO_x emission rates (expressed as NO₂) (ng/J or lb/MMBtu heat input) measured or predicted; [§60.49b(g)(2)]
 - 3) The 30-day average NO_x 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; [§60.49b(g)(3)]
 - 4) Identification of the steam generating unit operating days when the calculated 30-day average NO_x emission rates are in excess of the NO_x emissions standards under §60.44b, with the reasons for such excess emissions as well as a description of corrective actions taken; [§60.49b(g)(4)]
 - 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; [§60.49b(g)(5)]
 - 6) Identification of the times when emission data have been excluded from the calculation of average emission rates and the reasons for excluding data; [§60.49b(g)(6)]
 - 7) Identification of “F” factor used for calculations, method of determination, and type of fuel combusted; [§60.49b(g)(7)]
 - 8) Identification of the times when the pollutant concentration exceeded full span of the CEMS; [§60.49b(g)(8)]
 - 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 [§60.49b(g)(9)]
 - 10) Results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1 of this part. [§60.49b(g)(10)]
- 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. [§60.49b(h)]
 - 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). [§60.49b(h)(1)]
 - 2) Any affected facility that is subject to the NO_x standard of §60.44b, and that: [§60.49b(h)(2)]
 - i) Combusts natural gas, distillate oil, gasified coal, or residual oil with a nitrogen content of 0.3 weight percent or less; or [§60.49b(h)(2)(i)]
 - ii) Has a heat input capacity of 73 MW (250 MMBtu/hr) or less and is required to monitor NO_x emissions on a continuous basis under §60.48b(g)(1) or steam generating unit operating conditions under §60.48b(g)(2). [§60.49b(h)(2)(ii)]
 - 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). [§60.49b(h)(3)]
 - 4) For purposes of §60.48b(g)(1), excess emissions are defined as any calculated 30-day rolling average NO_x emission rate, as determined under §60.46b(e), that exceeds the applicable emission limits in §60.44b. [§60.49b(h)(4)]
- i) The owner or operator of any affected facility subject to the continuous monitoring requirements for NO_x under §60.48(b) shall submit reports containing the information recorded under paragraph (g) of this section. [§60.49b(i)]
- j) The owner or operator of any affected facility subject to the SO₂ standards under §60.42b shall submit reports. [§60.49b(j)]

- 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: [§60.49b(k)]
- 1) Calendar dates covered in the reporting period; [§60.49b(k)(1)]
 - 2) Each 30-day average SO₂ 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 SO₂ 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; [§60.49b(k)(2)]
 - 3) Each 30-day average percent reduction in SO₂ 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; [§60.49b(k)(3)]
 - 4) Identification of the steam generating unit operating days that coal or oil was combusted and for which SO₂ or diluent (O₂ or CO₂) data have not been obtained by an approved method for at least 75 percent of the operating hours in the steam generating unit operating day; justification for not obtaining sufficient data; and description of corrective action taken; [§60.49b(k)(4)]
 - 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; [§60.49b(k)(5)]
 - 6) Identification of “F” factor used for calculations, method of determination, and type of fuel combusted; [§60.49b(k)(6)]
 - 7) Identification of times when hourly averages have been obtained based on manual sampling methods; [§60.49b(k)(7)]
 - 8) Identification of the times when the pollutant concentration exceeded full span of the CEMS; [§60.49b(k)(8)]
 - 9) Description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specification 2 or 3; [§60.49b(k)(9)]
 - 10) Results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1 of this part; and [§60.49b(k)(10)]
 - 11) The annual capacity factor of each fired as provided under paragraph (d) of this section. [§60.49b(k)(11)]
- 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: [§60.49b(l)]
- 1) Calendar dates when the facility was in operation during the reporting period; [§60.49b(l)(1)]
 - 2) The 24-hour average SO₂ 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; [§60.49b(l)(2)]
 - 3) Identification of the steam generating unit operating days that coal or oil was combusted for which SO₂ or diluent (O₂ or CO₂) data have not been obtained by an approved method for at least 75 percent of the operating hours; justification for not obtaining sufficient data; and description of corrective action taken; [§60.49b(l)(3)]
 - 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; [§60.49b(l)(4)]
 - 5) Identification of “F” factor used for calculations, method of determination, and type of fuel combusted; [§60.49b(l)(5)]
 - 6) Identification of times when hourly averages have been obtained based on manual sampling methods; [§60.49b(l)(6)]

- 7) Identification of the times when the pollutant concentration exceeded full span of the CEMS; [§60.49b(1)(7)]
- 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 [§60.49b(1)(8)]
- 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). [§60.49b(1)(9)]
- m) For each affected facility subject to the SO₂ 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: [§60.49b(m)]
 - 1) The number of hourly averages available for outlet emission rates and inlet emission rates; [§60.49b(m)(1)]
 - 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; [§60.49b(m)(2)]
 - 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 [§60.49b(m)(3)]
 - 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. [§60.49b(m)(4)]
- n) If a percent removal efficiency by fuel pretreatment (i.e. , %Rf) is used to determine the overall percent reduction (i.e. , %Ro) under §60.45b, the owner or operator of the affected facility shall submit a signed statement with the report. [§60.49b(n)]
 - 1) Indicating what removal efficiency by fuel pretreatment (i.e. , %Rf) was credited during the reporting period; [§60.49b(n)(1)]
 - 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; [§60.49b(n)(2)]
 - 3) Documenting the transport of the fuel from the fuel pretreatment facility to the steam generating unit; and [§60.49b(n)(3)]
 - 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. [§60.49b(n)(4)]
- 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. [§60.49b(o)]
- 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: [§60.49b(p)]
 - 1) Calendar date; [§60.49b(p)(1)]
 - 2) The number of hours of operation; and [§60.49b(p)(2)]
 - 3) A record of the hourly steam load. [§60.49b(p)(3)]
- 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: [§60.49b(q)]
 - 1) The annual capacity factor over the previous 12 months; [§60.49b(q)(1)]
 - 2) The average fuel nitrogen content during the reporting period, if residual oil was fired; and [§60.49b(q)(2)]
 - 3) If the affected facility meets the criteria described in §60.44b(j), the results of any NO_x emission tests required during the reporting period, the hours of operation during the reporting period, and the hours of operation since the last NO_x emission test. [§60.49b(q)(3)]
- 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: [§60.49b(r)]

- 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 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 [§60.49b(r)(1)]
- 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: [§60.49b(r)(2)]
 - i) The potential sulfur emissions rate of the representative fuel mixture in ng/J heat input; [§60.49b(r)(2)(i)]
 - 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; [§60.49b(r)(2)(ii)]
 - iii) The ratio of different fuels in the mixture; and [§60.49b(r)(2)(iii)]
 - iv) The owner or operator can petition the Administrator to approve monthly or quarterly sampling in place of weekly sampling. [§60.49b(r)(2)(iv)]
- s) The owner or operator of an affected facility may submit electronic quarterly reports for SO₂ and/or NO_x 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. [§60.49b(v)]
- t) 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. [§60.49b(w)]
- u) The permittee shall report to the Air Pollution Control Enforcement Section, P.O. Box 176, Jefferson City, MO 65101, no later than fifteen (15) days after any exceedance of any of the terms imposed by this regulation, or any malfunction which could possibly cause an exceedance of this regulation.
- v) The permittee shall report any deviations from the monitoring/recordkeeping and reporting requirements of this permit condition in the annual monitoring report and compliance certification required by Section V of this permit.

PERMIT CONDITION (EU0002 through EU0004) - 002

10 CSR 10-6.060 Construction Permits Required
Construction Permit No. 102003-011A, Revised December 13, 2007

Operational Limitation:

1. Special Condition No. 4.A: The baghouses listed below must be in use at all times when the associated equipment is in operation:

Control ID No.	Emission Point/Stack ID	Emission Unit Controlled
C15	S15	Grain Unloading
C30	S30	Hammermill
C90	S90	DDGS Loading

2. Special Condition No. 4.B: The baghouses and any related instrumentation or equipment shall be operated and maintained in accordance with the manufacturer's specifications. The baghouses shall be equipped with a gauge or meter that indicates the pressure drop across each baghouse. This gauge or meter shall be located in such a way it may be easily observed by Department of Natural Resources' employees.
3. Special Condition No. 4.C: Replacement bags for all baghouses shall be kept on hand at all times. The bags shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance and abrasion resistance).

