



**MISSOURI**  
 DEPARTMENT OF  
 NATURAL RESOURCES  
 Air Pollution Control Program

# PART 70 PERMIT TO OPERATE

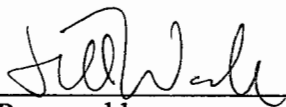
Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to operate the air contaminant source(s) described below, in accordance with the laws, rules, and conditions set forth herein.

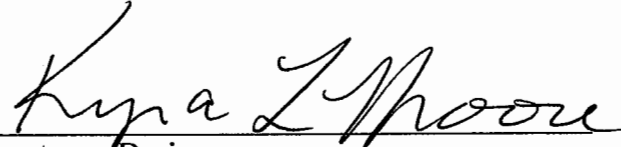
**Operating Permit Number:** OP2017-067  
**Expiration Date:** SEP 08 2022  
**Installation ID:** 019-0004  
**Project Number:** 2013-08-023

**Installation Name and Address**  
 University of Missouri Power Plant  
 417 South 5th Street  
 Columbia, MO 65211  
 Boone County

**Parent Company's Name and Address**  
 The Curators of the University of Missouri  
 8 Research Park Development Building  
 Columbia MO, 65211

**Installation Description:**  
 The University of Missouri (MU) owns and operates a combined heat and power plant that produces steam for electric generation and thermal energy for campus use. Emission units include four coal-fired boilers, a natural gas-fired boiler, a biomass boiler, two natural gas combustion turbines, several emergency generators and engine driven pumps, cooling towers, fuel handling and storage and a paved haul road. The facility is major for emissions of CO, greenhouse gases (CO<sub>2e</sub>), HAPs, NO<sub>x</sub>, PM<sub>10</sub> and SO<sub>x</sub>. This facility is subject to 40 CFR Part 63 Subparts DDDDD and ZZZZ, 40 CFR Part 60 Subparts Db and GG and 40 CFR Part 64 Compliance Assurance Monitoring (CAM).

  
 Prepared by  
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 Operating Permit Unit

  
 Director or Designee  
 Department of Natural Resources

SEP 08 2017  
 Effective Date

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## I. Installation Equipment Listing

### EMISSION UNITS WITH LIMITATIONS

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

Emission Unit #	Description of Emission Unit
EP07	Boiler 7
EP08	Boiler 8
EP09	Boiler 9
EP10	Boiler 10
EP19	Biomass Boiler
EP20	Boiler 12
EP26	Combustion Turbine Train 1
EP27	Combustion Turbine Train 2
EP23	Southwest Well Generator
EP25	East Well Engine Driven Pump
EP18	North Well Generator
EP29	Plant Back Up Diesel Generator
EP31	South Well Engine Driven Pump
EP05	East Ash Silo Conveying Air Vent
EP06	East Ash Silo Unloading and Bin Vent
EP12	West Ash Silo Conveying Air Vent
EP13	West Ash Silo Unloading and Bin Vent
EP22	East Campus Chiller Plant Generator (16 kw)
EP32	Hydrated Lime Storage Silo Filter Vent
EP38	Coal Unloading
EP39	Biomass Fuel Metering Bin
EP40-1	Coal-Handling Belt Conveyor N
EP40-2	Coal-Handling Belt Conveyor S
EP41	Biomass Conveying
EP42-1	Coal East Silo
EP42-2	Coal West Silo
EP42-3	Biomass East Silo
EP42-4	Biomass West Silo
EP42-5	Biomass/Alternative Fuel Silo
EP14	Fluid Cooling Tower
EP33	5-Cell Cooling Tower
EP36	Paved Haul Road

### EMISSION UNITS WITHOUT SPECIFIC LIMITATIONS

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

#### Description of Emission Source

EP16	Portable Kerosene Space Heaters 150,000 Btu/hr
EP17	North Well Generator Storage Tank, 465 gallon capacity

EP21 Two (2) No. 2 Fuel Oil Tanks, 19,500 gallon each  
EP24 Southwest Well Generator Storage Tank, 465 gallon capacity  
EP28 Power Plant Back-Up Generator Fuel Oil Storage Tank, 683 gallon capacity  
EP30 No. 2 Fuel Oil Storage Tank, 500 gallon  
EP37 Fuel Delivery Unloading – Biomass  
Sulfuric Acid Tank  
Used Oil Tank  
Brinemaker Tank  
Five (5) Gaseous Chlorine Systems for Public Drinking Water System  
Six (6) Turbine Lube Oil Vapor Extractors  
Ammonia Storage Tank, 10,000 gallon capacity

## 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 as of the date that this permit is issued. The plant wide conditions apply to all emission units at this installation. All emission units are listed in Section I under Emission Units with Limitations and Emission Units without Limitations.