Monitoring/Recordkeeping:

1. Special Condition No. 4.D: The installation shall monitor and record the operating pressure drop across the baghouse at least once in every twenty four (24) hour period when the associated equipment is operated. The operating pressure drop shall be maintained within the normal operating range specified by the manufacturer's performance warranty. If the pressure drop reading should fall outside of this normal operating range, then the associated equipment shall be shut down as quickly as is reasonably practical. Corrective actions shall be taken to address the cause of the non-normal pressure drop and the baghouse(s) shall be returned to normal operation before restarting the equipment.
2. Special Condition No. 4.E: The installation shall inspect the baghouse(s) at least once every six (6) months and at a minimum, conduct the following activities:
 - a) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions, and
 - b) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
3. These records shall be made available immediately for inspection to the Department of Natural Resources personnel upon request.
4. All records must be maintained for five (5) years.

Reporting:

The permittee shall report any deviations from the operational limitations and monitoring/recordkeeping requirements of this permit condition in the annual monitoring report and compliance certification required by Section V of this permit.

PERMIT CONDITION EU0005-002

10 CSR 10-6.060 Construction Permits Required
Construction Permit No. 102003-011A, Revised December 13, 2007

Operational Limitation:

Special Condition No. 2.B: The permittee shall periodically water and/or wash the paved portions of their haul roads such that no “appreciable visible emission” of particulate matter is allowed to occur from the surface of these paved roads while this installation is operating at this site.

Reporting:

The permittee shall report any deviations from the operational limitations requirements of this permit condition in the annual monitoring report and compliance certification required by Section V of this permit.

PERMIT CONDITION EU0006-002

10 CSR 10-6.060 Construction Permits Required
Construction Permit No. 102003-011A, Revised December 13, 2007

Operational Limitations:

Special Condition No. 3

- A. The cooling tower(s) shall be operated and maintained in accordance with the manufacturer’s specifications. Manufacturer’s specifications shall be kept on site and made readily available to Department of Natural Resources’ employees.
- B. The cooling water circulation rate shall not exceed 1,200,000 gallons per hour and 10,512 million gallons per 12 consecutive month period.
- C. The drift loss from the towers shall not exceed 0.005 percent of the water circulation rate. Verification of drift loss shall be by manufacturer’s guaranteed drift loss and shall be kept on site and made readily available to Department of Natural Resources’ employees upon request.
- D. The total dissolved solids (TDS) concentration in the circulated cooling water shall not exceed a TDS concentration of 2,500 parts per million (ppm) per sampling event. A TDS sample shall be collected at least once per calendar month.

Recordkeeping:

- 1. These records shall be made available immediately for inspection to the Department of Natural Resources personnel upon request.
- 2. All records must be maintained for five (5) years.

Reporting:

- 1. The permittee shall report to the Air Pollution Control Enforcement Section, P.O. Box 176, Jefferson City, MO 65101, no later than fifteen (15) days after any exceedance of any of the terms imposed by this regulation, or any malfunction which could possibly cause an exceedance of this regulation.
- 2. The permittee shall report any deviations from the monitoring/recordkeeping and reporting requirements of this permit condition in the annual monitoring report and compliance certification required by Section V of this permit.

PERMIT CONDITION (EU0002 and EU0007) - 003

10 CSR 10-6.400 Restriction of Emission of Particulate Matter from Industrial Processes

Emission Limitation:

- 1. The permittee shall not emit particulate matter in excess of the limits given in the following table:

Emission Unit	Description	2008 EIQ Reference #	PM Emission Limit (lb/h)
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EU0002	Grain Unloading	EP#P15	58.51
EU0007	DDGS Cooler Cyclone	EP#P70	28.43

- No person shall cause, allow or permit the emission of particulate matter from any source in a concentration in excess of 0.30 grain per standard cubic foot of exhaust gases.

Monitoring/Record Keeping:

- The permittee shall retain the potential to emit calculations in Attachment J which demonstrate that the above emission limitation will never be exceeded. No further record keeping shall be required to demonstrate compliance with the emission limitations.
- The calculation shall be made available immediately for inspection to the Department of Natural Resources' personnel upon request.
- All records shall be kept for a period of five (5) years.

Reporting:

The permittee shall report to the Air Pollution Control Enforcement Section, P.O. Box 176, Jefferson City, MO 65101, no later than fifteen (15) days after any exceedance of any of the terms imposed by this regulation, or any malfunction which could possibly cause an exceedance of this regulation.

EU0010 – CO ₂ Fermentation Scrubber		
Emission Unit	Description	2008 EIQ Reference #
EU0010	CO ₂ Fermentation Scrubber	EP#P10

<p>PERMIT CONDITION EU0010-001 10 CSR 10-6.060 Construction Permits Required Construction Permit No. 102003-011A, Revised December 13, 2007</p>
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Operational Limitation:

Special Condition No. 5.A: The scrubber must be in use at all times when the associated equipment (Stack ID 40) is in operation and shall be operated and maintained in accordance with the manufacturer's specifications.

Monitoring/Recordkeeping:

- Special Condition No. 5.B: The permittee shall monitor and record the operating pressure of the scrubber using a continuous internal pressure monitor.
- Special Condition No. 5.C: The permittee shall monitor and record the operating pressure drop across each scrubber at least once every twenty four (24) hours. The scrubber shall be equipped with a gauge or meter that indicates the pressure drop across the scrubber. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.
- Special Condition No. 5.D: The permittee shall monitor and record the flow rate through the scrubber at least once every twenty four (24) hours. The scrubber shall be equipped with a flow meter that indicates the flow through the scrubber. The flow rate shall be maintained within the design conditions specified by the manufacturer's performance warranty.
- Special Condition No. 5.E: The permittee shall maintain an operating and maintenance log for the scrubber which shall include the following:
 - Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
 - A written record of regular inspection schedule, the date and results of all inspections including any actions or maintenance activities that result from that inspection.
- These records shall be made available immediately for inspection to the Department of Natural Resources personnel upon request.
- All records must be maintained for five (5) years.

Reporting:

The permittee shall report any deviations from the monitoring/recordkeeping and reporting requirements of this permit condition in the annual monitoring report and compliance certification required by Section V of this permit.

EU0011 through EU0015 - Tanks		
Emission Unit	Description	2008 EIQ Reference #
EU0011	Denatured Ethanol Tank #1	EP#T61
EU0012	Denatured Ethanol Tank #2	EP#T62
EU0013	200-Proof Ethanol Storage Tank	EP#T63
EU0014	Denaturant Storage Tank	EP#T64
EU0015	190-Proof Ethanol Storage Tank	EP#T65

PERMIT CONDITION (EU0011 through EU0015) - 001

10 CSR 10-6.070 New Source Performance Regulations

40 CFR Part 60 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

Emission Limitation:

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 m³ 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 m³ but less than 151 m³ 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: [§60.112b(a)]
 - 1) A fixed roof in combination with an internal floating roof meeting the following specifications: [§60.112b(a)(1)]
 - 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. [§60.112b(a)(1)(i)]
 - 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: [§60.112b(a)(1)(ii)]
 - (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. [§60.112b(a)(1)(ii)(A)]
 - (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. [§60.112b(a)(1)(ii)(B)]
 - (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. [§60.112b(a)(1)(ii)(C)]
 - 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. [§60.112b(a)(1)(iii)]

- 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. [§60.112b(a)(1)(iv)]
 - 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. [§60.112b(a)(1)(v)]
 - 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. [§60.112b(a)(1)(vi)]
 - 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. [§60.112b(a)(1)(vii)]
 - 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. [§60.112b(a)(1)(viii)]
 - ix) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover. [§60.112b(a)(1)(ix)]
- 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: [§60.112b(a)(2)]
- 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. [§60.112b(a)(2)(i)]
 - (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. [§60.112b(a)(2)(i)(A)]
 - (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). [§60.112b(a)(2)(i)(B)]
 - 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. [§60.112b(a)(2)(ii)]
 - 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. [§60.112b(a)(2)(iii)]
- 3) A closed vent system and control device meeting the following specifications: [§60.112b(a)(3)]
- 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). [§60.112b(a)(3)(i)]
 - 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. [§60.112b(a)(3)(ii)]

- 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. [§60.112b(a)(4)]
- b) The owner or operator of each storage vessel with a design capacity greater than or equal to 75 m³ 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: [§60.112b(b)]
 - 1) A closed vent system and control device as specified in §60.112b(a)(3). [§60.112b(b)(1)]
 - 2) A system equivalent to that described in paragraph (b)(1) as provided in §60.114b of this subpart. [§60.112b(b)(2)]

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. [§60.114b(a)]
- b) Any notice under paragraph (a) of this section will be published only after notice and an opportunity for a hearing. [§60.114b(b)]
- c) Any person seeking permission under this section shall submit to the Administrator a written application including: [§60.114b(c)]
 - 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. [§60.114b(c)(1)]
 - 2) An engineering evaluation that the Administrator determines is an accurate method of determining equivalence. [§60.114b(c)(2)]
- 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. [§60.114b(d)]

Test Methods/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. [§60.113b]

- 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: [§60.113b(a)]
 - 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. [§60.113b(a)(1)]
 - 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. [§60.113b(a)(2)]
 - 3) For vessels equipped with a double-seal system as specified in §60.112b(a)(1)(ii)(B): [§60.113b(a)(3)]
 - i) Visually inspect the vessel as specified in paragraph (a)(4) of this section at least every 5 years; or [§60.113b(a)(3)(i)]
 - ii) Visually inspect the vessel as specified in paragraph (a)(2) of this section. [§60.113b(a)(3)(ii)]

- 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. [§60.113b(a)(4)]
- 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. [§60.113b(a)(5)]
- b) After installing the control equipment required to meet §60.112b(a)(2) (external floating roof), the owner or operator shall: [§60.113b(b)]
 - 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. [§60.113b(b)(1)]
 - 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. [§60.113b(b)(1)(i)]
 - 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. [§60.113b(b)(1)(ii)]
 - 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. [§60.113b(b)(1)(iii)]
 - 2) Determine gap widths and areas in the primary and secondary seals individually by the following procedures: [§60.113b(b)(2)]
 - i) Measure seal gaps, if any, at one or more floating roof levels when the roof is floating off the roof leg supports. [§60.113b(b)(2)(i)]
 - 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. [§60.113b(b)(2)(ii)]
 - 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. [§60.113b(b)(2)(iii)]
 - 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. [§60.113b(b)(3)]
 - 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: [§60.113b(b)(4)]
 - i) The accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal shall not exceed 212 cm² per meter of tank diameter, and the width of any portion of any gap shall not exceed 3.81 cm. [§60.113b(b)(4)(i)]

- (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. [§60.113b(b)(4)(i)(A)]
- (B) There are to be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope. [§60.113b(b)(4)(i)(B)]
- ii) The secondary seal is to meet the following requirements: [§60.113b(b)(4)(ii)]
 - (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. [§60.113b(b)(4)(ii)(A)]
 - (B) The accumulated area of gaps between the tank wall and the secondary seal shall not exceed 21.2 cm² per meter of tank diameter, and the width of any portion of any gap shall not exceed 1.27 cm. [§60.113b(b)(4)(ii)(B)]
 - (C) There are to be no holes, tears, or other openings in the seal or seal fabric. [§60.113b(b)(4)(ii)(C)]
- 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. [§60.113b(b)(4)(iii)]
- 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. [§60.113b(b)(5)]
- 6) Visually inspect the external floating roof, the primary seal, secondary seal, and fittings each time the vessel is emptied and degassed. [§60.113b(b)(6)]
 - 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. [§60.113b(b)(6)(i)]
 - 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. [§60.113b(b)(6)(ii)]
- 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. [§60.113b(c)]
 - 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. [§60.113b(c)(1)]
 - 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. [§60.113b(c)(1)(i)]
- 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). [§60.113b(c)(1)(ii)]
- 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. [§60.113b(c)(2)]
- 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). [§60.113b(d)]

Monitoring:

- 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. [§60.116b(a)]
- 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. [§60.116b(b)]
- 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 m³ 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 m³ but less than 151 m³ 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. [§60.116b(c)]
- 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 m³ 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 m³ but less than 151 m³ 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. [§60.116b(d)]
- e) Available data on the storage temperature may be used to determine the maximum true vapor pressure as determined below. [§60.116b(e)]
 - 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. [§60.116b(e)(1)]
 - 2) For crude oil or refined petroleum products the vapor pressure may be obtained by the following: [§60.116b(e)(2)]
 - 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). [§60.116b(e)(2)(i)]
 - 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. [§60.116b(e)(2)(ii)]
 - 3) For other liquids, the vapor pressure: [§60.116b(e)(3)]

- i) May be obtained from standard reference texts, or [§60.116b(e)(3)(i)]
 - ii) Determined by ASTM D2879–83, 96, or 97 (incorporated by reference—see §60.17); or [§60.116b(e)(3)(ii)]
 - iii) Measured by an appropriate method approved by the Administrator; or [§60.116b(e)(3)(iii)]
 - iv) Calculated by an appropriate method approved by the Administrator. [§60.116b(e)(3)(iv)]
- f) The owner or operator of each vessel storing a waste mixture of indeterminate or variable composition shall be subject to the following requirements. [§60.116b(f)]
- 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. [§60.116b(f)(1)]
 - 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: [§60.116b(f)(2)]
 - i) ASTM D2879–83, 96, or 97 (incorporated by reference—see §60.17); or [§60.116b(f)(2)(i)]
 - ii) ASTM D323–82 or 94 (incorporated by reference—see §60.17); or [§60.116b(f)(2)(ii)]
 - iii) As measured by an appropriate method as approved by the Administrator. [§60.116b(f)(2)(iii)]
- 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. [§60.116b(g)]

Recordkeeping/Reporting:

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. [§60.115b(a)]
- 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). [§60.115b(a)(1)]
 - 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). [§60.115b(a)(2)]
 - 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. [§60.115b(a)(3)]
 - 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. [§60.115b(a)(4)]
- b) After installing control equipment in accordance with §61.112b(a)(2) (external floating roof), the owner or operator shall meet the following requirements. [§60.115b(b)]
- 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). [§60.115b(b)(1)]

- 2) Within 60 days of performing the seal gap measurements required by §60.113b(b)(1), furnish the Administrator with a report that contains: [§60.115b(b)(2)]
 - i) The date of measurement. [§60.115b(b)(2)(i)]
 - ii) The raw data obtained in the measurement. [§60.115b(b)(2)(ii)]
 - iii) The calculations described in §60.113b (b)(2) and (b)(3). [§60.115b(b)(2)(iii)]
- 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: [§60.115b(b)(3)]
 - i) The date of measurement. [§60.115b(b)(3)(i)]
 - ii) The raw data obtained in the measurement. [§60.115b(b)(3)(ii)]
 - iii) The calculations described in §60.113b (b)(2) and (b)(3). [§60.115b(b)(3)(iii)]
- 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. [§60.115b(b)(4)]
- 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. [§60.115b(c)]
 - 1) A copy of the operating plan. [§60.115b(c)(1)]
 - 2) A record of the measured values of the parameters monitored in accordance with §60.113b(c)(2). [§60.115b(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. [§60.115b(d)]
 - 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. [§60.115b(d)(1)]
 - 2) Records shall be kept of all periods of operation during which the flare pilot flame is absent. [§60.115b(d)(2)]
 - 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. [§60.115b(d)(3)]

EU0016 and EU0017 – Emergency Engines	
Emission Unit	Description
EU0016	Diesel Emergency Generator Engine
EU0017	Emergency Fire Water Pump Engine

<p>PERMIT CONDITION (EU0016 and EU0017) - 001 10 CSR 10-6.061 Construction Permit Exemptions</p>

Operational Limitations:

- 1. The permittee shall limit the use of these emergency engines to five hundred (500) hours each in any consecutive 12-months.
- 2. The permittee shall only use EU0016 if electric power from the local utility is interrupted.
- 3. The Diesel Emergency Generator Engine shall be equipped with a non-resettable meter.

Recordkeeping:

- 1. The permittee shall maintain a log tracking the usage of the emergency engines. The log shall include:
 - a) Date of usage
 - b) Activity (i.e. Emergency, Maintenance, or Performance Testing)
 - c) Usage (in Hours)

Reporting:

1. The permittee shall report to the Air Pollution Control Enforcement Section, P.O. Box 176, Jefferson City, MO 65101, no later than fifteen (15) days after any exceedance of any of the terms imposed by this regulation, or any malfunction which could possibly cause an exceedance of this regulation.
2. The permittee shall report any deviations from the operational limitations, recordkeeping, and reporting requirements of this permit condition in the annual monitoring report and compliance certification required by Section V of this permit.