### PERMIT CONDITION PW1

10 CSR 10-6.060 Construction Permits Required

Construction Permit 112016-004, Issued November 8, 2016

40 CFR Part 51 Requirements for Preparation Adoption and Submittal of Implementation Plans  
Subpart BB Data Requirements Rule for Characterizing Air Quality for the Primary SO<sub>2</sub> NAAQS

#### **Emission Limitation:**

The permittee shall emit less than 2,000 tons of SO<sub>2</sub> in any consecutive 12-month period from the entire installation as defined in Attachment D, inclusive of startup, shutdown, and malfunction. [Special Condition 5.A and 51.1203(e)(1)]

#### **Monitoring/Recordkeeping:**

- 1) The permittee shall develop and use forms to demonstrate compliance with the 2,000 tons per consecutive 12-month period SO<sub>2</sub> emission limit. The forms shall contain at a minimum the following information:
  - a) Installation name and ID;
  - b) Emission units;
  - c) Current month;
  - d) Current 12-month date range;
  - e) Monthly throughput of each fuel fired in each emission unit listed in Attachment D;
  - f) SO<sub>2</sub> emission factors;
  - g) The most recent SO<sub>2</sub> factors approved by the Air Pollution Control Program shall be used. Prior to testing, the SO<sub>2</sub> emission factors in Attachment D shall be used.
  - h) When the permittee tests fuel sulfur weight % in accordance with this permit, the permittee shall develop new SO<sub>2</sub> emission factors to demonstrate compliance with the SO<sub>2</sub> emission limit. The new SO<sub>2</sub> emission factors may be based upon the monthly weighted average of respective fuel sulfur weight % and respective fuel usage. The tested emission factors may be used retroactively to replace the issued emission factors if approved to do so by the Air Pollution Control Program.
  - i) Monthly emissions for each fuel calculated using the following equation:
$$\begin{aligned} & \text{SO}_2 \text{ emissions (tons)} \\ & = \text{fuel fired (tons, MMCF, gal)} \\ & \times \text{fuel specific emission factor } \left( \frac{\text{lb SO}_2}{\text{ton, MMCF, gal of fuel fired}} \right) \\ & \times \left( \frac{1 \text{ ton SO}_2}{2000 \text{ lbs SO}_2} \right) \end{aligned}$$
  - j) Emission unit specific monthly SO<sub>2</sub> emissions calculated by summing SO<sub>2</sub> emissions from all fuels for that unit;

- k) Monthly SO<sub>2</sub> emissions calculated by summing SO<sub>2</sub> emissions from all emission units;
- l) Rolling 12-month total SO<sub>2</sub> emissions and the sum of all SO<sub>2</sub> emissions from startup, shutdown, and malfunction as reported to the Air Pollution Control Program's Compliance/Enforcement Section;
- 2) The permittee shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include SDS for all materials used.
- 3) The permittee shall keep vendor records representative of each coal, fuel oil/diesel, biomass, and TDF sulfur weight %. A change of materials or vendors requires new vendor records. As an alternative to vendor sulfur records, the permittee may conduct representative sulfur testing on each fuel delivery. All records shall be kept on site.

**Reporting:**

- 1) The permittee shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, Missouri 65102, no later than ten days after any exceedance of the emission limit.
- 2) The permittee shall report any deviations/exceedances of this permit condition using the semi-annual monitoring report and annual compliance certification to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as required by 10 CSR 10-6.065(6)(C)1.C.(III).