PERMIT CONDITION EU0016-002
 10 CSR 10-6.070 New Source Performance Regulations
 40 CFR Part 60 Subpart IIII Standards of Performance for Stationary Compression Ignition Internal
 Combustion Engines

Emission Limitations:

1. 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. [§60.4205(b)]
 - 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. [§60.4202(a)]
 - i) 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. [§60.4202(a)(2)]

(1) §89.112: Table 1. – Emission Standards (g/kW-hr)

Rated Power (kW)	Tier	Model Year ¹	NOx	HC	NMHC+NOx	CO	PM
225≤kW<450	Tier 1	1996	9.2	1.3	-	11.4	0.54
	Tier 2	2001	-	-	6.4	3.5	0.2
	Tier 3	2006	-	-	4	3.5	0.2

¹ The model years listed indicate the model years for which the specified tier of standards take effect.

- (2) Exhaust opacity from compression-ignition nonroad engines for which this subpart is applicable must not exceed: [§89.113(a)]
 - (a) 20 percent during the acceleration mode; [§89.113(a)(1)]
 - (b) 15 percent during the lugging mode; and [§89.113(a)(2)]
 - (c) 50 percent during the peaks in either the acceleration or lugging modes. [§89.113(a)(3)]
- (3) Opacity levels are to be measured and calculated as set forth in 40 CFR part 86, subpart I. Notwithstanding the provisions of 40 CFR part 86, subpart I, two-cylinder nonroad engines may be tested using an exhaust muffler that is representative of exhaust mufflers used with the engines in use. [§89.113(b)]

Operational Limitations:

1. 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 according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer, over the entire life of the engine. [§60.4206]
2. 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). [§60.4207(a)]
 - a) Beginning June 1, 2007 . Except as otherwise specifically provided in this subpart, all NRLM diesel fuel is subject to the following per-gallon standards: [§80.510(a)]

- i) Sulfur content. 500 parts per million (ppm) maximum. [§80.510(a)(1)]
 - ii) Cetane index or aromatic content, as follows: [§80.510(a)(2)]
 - (1) A minimum cetane index of 40; or [§80.510(a)(2)(i)]
 - (2) A maximum aromatic content of 35 volume percent. [§80.510(a)(2)(ii)]
3. 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. [§60.4207(b)]
 - a) Beginning June 1, 2010 . Except as otherwise specifically provided in this subpart, all NR and LM diesel fuel is subject to the following per-gallon standards: [§80.510(b)]
 - i) Sulfur content. [§80.510(b)(1)]
 - (1) 15 ppm maximum for NR diesel fuel. [§80.510(b)(1)(i)]
 - (2) 500 ppm maximum for LM diesel fuel. [§80.510(b)(1)(ii)]
 - ii) Cetane index or aromatic content, as follows: [§80.510(b)(2)]
 - (1) A minimum cetane index of 40; or [§80.510(b)(2)(i)]
 - (2) A maximum aromatic content of 35 volume percent. [§80.510(b)(2)(ii)]
4. Owners and operators of pre-2011 model year stationary CI ICE subject to this subpart may petition the Administrator for approval to use remaining non-compliant fuel that does not meet the fuel requirements of paragraphs (a) and (b) of this section beyond the dates required for the purpose of using up existing fuel inventories. If approved, the petition will be valid for a period of up to 6 months. If additional time is needed, the owner or operator is required to submit a new petition to the Administrator. [§60.4207(c)]
5. If you are an owner or operator and must comply with the emission standards specified in this subpart, you must operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer. In addition, owners and operators may only change those settings that are permitted by the manufacturer. You must also meet the requirements of 40 CFR parts 89, 94 and/or 1068, as they apply to you. [§60.4211(a)]
6. 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 specifications. [§60.4211(c)]
7. Emergency stationary ICE may be operated 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. There is no time limit on the use of emergency stationary ICE in emergency situations. Anyone 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 year. For owners and operators of emergency engines meeting standards under §60.4205 but not §60.4204, any operation other than emergency operation, and maintenance and testing as permitted in this section, is prohibited. [§60.4211(e)]

Monitoring:

1. 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. [§60.4209]
 - a) If you are an owner or operator of an emergency stationary CI internal combustion engine, you must install a non-resettable hour meter prior to startup of the engine. [§60.4209(a)]

Recordkeeping/Reporting:

1. 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. [§60.4214(b)]
2. The permittee shall report to the Air Pollution Control Enforcement Section, P.O. Box 176, Jefferson City, MO 65101, no later than fifteen (15) days after any exceedance of any of the terms imposed by this regulation, or any malfunction which could possibly cause an exceedance of this regulation.
3. The permittee shall report any deviations from the emission limitations, operational limitations, monitoring, and recordkeeping/reporting requirements of this permit condition in the annual monitoring report and compliance certification required by Section V of this permit.

IV. Core Permit Requirements

The installation shall comply with each of the following requirements. Consult the appropriate sections in the Code of Federal Regulations (CFR), Code of State Regulations (CSR), and local ordinances for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect on the date of permit issuance.

10 CSR 10-6.050 Start-up, Shutdown and Malfunction Conditions

- 1) In the event of a malfunction, which results in excess emissions that exceed one hour, the permittee shall submit to the director within two business days, in writing, the following information:
 - a) Name and location of installation;
 - b) Name and telephone number of person responsible for the installation;
 - c) Name of the person who first discovered the malfunction and precise time and date that the malfunction was discovered.
 - d) Identity of the equipment causing the excess emissions;
 - e) Time and duration of the period of excess emissions;
 - f) Cause of the excess emissions;
 - g) Air pollutants involved;
 - h) Best estimate of the magnitude of the excess emissions expressed in the units of the applicable requirement and the operating data and calculations used in estimating the magnitude;
 - i) Measures taken to mitigate the extent and duration of the excess emissions; and
 - j) Measures taken to remedy the situation that caused the excess emissions and the measures taken or planned to prevent the recurrence of these situations.
- 2) The permittee shall submit the paragraph 1 information list to the director in writing at least ten days prior to any maintenance, start-up or shutdown, which is expected to cause an excessive release of emissions that exceed one hour. If notice of the event cannot be given ten days prior to the planned occurrence, it shall be given as soon as practicable prior to the release. If an unplanned excess release of emissions exceeding one hour occurs during maintenance, start-up or shutdown, the director shall be notified verbally as soon as practical during normal working hours and no later than the close of business of the following working day. A written notice shall follow within ten working days.
- 3) Upon receipt of a notice of excess emissions issued by an agency holding a certificate of authority under section 643.140, RSMo, the permittee may provide information showing that the excess emissions were the consequence of a malfunction, start-up or shutdown. The information, at a minimum, should be the paragraph 1 list and shall be submitted not later than 15 days after receipt of the notice of excess emissions. Based upon information submitted by the permittee or any other pertinent information available, the director or the commission shall make a determination whether the excess emissions constitute a malfunction, start-up or shutdown and whether the nature, extent and duration of the excess emissions warrant enforcement action under section 643.080 or 643.151, RSMo.
- 4) Nothing in this rule shall be construed to limit the authority of the director or commission to take appropriate action, under sections 643.080, 643.090 and 643.151, RSMo to enforce the provisions of the Air Conservation Law and the corresponding rule.
- 5) Compliance with this rule does not automatically absolve the permittee of liability for the excess emissions reported.

10 CSR 10-6.060 Construction Permits Required

The permittee shall not commence construction, modification, or major modification of any installation subject to this rule, begin operation after that construction, modification, or major modification, or begin operation of any installation which has been shut down longer than five years without first obtaining a permit from the permitting authority.

10 CSR 10-6.065 Operating Permits

The permittee shall file a complete application for renewal of this operating permit at least six months before the date of permit expiration. In no event shall this time be greater than eighteen months. [10 CSR 10-6.065(5)(B)1.A(III)] The permittee shall retain the most current operating permit issued to this installation on-site. [10 CSR 10-6.065, §(5)(C)(1) and §(6)(C)1.C(II)] The permittee shall immediately make such permit available to any Missouri Department of Natural Resources personnel upon request. [10 CSR 10-6.065, §(5)(C)(1) and §(6)(C)3.B]

10 CSR 10-6.110 Submission of Emission Data, Emission Fees and Process Information

- 1) The permittee shall complete and submit an Emission Inventory Questionnaire (EIQ) in accordance with the requirements outlined in this rule.
- 2) The permittee shall pay an annual emission fee per ton of regulated air pollutant emitted according to the schedule in the rule. This fee is an emission fee assessed under authority of RSMo. 643.079.
- 3) The fees shall be payable to the Department of Natural Resources and shall be accompanied by the Emissions Inventory Questionnaire (EIQ) form or equivalent approved by the director.

10 CSR 10-6.130 Controlling Emissions During Episodes of High Air Pollution Potential

This rule specifies the conditions that establish an air pollution alert (yellow/orange/red/purple), or emergency (maroon) and the associated procedures and emission reduction objectives for dealing with each. The permittee shall submit an appropriate emergency plan if required by the Director.

10 CSR 10-6.150 Circumvention

The permittee shall not cause or permit the installation or use of any device or any other means which, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission or air contaminant which violates a rule of the Missouri Air Conservation Commission.

10 CSR 10-6.170 Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin

- 1) The permittee shall not cause or allow to occur any handling, transporting or storing of any material; construction, repair, cleaning or demolition of a building or its appurtenances; construction or use of a road, driveway or open area; or operation of a commercial or industrial installation without applying reasonable measures as may be required to prevent, or in a manner which allows or may allow, fugitive particulate matter emissions to go beyond the premises of origin in quantities that the particulate matter may be found on surfaces beyond the property line of origin. The nature or origin of the particulate matter shall be determined to a reasonable degree of certainty by a technique proven to be accurate and approved by the director.
- 2) The permittee shall not cause nor allow to occur any fugitive particulate matter emissions to remain visible in the ambient air beyond the property line of origin.
- 3) Should it be determined that noncompliance has occurred, the director may require reasonable control measures as may be necessary. These measures may include, but are not limited to, the following:
 - a) Revision of procedures involving construction, repair, cleaning and demolition of buildings and their appurtenances that produce particulate matter emissions;
 - b) Paving or frequent cleaning of roads, driveways and parking lots;
 - c) Application of dust-free surfaces;
 - d) Application of water; and
 - e) Planting and maintenance of vegetative ground cover.

10 CSR 10-6.180 Measurement of Emissions of Air Contaminants

- 1) The director may require any person responsible for the source of emission of air contaminants to make or have made tests to determine the quantity or nature, or both, of emission of air contaminants from the source.

The director may specify testing methods to be used in accordance with good professional practice. The director may observe the testing. All tests shall be performed by qualified personnel.

- 2) The director may conduct tests of emissions of air contaminants from any source. Upon request of the director, the person responsible for the source to be tested shall provide necessary ports in stacks or ducts and other safe and proper sampling and testing facilities, exclusive of instruments and sensing devices as may be necessary for proper determination of the emission of air contaminants.
- 3) The director shall be given a copy of the test results in writing and signed by the person responsible for the tests.

10 CSR 10-6.045 Open Burning Requirements

- (1) General Provisions. The open burning of tires, petroleum-based products, asbestos containing materials, and trade waste is prohibited, except as allowed below. Nothing in this rule may be construed as to allow open burning which causes or constitutes a public health hazard, nuisance, a hazard to vehicular or air traffic, nor which violates any other rule or statute.
- (2) Refer to the regulation for a complete list of allowances. The following is a listing of exceptions to the allowances:
 - (A) Burning of household or domestic refuse. Burning of household or domestic refuse is limited to open burning on a residential premises having not more than four dwelling units, provided that the refuse originates on the same premises, with the following exceptions:
 1. Kansas City metropolitan area. The open burning of household refuse must take place in an area zoned for agricultural purposes and outside that portion of the metropolitan area surrounded by the corporate limits of Kansas City and every contiguous municipality;
 2. Springfield-Greene County area. The open burning of household refuse must take place outside the corporate limits of Springfield and only within areas zoned A-1, Agricultural District;
 3. St. Joseph area. The open burning of household refuse must take place within an area zoned for agricultural purposes and outside that portion of the metropolitan area surrounded by the corporate limits of St. Joseph; and
 4. St. Louis metropolitan area. The open burning of household refuse is prohibited;
 - (B) Yard waste, with the following exceptions:
 1. Kansas City metropolitan area. The open burning of trees, tree leaves, brush or any other type of vegetation shall require an open burning permit;
 2. Springfield-Greene County area. The City of Springfield requires an open burning permit for the open burning of trees, brush or any other type of vegetation. The City of Springfield prohibits the open burning of tree leaves;
 3. St. Joseph area. Within the corporate limits of St. Joseph, the open burning of trees, tree leaves, brush or any other type of vegetation grown on a residential property is allowed during the following calendar periods and time-of-day restrictions:
 - A. A three (3)-week period within the period commencing the first day of March through April 30 and continuing for twenty-one (21) consecutive calendar days;
 - B. A three (3)-week period within the period commencing the first day of October through November 30 and continuing for twenty-one (21) consecutive calendar days;
 - C. The burning shall take place only between the daytime hours of 10:00 a.m. and 3:30 p.m.; and
 - D. In each instance, the twenty-one (21)-day burning period shall be determined by the director of Public Health and Welfare of the City of St. Joseph for the region in which the City of St. Joseph is located provided, however, the burning period first shall receive the approval of the department director; and
 4. St. Louis metropolitan area. The open burning of trees, tree leaves, brush or any other type of vegetation is limited to the period beginning September 16 and ending April 14 of each calendar year and limited to a total base area not to exceed sixteen (16) square feet. Any open burning shall be conducted only between the hours of 10:00 a.m. and 4:00 p.m. and is limited to areas outside of incorporated municipalities;

- (3) Certain types of materials may be open burned provided an open burning permit is obtained from the director. The permit will specify the conditions and provisions of all open burning. The permit may be revoked if the owner or operator fails to comply with the conditions or any provisions of the permit.
- (4) Mid-Missouri Energy, Inc. may be issued an annually renewable open burning permit for open burning provided that an air curtain destructor or incinerator is utilized and only tree trunks, tree limbs, vegetation or untreated wood waste are burned. Open burning shall occur at least two hundred (200) yards from the nearest occupied structure unless the owner or operator of the occupied structure provides a written waiver of this requirement. Any waiver shall accompany the open burning permit application. The permit may be revoked if Mid-Missouri Energy, Inc. fails to comply with the provisions or any condition of the open burning permit.
 - (A) In a nonattainment area, as defined in 10 CSR 10-6.020, paragraph (2)(N)5., the director shall not issue a permit under this section unless the owner or operator can demonstrate to the satisfaction of the director that the emissions from the open burning of the specified material would be less than the emissions from any other waste management or disposal method.
- (5) Reporting and Record Keeping. New Source Performance Standard (NSPS) 40 CFR Part 60 Subpart CCCC establishes certain requirements for air curtain destructors or incinerators that burn wood trade waste. These requirements are established in 40 CFR 60.2245-60.2260. The provisions of 40 CFR part 60 Subpart CCCC promulgated as of September 22, 2005 shall apply and are hereby incorporated by reference in this rule, as published by the U.S. Government Printing Office, 732 N Capitol Street NW, Washington, DC 20401. To comply with NSPS 40 CFR 60.2245-60.2260, sources must conduct an annual Method 9 test. A copy of the annual Method 9 test results shall be submitted to the director.
- (6) Test Methods. The visible emissions from air pollution sources shall be evaluated as specified by 40 CFR part 60, Appendix A–Test Methods, Method 9–Visual Determination of the Opacity of Emissions from Stationary Sources. The provisions of 40 CFR part 60, Appendix A, Method 9 promulgated as of December 23, 1971 is incorporated by reference in this rule, as published by the U.S. Government Printing Office, 732 N Capitol Street NW, Washington, DC 20401.

10 CSR 10-3.090 Restriction of Emission of Odors

This requirement is not federally enforceable.

No person may cause, permit or allow the emission of odorous matter in concentrations and frequencies or for durations that odor can be perceived when one volume of odorous air is diluted with seven volumes of odor-free air for two separate trials not less than 15 minutes apart within the period of one hour.