### 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 as of the date that this permit is issued.

<b>PERMIT CONDITION 1</b> 10 CSR 10-6.260 Restriction of Emission of Sulfur Compounds 10 CSR 10-6.261 Control of Sulfur Dioxide Emissions
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Emission Unit	Description
EP07	Boiler 7: 104 MMBtu/hr Bituminous Coal Fired Boiler; Secondary Fuel: Natural Gas and Biomass; High Temperature Fabric Filter; Constructed 1956; Manufacturer: Wickes
EP08	Boiler 8: 104 MMBtu/hr Bituminous Coal Fired Boiler; Secondary Fuel: Natural Gas and Biomass; High Temperature Fabric Filter; Constructed 1956; Manufacturer: Wickes
EP09	Boiler 9: 175 MMBtu/hr Bituminous Coal Fired Boiler; Secondary Fuel: Natural Gas and Biomass; High Temperature Fabric Filter; Constructed 1966; Manufacturer: Riley
EP10	Boiler 10: 269.4 MMBtu/hr Bituminous Coal Fired Boiler; Secondary Fuel: Natural Gas and Biomass; High Temperature Fabric Filter; Constructed 1970; Manufacturer: Riley
<i>10 CSR 10-6.260 is a federal-only requirement. See Statement of Basis for explanation for why 10 CSR 10-6.260 is included in the operating permit as an applicable regulation.</i>	

**Emission Limitation:**

No person shall cause or permit emissions of sulfur dioxide into the atmosphere from any indirect heating source in excess of eight (8) pounds of sulfur dioxide per million British thermal units actual heat input averaged on any consecutive three-hour time period.

**Monitoring/Recordkeeping:**

- 1) The permittee shall determine compliance using fuel delivery records, fuel sampling and analysis, performance tests, continuous emission monitoring, or other compliance methods approved by the staff director and the U.S. Environmental Protection agency and incorporated into the state implementation plan.
- 2) The permittee must report any excess emissions other than startup, shutdown and malfunction excess emissions to the staff director for each calendar quarter within thirty (30) days following the end of the quarter. In all cases, the notification must be a written report and must include, at a minimum, the following:
  - a) Name and location of source;
  - b) Name and telephone number of person responsible for the source;
  - c) Identity and description of the equipment involved;
  - d) Time and duration of the period of excess emissions;

- e) Type of activity;
  - f) Estimate of the magnitude of the excess emissions expressed in the units of the applicable emission control regulation and the operating data and calculations used in estimating the magnitude;
  - g) Measures taken to mitigate the extent and duration of the excess emissions; and
  - h) Measures taken to remedy the situation which cause the excess emissions and the measures taken or planned to prevent the recurrence of these situations.
- 3) The permittee must maintain a list of modifications to the source's operating procedures or other routine procedures instituted to prevent or minimize the occurrence of any excess emissions.
  - 4) The permittee must maintain a record of data, calculations, results, records and reports from any performance test, continuous emission monitoring, fuel deliveries, and/or fuel sampling tests.
  - 5) The permittee must maintain a record of any applicable monitoring data, performance evaluations, calibration checks, monitoring system and device performance tests, and any adjustments and maintenance performed on these systems or devices.
  - 6) The permittee of sources using fuel delivery records for compliance must also maintain the fuel supplier certification information to certify all fuel deliveries. Bills of lading and/or other fuel deliver documentation containing the following information for all fuel purchases or deliveries are deemed acceptable to comply with the requirements of this rule:
    - a) The name, address, and contact information of the fuel supplier;
    - b) The type of fuel;
    - c) The moisture content of the coal;
    - d) The sulfur content or maximum sulfur content expressed in percent sulfur by weight or in ppm sulfur; and
    - e) The heating value of the fuel.
  - 7) The permittee of sources using fuel sampling and analysis for compliance must also follow the requirements in 10 CSR 10-6.261(5)(D).
  - 8) The permittee of sources using performance testing for compliance must also follow the requirements in 10 CSR 10-6.261(5)(A)
  - 9) All required reports and records must be retained on-site for a minimum of five (5) years and made available within five (5) business days upon written or electronic request by the director.
  - 10) The permittee must furnish the director all data necessary to determine compliance status.

**Reporting:**

- 1) The permittee shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, Missouri 65102, no later than ten days after any exceedance of the emission limit or sulfur content limit established by 10 CSR 10-6.260, or any malfunction which causes an exceedance.
- 2) The permittee shall report any deviations/exceedances of this permit condition using the semi-annual monitoring report and annual compliance certification to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as required by 10 CSR 10-6.065(6)(C)1.C.(III).