10 CSR 10-6.080 Emission Standards for Hazardous Air Pollutants and 40 CFR Part 61 Subpart M National Emission Standard for Asbestos

- 1) The permittee shall follow the procedures and requirements of 40 CFR Part 61, Subpart M for any activities occurring at this installation which would be subject to provisions for 40 CFR Part 61, Subpart M, National Emission Standard for Asbestos.
- 2) The permittee shall conduct monitoring to demonstrate compliance with registration, certification, notification, and Abatement Procedures and Practices standards as specified in 40 CFR Part 61, Subpart M.

10 CSR 10-6.250 Asbestos Abatement Projects – Certification, Accreditation, and Business Exemption Requirements

The permittee shall conduct all asbestos abatement projects within the procedures established for certification and accreditation by 10 CSR 10-6.250. This rule requires individuals who work in asbestos abatement projects to be certified by the Missouri Department of Natural Resources Air Pollution Control Program. This rule requires training providers who offer training for asbestos abatement occupations to be accredited by the Missouri Department of Natural Resources Air Pollution Control Program. This rule requires persons who hold exemption status from certain requirements of this rule to allow the department to monitor training provided to employees. Each individual who works in asbestos abatement projects must first obtain certification for the appropriate occupation from the department. Each person who offers training for asbestos abatement occupations must first

obtain accreditation from the department. Certain business entities that meet the requirements for state-approved exemption status must allow the department to monitor training classes provided to employees who perform asbestos abatement.

Title VI – 40 CFR Part 82 Protection of Stratospheric Ozone

- 1) The permittee shall comply with the standards for labeling of products using ozone-depleting substances pursuant to 40 CFR Part 82, Subpart E:
 - a) All containers in which a class I or class II substance is 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 into 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 statement 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.
- 2) The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F, except as provided for motor vehicle air conditioners (MVACs) in Subpart B:
 - 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 the 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.
- 3) If the permittee manufactures, transforms, imports, or exports a class I or class II substance, the permittee is subject to all the requirements as specified in 40 CFR part 82, Subpart A, Production and Consumption Controls.
- 4) 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 CFR part 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 system used on passenger buses using HCFC-22 refrigerant.

The permittee shall be allowed to switch from any ozone-depleting substance to any alternative that is listed in the Significant New Alternatives Program (SNAP) promulgated pursuant to 40 CFR part 82, Subpart G, Significant New Alternatives Policy Program. *Federal Only - 40 CFR part 82*

10 CSR 10-6.280 Compliance Monitoring Usage

- 1) The permittee is not prohibited from using the following in addition to any specified compliance methods for the purpose of submission of compliance certificates:
 - a) Monitoring methods outlined in 40 CFR Part 64;
 - b) Monitoring method(s) approved for the permittee pursuant to 10 CSR 10-6.065, "Operating Permits", and incorporated into an operating permit; and
 - c) Any other monitoring methods approved by the director.

- 2) Any credible evidence may be used for the purpose of establishing whether a permittee has violated or is in violation of any such plan or other applicable requirement. Information from the use of the following methods is presumptively credible evidence of whether a violation has occurred by a permittee:
 - a) Monitoring methods outlined in 40 CFR Part 64;
 - b) A monitoring method approved for the permittee pursuant to 10 CSR 10-6.065, "Operating Permits", and incorporated into an operating permit; and
 - c) Compliance test methods specified in the rule cited as the authority for the emission limitations.
- 3) The following testing, monitoring or information gathering methods are presumptively credible testing, monitoring, or information gathering methods:
 - a) Applicable monitoring or testing methods, cited in:
 - i) 10 CSR 10-6.030, "Sampling Methods for Air Pollution Sources";
 - ii) 10 CSR 10-6.040, "Reference Methods";
 - iii) 10 CSR 10-6.070, "New Source Performance Standards";
 - iv) 10 CSR 10-6.080, "Emission Standards for Hazardous Air Pollutants"; or
 - b) Other testing, monitoring, or information gathering methods, if approved by the director, that produce information comparable to that produced by any method listed above.

V. General Permit Requirements

The installation shall comply with each of the following requirements. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect as of the date that this permit is issued.

10 CSR 10-6.065, §(5)(C)1 and §(6)(C)1.B Permit Duration

This permit is issued for a term of five years, commencing on the date of issuance. This permit will expire at the end of this period unless renewed.

10 CSR 10-6.065, §(5)(C)1 and §(6)(C)1.C General Record Keeping and Reporting Requirements

- 1) Record Keeping
 - a) All required monitoring data and support information shall be retained for a period of at least five years from the date of the monitoring sample, measurement, report or application.
 - b) Copies of all current operating and construction permits issued to this installation shall be kept on-site for as long as the permits are in effect. Copies of these permits shall be made immediately available to any Missouri Department of Natural Resources' personnel upon request.
- 2) Reporting
 - a) All reports shall be submitted to the Air Pollution Control Program, Enforcement Section, P. O. Box 176, Jefferson City, MO 65102.
 - b) The permittee shall submit a report of all required monitoring by:
 - i) April 1st for monitoring which covers the January through December time period.
 - ii) Exception. Monitoring requirements which require reporting more frequently than annually shall report no later than 30 days after the end of the calendar quarter in which the measurements were taken.
 - c) Each report shall identify any deviations from emission limitations, monitoring, record keeping, reporting, or any other requirements of the permit.
 - d) Submit supplemental reports as required or as needed. Supplemental reports are required no later than ten days after any exceedance of any applicable rule, regulation or other restriction. All reports of deviations shall identify the cause or probable cause of the deviations and any corrective actions or preventative measures taken.
 - i) Notice of any deviation resulting from an emergency (or upset) condition as defined in paragraph (6)(C)7 of 10 CSR 10-6.065 (Emergency Provisions) shall be submitted to the permitting authority either verbally or in writing within two working days after the date on which the emission limitation is exceeded due to the emergency, if the permittee wishes to assert an affirmative defense. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that indicate an emergency occurred and the permittee can identify the cause(s) of the emergency. The permitted installation must show that it was operated properly at the time and that during the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or requirements in the permit. The notice must contain a description of the emergency, the steps taken to mitigate emissions, and the corrective actions taken.
 - ii) Any deviation that poses an imminent and substantial danger to public health, safety or the environment shall be reported as soon as practicable.
 - iii) Any other deviations identified in the permit as requiring more frequent reporting than the permittee's annual report shall be reported on the schedule specified in this permit, and no later than ten days after any exceedance of any applicable rule, regulation, or other restriction.
 - e) Every report submitted shall be certified by the responsible official, except that, if a report of a deviation must be submitted within ten days after the deviation, the report may be submitted without a certification

if the report is resubmitted with an appropriate certification within ten days after that, together with any corrected or supplemental information required concerning the deviation.

- f) The permittee may request confidential treatment of information submitted in any report of deviation.

10 CSR 10-6.065 §(5)(C)1 and §(6)(C)1.D Risk Management Plan Under Section 112(r)

The permittee shall comply with the requirements of 40 CFR Part 68, Accidental Release Prevention Requirements. If the permittee has more than a threshold quantity of a regulated substance in process, as determined by 40 CFR Section 68.115, the permittee shall submit a Risk Management Plan in accordance with 40 CFR Part 68 no later than the latest of the following dates:

- 1) June 21, 1999;
- 2) Three years after the date on which a regulated substance is first listed under 40 CFR Section 68.130; or
- 3) The date on which a regulated substance is first present above a threshold quantity in a process.

10 CSR 10-6.065(5)(C)1.A General Requirements

- 1) The permittee must comply with all of the terms and conditions of this permit. Any noncompliance with a permit condition constitutes a violation and is grounds for enforcement action, permit termination, permit revocation and re-issuance, permit modification or denial of a permit renewal application.
- 2) The permittee may not use as a defense in an enforcement action that it would have been necessary for the permittee to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit
- 3) The permit may be modified, revoked, reopened, reissued or terminated for cause. Except as provided for minor permit modifications, the filing of an application or request for a permit modification, revocation and reissuance, or termination, or the filing of a notification of planned changes or anticipated noncompliance, does not stay any permit condition.
- 4) This permit does not convey any property rights of any sort, nor grant any exclusive privilege.
- 5) The permittee shall furnish to the Air Pollution Control Program, upon receipt of a written request and within a reasonable time, any information that the Air Pollution Control Program reasonably may require to determine whether cause exists for modifying, reopening, reissuing or revoking the permit or to determine compliance with the permit. Upon request, the permittee also shall furnish to the Air Pollution Control Program copies of records required to be kept by the permittee. The permittee may make a claim of confidentiality for any information or records submitted under this rule.
- 6) Failure to comply with the limitations and conditions that qualify the installation for an Intermediate permit make the installation subject to the provisions of 10 CSR 10-6.065(6) and enforcement action for operating without a valid part 70 operating permit.