**PERMIT CONDITION 2**  
 10 CSR 10-6.060 Construction Permits Required  
 Construction Permit 092015-001, Issued September 1, 2015

Emission Unit	Description
EP07	Boiler 7: 104 MMBtu/hr Bituminous Coal Fired Boiler; Secondary Fuel: Natural Gas and Biomass; High Temperature Fabric Filter; Constructed 1956; Manufacturer: Wickes
EP08	Boiler 8: 104 MMBtu/hr Bituminous Coal Fired Boiler; Secondary Fuel: Natural Gas and Biomass; High Temperature Fabric Filter; Constructed 1956; Manufacturer: Wickes
EP09	Boiler 9: 175 MMBtu/hr Bituminous Coal Fired Boiler; Secondary Fuel: Natural Gas and Biomass; High Temperature Fabric Filter; Constructed 1966; Manufacturer: Riley
EP10	Boiler 10: 269.4 MMBtu/hr Bituminous Coal Fired Boiler; Secondary Fuel: Natural Gas and Biomass; High Temperature Fabric Filter; Constructed 1970; Manufacturer: Riley
EP32	Hydrated Lime Storage Silo Filter Vent; MHDR 430 lb/hr;
EP05	East Ash Silo Conveying Air Vent; MHDR = 5.215 tons/hr
EP12	West Ash Silo Conveying Air Vent; MHDR = 5.215 tons/hr
EP06	East Ash Silo Unloading and Bin Vent; MHDR = 70.215 tons/hr
EP13	West Ash Silo Unloading and Bin Vent; MHDR = 70.215 tons/hr

**Control Device Requirements:**

- 1) The permittee shall control emissions from EP07, EP08, EP09 and EP10 using baghouses (CD01 and CD02). [Special Condition 1.A]
- 2) The permittee shall control emissions from EP32 Lime Silo using a fabric filter (CD17). [Special Condition 1.B]
- 3) The permittee shall control emissions from EP05 and EP12 Fly Ash Conveying using a cyclone and fabric filter (CD03 and CD05). [Special Condition 1.C]
- 4) The permittee shall control emissions from EP06 and EP13 Ash Silo Unloading using a wet ash conditioner or dust recovery system (CD04 and CD06). [Special Condition 1.D]
- 5) The baghouses and fabric filters shall be operated and maintained in accordance with the manufacturer's specifications. The baghouses and fabric filters shall be equipped with a gauge or meter, which indicates the pressure drop across the control device. These gauges or meters shall be located such that Department of Natural Resources' personnel may easily observe them. [Special Condition 1.E]
- 6) Replacement filters for the baghouses and fabric filters sufficient to replace 15% of the total filters shall be kept on hand at all times. The filters shall be made of fibers appropriate for operating conditions expected to occur. [Special Condition 1.F]

**Monitoring/Recordkeeping:**

- 1) The permittee shall monitor and record the operating pressure drop across the baghouses and fabric filters at least once every 24 hours. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty. [Special Condition 1.G]
- 2) The permittee shall conduct visible emissions observations as required by Permit Condition 11.

- 3) The permittee shall use Attachments A and B or equivalent forms to record the results of visible emissions and opacity observations.
- 4) The permittee shall maintain a copy of the baghouse manufacturer’s performance specifications on site. [Special Condition 1.I]
- 5) The permittee shall maintain a copy of the fabric filter manufacturer’s performance specifications on site. [Special Condition 1.J]
- 6) The permittee shall maintain an operating and maintenance log for the dust recovery system which shall include the following: [Special Condition 1.K]
  - a) Date, time, and results of each visible emissions observation; and
  - b) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
  - c) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
- 7) The permittee shall maintain an operating and maintenance log for the baghouses, fabric filters, and cyclone which shall include the following: [Special Condition 1.L]
  - 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.
- 8) The permittee shall use Attachment C or an equivalent form to record inspection and maintenance activities performed.
- 9) The permittee shall maintain all records for not less than five years and shall make them available to any Missouri Department of Natural Resources’ personnel upon request. [Special Condition 2]

**Reporting:**

The permittee shall report any deviations/exceedances of this permit condition using the semi-annual monitoring report and annual compliance certification to the Air Pollution Control Program’s Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as required by 10 CSR 10-6.065(6)(C)1.C.(III).

**PERMIT CONDITION 3**  
 10 CSR 10-6.075 Maximum Achievable Control Technology Regulations  
 40 CFR Part 63 Subpart DDDDD National Emission Standards for Hazardous Air Pollutants for  
 Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters

Emission Unit	Description
EP07	Boiler 7: 104 MMBtu/hr Bituminous Coal Fired Boiler; Secondary Fuel: Natural Gas and Biomass; High Temperature Fabric Filer; Constructed 1956; Manufacturer: Wickes
EP08	Boiler 8: 104 MMBtu/hr Bituminous Coal Fired Boiler; Secondary Fuel: Natural Gas and Biomass; High Temperature Fabric Filer; Constructed 1956; Manufacturer: Wickes
EP09	Boiler 9: 175 MMBtu/hr Bituminous Coal Fired Boiler; Secondary Fuel: Natural Gas and Biomass; High Temperature Fabric Filter; Constructed 1966; Manufacturer: Riley
EP10	Boiler 10: 269.4 MMBtu/hr Bituminous Coal Fired Boiler: Secondary Fuel: Natural Gas and Biomass; High Temperature Fabric Filter; Constructed 1970; Manufacturer: Riley

**Emission Limitations:**

- 1) The permittee must meet the emission limits in Table 2 to 40 CFR Part 63 Subpart DDDDD. [§63.7500(a)(1)]

**Table 2 to 40 CFR Part 63 Subpart DDDDD – Emission Limits for Existing Boilers and Process Heaters**

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
Units in all subcategories designed to burn solid fuel	a. HCl	2.2E-02 lb per MMBtu of heat input	For M26A, Collect a minimum of 1 dscm per run; for M26, collect a minimum of 120 liters per run.
	b. Mercury	5.7E-06 lb per MMBtu of heat input	For M29, collect a minimum of 3 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 <sup>b</sup> collect a minimum of 3 dscm.
Units design to burn coal/solid fossil fuel	a. Filterable PM (or TSM)	4.0E-02 lb per MMBtu of heat input; or (5.3E-05 lb per MMBtu of heat input)	Collect a minimum of 2 dscm per run.
Stokers designed to burn coal/solid fossil fuel	a. CO (or CEMS)	160 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (340 ppm by volume on a dry basis corrected to 3 percent oxygen, 30-day rolling average)	1 hr minimum sampling time.

- 2) The permittee must meet the work practice standards listed in Table 3 of 40 CFR Part 63 Subpart DDDDD. [§63.7500(a)(1)]

**Table 3 to 40 CFR Part 63 Subpart DDDDD – Work Practice Standards**

If your unit is . . .	You must meet the following . . .
An existing or new boiler or process heater subject to emission limits in Table 1 or 2 or 11 through 13 to this subpart during startup	You must operate all Continuous Monitoring Systems (CMS) during startup. For startup of a boiler or process heater, you must use one or a combination of the following clean fuels: natural gas, synthetic natural gas, propane, distillate oil, syngas, ultra-low sulfur diesel, fuel oil-soaked rags, kerosene, hydrogen, paper, cardboard, refinery gas, and liquefied petroleum gas.
	If you start firing coal/solid fossil fuel, biomass/bio-based solids, heavy liquid fuel, or gas 2 (other) gases, you must vent emissions to the main stack(s) and engage all of the applicable control devices except limestone injection in fluidized bed combustion (FBC) boilers, dry scrubber, fabric filter, selective non-catalytic reduction (SNCR), and selective catalytic reduction (SCR). You must start your limestone injection in FBC boilers, dry scrubber, fabric filter, SNCR, and SCR systems as expeditiously as possible. Startup ends when steam or heat is supplied for any purpose.