10 CSR 10-6.065(5)(C)1.C Reasonably Anticipated Operating Scenarios

None.

10 CSR 10-6.065, §(5)(B)4; §(5)(C)1, §(6)(C)3.B; and §(6)(C)3.D; and §(5)(C)3 and §(6)(C)3.E.(I) – (III) and (V) – (VI) Compliance Requirements

- 1) Any document (including reports) required to be submitted under this permit shall contain a certification signed by the responsible official.
- 2) Upon presentation of credentials and other documents as may be required by law, the permittee shall allow authorized officials of the Missouri Department of Natural Resources, or their authorized agents, to perform the following (subject to the installation's right to seek confidential treatment of information submitted to, or obtained by, the Air Pollution Control Program):
 - a) Enter upon the premises where a permitted installation is located or an 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 that must be kept under the conditions of this permit;

- c) Inspect, at reasonable times and using reasonable safety practices, 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 Missouri Air Conservation Law, Chapter 643, RSMo or the Act, sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the terms of this permit, and all applicable requirements as outlined in this permit.
- 3) All progress reports required under an applicable schedule of compliance shall be submitted semiannually (or more frequently if specified in the applicable requirement). These progress reports shall contain the following:
- a) Dates for achieving the activities, milestones or compliance required in the schedule of compliance, and dates when these activities, milestones or compliance were achieved, and
 - b) An explanation of why any dates in the schedule of compliance were not or will not be met, and any preventative or corrective measures adopted.
- 4) The permittee shall submit an annual certification that it is in compliance with all of the federally enforceable terms and conditions contained in this permit, including emissions limitations, standards, or work practices. These certifications shall be submitted annually by April 1st, unless the applicable requirement specifies more frequent submission. These certifications shall be submitted to the Air Pollution Control Program, Enforcement Section, P.O. Box 176, Jefferson City, MO 65102. All deviations and exceedances must be included in the compliance certifications. The compliance certification shall include the following:
- a) The identification of each term or condition of the permit that is the basis of the certification;
 - b) The current compliance status, as shown by monitoring data and other information reasonably available to the installation;
 - c) Whether compliance was continuous or intermittent;
 - d) The method(s) used for determining the compliance status of the installation, both currently and over the reporting period; and
 - e) Such other facts as the Air Pollution Control Program will require in order to determine the compliance status of this installation.

10 CSR 10-6.065, §(5)(C)1 and §(6)(C)7 Emergency Provisions

- 1) An emergency or upset as defined in 10 CSR 10-6.065(6)(C)7.A shall constitute an affirmative defense to an enforcement action brought for noncompliance with technology-based emissions limitations. To establish an emergency- or upset-based defense, the permittee must demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence, the following:
 - a) That an emergency or upset occurred and that the permittee can identify the source of the emergency or upset,
 - b) That the installation was being operated properly,
 - c) That the permittee took all reasonable steps to minimize emissions that exceeded technology-based emissions limitations or requirements in this permit, and
 - d) That the permittee submitted notice of the emergency to the Air Pollution Control Program within two working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and any corrective actions taken.
- 2) Be aware that an emergency or upset shall not include noncompliance caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

10 CSR 10-6.065(5)(C)5 Off-Permit Changes

- 1) Except as noted below, the permittee may make any change in its permitted installation's operations, activities or emissions that is not addressed in, constrained by or prohibited by this permit without obtaining a permit revision. Off-permit changes shall be subject to the following requirements and restrictions:
 - a) The change must meet all applicable requirements of the Act and may not violate any existing permit term or condition; the permittee may not change a permitted installation without a permit revision if this change is a Title I modification; Please Note: Changes at the installation which affect the emission

limitation(s) classifying the installation as an intermediate source (add additional equipment to the record keeping requirements, increase the emissions above major source level) do not qualify for off-permit changes.

- b) The permittee must provide written notice of the change to the Air Pollution Control Program, Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as well as EPA Region VII, 901 North 5th Street, Kansas City, Kansas 66101, no later than the next annual emissions report. This written notice shall describe each change, including the date, any change in emissions, pollutants emitted and any applicable requirement that would apply as a result of the change; and
- c) The permittee shall keep a record describing all changes made at the installation that result in emissions of a regulated air pollutant subject to an applicable requirement and the emissions resulting from these changes.

10 CSR 10-6.020(2)(R)12 Responsible Official

The application utilized in the preparation of this permit was signed by Mr. Billy Gwaltney, General Manager. On September 1, 2009, the Air Pollution Control Program was informed that Tyler Edmundson, Plant Manager is now the responsible official. If this person terminates employment, or is reassigned different duties such that a different person becomes the responsible person to represent and bind the installation in environmental permitting affairs, the owner or operator of this air contaminant source shall notify the Director of the Air Pollution Control Program of the change. Said notification shall be in writing and shall be submitted within 30 days of the change. The notification shall include the name and title of the new person assigned by the source owner or operator to represent and bind the installation in environmental permitting affairs. All representations, agreement to terms and conditions and covenants made by the former responsible person that were used in the establishment of limiting permit conditions on this permit will continue to be binding on the installation until such time that a revision to this permit is obtained that would change said representations, agreements and covenants.

10 CSR 10-6.065 §(5)(E)4 and §(6)(E)6.A(III)(a)-(c) Reopening-Permit for Cause

This permit may be reopened for cause if:

- 1) The Missouri Department of Natural Resources (MDNR) or EPA determines that the permit contains a material mistake or that inaccurate statements were made which resulted in establishing the emissions limitation standards or other terms of the permit,
- 2) Additional applicable requirements under the Act become applicable to the installation; however, reopening on this ground is not required if—:
 - a) The permit has a remaining term of less than three years;
 - b) The effective date of the requirement is later than the date on which the permit is due to expire; or
 - c) The additional applicable requirements are implemented in a general permit that is applicable to the installation and the installation receives authorization for coverage under that general permit,
- 3) MDNR or EPA determines that the permit must be reopened and revised to assure compliance with applicable requirements.

10 CSR 10-6.065 §(5)(E)1.A and §(6)(E)1.C Statement of Basis

This permit is accompanied by a statement setting forth the legal and factual basis for the permit conditions (including references to applicable statutory or regulatory provisions). This Statement of Basis, while referenced by the permit, is not an actual part of the permit.

VI. Attachments

Attachments follow.

ATTACHMENT A

Plantwide Permit Condition PW002 Compliance Worksheet

VOC Emission Rate (tons/month) =
Usage * VOC Emission Factor * Total Control Device Efficiency * 0.0005 tons/lb

Emission Unit	2008 EIQ Reference No.	Monthly Usage	VOC Emission Factor	VOC Emission Rate (tons/month)
VOC Equipment Leaks (Subpart VV)	EP#F60	-	-	0.3542
		(gallon)	(lb/gallon)	(tons/month)
CO2 Fermentation Scrubber	EP#P40		0.00043	
		(1000 gal)	(lb/1000 gal)	(tons/month)
Truck VRS Loadout Flare	EP#EP22		0.1824	
Denatured Ethanol Loadout to Rail	EP#F55		0.4272	
Denatured Ethanol Tank #1	EP#T61			
Denatured Ethanol Tank #2	EP#T62			
200-Proof Ethanol Storage Tank	EP#T63			
Denaturant Storage Tank	EP#T64			
190-Proof Ethanol Storage Tank	EP#T65			
		(hours)	(lb/h)	(tons/month)
Biomethanator Flare	EP#EP11		0.1658	
TO/Heat Recovery Boiler/DDGS Dryer	EP#P10		1.067	
Emergency Fire Water Pump Engine	-		0.89908	
Diesel Emergency Generator Engine	-		0.741	
		(tons)	(lb/ton)	(tons/month)
DDGS Cooler Cyclone	EP#P70		0.13375	
		(barrel-years)	(lb/barrel-year)	(tons/month)
Distillation & other processes (to P10)	EP#P50		0.0054828	

Monthly VOC Emissions (tons/month) = \sum VOC Emission Rates (tons/month)
Annual VOC Emissions (tons/yr) = \sum last 12 months Monthly VOC Emissions (tons/month)

Month and Year	Annual Emission for the last 12 months (tons/yr)

Month and Year	Annual Emission for the last 12 months (tons/yr)

* An Annual Emission of less than 100 tons demonstrates compliance.
** The VOC emission factors for Denatured Ethanol Tank #1 EP#T61, Denatured Ethanol Tank #2 EP#T62, 200-Proof Ethanol Storage Tank EP#T63, Denaturant Storage Tank EP#T64, and 190-Proof Ethanol Storage Tank EP#T65 shall be taken from the TANKS program.

ATTACHMENT F
 Method 9 Opacity Emissions Observations

Company					Observer			
Location					Observer Certification Date			
Date					Emission Unit			
Time					Control Device			
Hour	Minute	Seconds				Steam Plume (check if applicable)		Comments
		0	15	30	45	Attached	Detached	
	0							
	1							
	2							
	3							
	4							
	5							
	6							
	7							
	8							
	9							
	10							
	11							
	12							
	13							
	14							
	15							
	16							
	17							
	18							
SUMMARY OF AVERAGE OPACITY								
Set Number	Time				Opacity			
	Start	End	Sum	Average				

Readings ranged from _____ to _____ % opacity.

Was the emission unit in compliance at the time of evaluation? _____
 YES NO Signature of Observer

ATTACHMENT J
10 CSR 10-6.400 Compliance Demonstration

Emission Unit	Description	2008 EIQ Reference Number	MHDR	PM Emission Factor (lb/ton)	Potential PM Emission Rate (lb/h)	PM Emission Limit (lb/h)	Potential PM Conc. (gr/scf)	PM Conc. Limit (gr/scf)
EU0002	Grain Unloading	EP#P15	200	0.003752	0.75	58.51	0.002	0.3
EU0007	DDGS Cooler Cyclone	EP#P70	18	0.035017	0.63	28.43	0.003	0.3

Every emission unit is in compliance for both the PM rate emission limit and PM concentration emission limit.

STATEMENT OF BASIS

Voluntary Limitations

In order to qualify for this Intermediate State Operating Permit, the permittee has accepted voluntary, federally enforceable emission limitations. Per 10 CSR 10-6.065(5)(C)1.A.(VI), if these limitations are exceeded, the installation immediately becomes subject to 10 CSR 10-6.065(6) and enforcement action for operating without a valid part 70 operating permit. It is the permittee's responsibility to monitor emission levels and apply for a part 70 operating permit far enough in advance to avoid this situation. This may mean applying more than eighteen months in advance of the exceedance, since it can take that long or longer to obtain a part 70 operating permit.

Permit Reference Documents

These documents were relied upon in the preparation of the operating permit. Because they are not incorporated by reference, they are not an official part of the operating permit.

- 1) Intermediate Operating Permit Application, received March 29, 2005;
- 2) U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*; Volume I, Stationary Point and Area Sources, Fifth Edition.

Applicable Requirements Included in the Operating Permit but Not in the Application or Previous Operating Permits

In the operating permit application, the installation indicated they were not subject to the following regulation(s). However, in the review of the application, the agency has determined that the installation is subject to the following regulation(s) for the reasons stated.

10 CSR 10-6.220, *Restriction of Emission of Visible Air Contaminants* is applicable to all emission units at this facility which emit any type of particulate matter (i.e. visible air contaminants). The facility was built in 2005 which classifies it as a new source under the rule so a 20% opacity standard was applied to all particulate matter emitting emission units (EU0001 through EU0007).

10 CSR 10-6.400, *Restriction of Emission of Particulate Matter from Industrial Processes* is applicable to emission units EU0002 and EU0007. Both emission units emit particulate matter and are not indirect heating sources. Both emission units emit particulate matter at a rate greater than 0.5 lbs/h.

Other Air Regulations Determined Not to Apply to the Operating Permit

The Air Pollution Control Program (APCP) has determined that the following requirements are not applicable to this installation at this time for the reasons stated.

10 CSR 10-6.100, *Alternate Emission Limits* is not applicable because the installation is in an ozone attainment area.

10 CSR 10-6.260, *Restriction of Emission of Sulfur Compounds* is not applicable to this facility due to the fact that all SO_x emitting units run on pipe-line grade natural gas.

Construction Permit Revisions

The following revisions were made to construction permits for this installation:

All testing required by construction permit no. 102003-011A was completed upon facility start-up in 2005, so these conditions were not included in this operating permit. The haul road was paved in 2005, so that condition was not included in this operating permit.

Construction Permit No. 102003-011A, Revised December 13, 2007 Special Condition No. 1.C was split into two emission limitations to ensure that the permittee understands that they must adhere with both emission limitations. The original special condition used an “or” which may have been unclear as to whether the permittee should adhere to both emission limitations or whether they could pick between the two emission limitations.

New Source Performance Standards (NSPS) Applicability

40 CFR Part 60 Subpart Db, *Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units* is applicable to emission unit EU0001 Thermal Oxidizer/Heat Recovery Boiler/DDGS Dryer, EP#P10 and has been included in this operating permit.

40 CFR Part 60 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* is applicable to all tanks, emission units EU0011 through EU0015, and has been included in this operating permit.

40 CFR Part 60 Subpart VV, *Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry* is applicable to the entire facility and has been included as a Plantwide condition in this permit.

A newer regulation, 40 CFR Part 60 Subpart VVa, *Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006*, has been promulgated, this rule does not apply because the facility began construction in 2005, but should a reconstruction or modification occur at the facility this newer regulation will become applicable and will supercede the older regulation.

40 CFR Part 60 Subpart XX, *Standards of Performance for Bulk Gasoline Terminals* is not applicable since the fuel ethanol (alcohol/petroleum distillate blend) manufactured by the facility does not satisfy the Subpart XX definition of gasoline.

40 CFR Part 60 Subpart NNN, *Standards of Performance for Volatile Organic Compound Emissions from SOCFI Distillation Operations* is not applicable since a condenser is used to decrease the amount of ethanol lost to the vapor.

40 CFR Part 60 Subpart RRR, *Standards of Performance for Volatile Organic Compound Emissions from SOCFI Reactor Processes* is not applicable since a CO₂ fermentation scrubber is used to recover CO₂ which may be sold for profit.

Maximum Available Control Technology (MACT) Applicability

This facility has taken a 10/25 limit and is, therefore, not major for HAPs. There are no regulations for area sources which are applicable to this facility.

National Emission Standards for Hazardous Air Pollutants (NESHAP) Applicability

None.

Other Regulatory Determinations

The facility sells some of the gases coming from the CO₂ fermentation scrubber. (This stream is mainly CO₂ but does contain some VOC and HAPs).

10 CSR 10-6.400 Restriction of Emission of Particulate Matter from Industrial Processes is not applicable to emission units EU0003 and EU0004 because they emit less than 0.5 lbs/h of PM. The regulation is not applicable to emission units EU0005 and EU0006 because these emission units have fugitive emissions.

The following table contains a current Potential to Emit for this facility:

Pollutant	Potential to Emit (tons/yr)
PM ₁₀	178.06
SO _x	0.68
NO _x	52.09
VOC	1168.71
CO	98.15
HAPs	5.9

Other Regulations Not Cited in the Operating Permit or the Above Statement of Basis

Any regulation which is not specifically listed in either the Operating Permit or in the above Statement of Basis does not appear, based on this review, to be an applicable requirement for this installation for one or more of the following reasons.

- 1) The specific pollutant regulated by that rule is not emitted by the installation.
- 2) The installation is not in the source category regulated by that rule.
- 3) The installation is not in the county or specific area that is regulated under the authority of that rule.
- 4) The installation does not contain the type of emission unit which is regulated by that rule.
- 5) The rule is only for administrative purposes.

Should a later determination conclude that the installation is subject to one or more of the regulations cited in this Statement of Basis or other regulations which were not cited, the installation shall determine and demonstrate, to the Air Pollution Control Program's satisfaction, the installation's compliance with that regulation(s). If the installation is not in compliance with a regulation which was not previously cited, the installation shall submit to the APCP a schedule for achieving compliance for that regulation(s).

Prepared by:

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