	You must comply with all applicable emission limits at all times except for startup or shutdown periods conforming with this work practice. You must collect monitoring data during periods of startup, as specified in § 63.7535(b). You must keep records during periods of startup. You must provide reports concerning activities and periods of startup, as specified in § 63.7555.
An existing or new boiler or process heater subject to emission limits in Tables 1 or 2 or 11 through 13 to this subpart during shutdown	You must operate all CMS during shutdown. While firing coal/solid fossil fuel, biomass/bio-based solids, heavy liquid fuel, or gas 2 (other) gases during shutdown, you must vent emissions to the main stack(s) and operate all applicable control devices, except limestone injection in FBC boilers, dry scrubber, fabric filter, SNCR, and SCR.
	You must comply with all applicable emissions limits at all times except for startup or shutdown periods conforming with this work practice. You must collect monitoring data during periods of shutdown, as specified in § 63.7535(b). You must keep records during periods of shutdown. You must provide reports concerning activities and periods of shutdown, as specified in § 63.7555.

3) The permittee must meet the applicable operating limits in Table 4 of 40 CFR Part 63 Subpart DDDDD. [§63.7500(2)]

**Table 4 of 40 CFR Part 63 Subpart DDDDD – Operating Limits for Boilers and Process Heaters**

When complying with a Table 1, 2, 11, 12, or 13 numerical emission limit using . . .	You must meet these operating limits . . .
Fabric filter control on units not using a PM CPMS	a. Maintain opacity to less than or equal to 10 percent opacity (daily block average)

- 4) At all times, the permittee must operate and maintain the affected sources, including associated air pollution control equipment and monitoring equipment, in an manner consistent with safety and good air pollution control practices for minimizing emissions. [§63.7500(3)]
- 5) The standards apply at all times the affected unit is operating, except during periods of startup and shutdown during which time the standards in Table 3 of 40 CFR part 63 Subpart DDDDD apply. [§63.7500(3)(f)]

**Continuing Compliance:**

1) The permittee must demonstrate continuous compliance with each emission limit, the work practice standards and the operating limits according to the methods specified in Table 8 of Subpart DDDDD. [§63.7540(a)]

**Table 8 to Subpart DDDDD of Part 63—Demonstrating Continuous Compliance**

If you must meet the following operating limits or work practice standards . . .	You must demonstrate continuous compliance by . . .
1. Opacity	a. Collecting the opacity monitoring system data according to §63.7525(c) and §63.7535; and
	b. Reducing the opacity monitoring data to 6-minute averages; and
	c. Maintaining daily block average opacity to less than or equal to 10 percent or the highest hourly average opacity reading measured during the performance test run demonstrating compliance with the PM (or TSM) emission limitation.

6. Dry Scrubber Sorbent or Carbon Injection Rate	<p>a. Collecting the sorbent or carbon injection rate monitoring system data for the dry scrubber according to §§63.7525 and 63.7535; and</p> <p>b. Reducing the data to 30-day rolling averages; and</p> <p>c. Maintaining the 30-day rolling average sorbent or carbon injection rate at or above the minimum sorbent or carbon injection rate as defined in §63.7575.</p>
8. Emission limits using fuel analysis	<p>a. Conduct monthly fuel analysis for HCl or mercury or TSM according to Table 6 to this subpart; and</p> <p>b. Reduce the data to 12-month rolling averages; and</p> <p>c. Maintain the 12-month rolling average at or below the applicable emission limit for HCl or mercury or TSM in Tables 1 and 2 or 11 through 13 to this subpart.</p> <p>d. Calculate the HCl, mercury, and/or TSM emission rate from the boiler or process heater in units of lb/MMBtu using Equation 15 and Equations 17, 18, and/or 19 in §63.7530.</p>
9. Oxygen content	<p>a. Continuously monitor the oxygen content using an oxygen analyzer system according to §63.7525(a). This requirement does not apply to units that install an oxygen trim system since these units will set the trim system to the level specified in §63.7525(a)(7).</p> <p>b. Reducing the data to 30-day rolling averages; and</p> <p>c. Maintain the 30-day rolling average oxygen content at or above the lowest hourly average oxygen level measured during the CO performance test.</p>
10. Boiler or process heater operating load	<p>a. Collecting operating load data or steam generation data every 15 minutes.</p> <p>b. Reducing the data to 30-day rolling averages; and</p> <p>c. Maintaining the 30-day rolling average operating load such that it does not exceed 110 percent of the highest hourly average operating load recorded during the performance test according to §63.7520(c).</p>

**Performance Testing and Procedures:**

- 1) The permittee shall conduct performance tests, fuel analyses and/or tune-ups as required in §63.7515.
- 2) The permittee shall use the stack test procedures in §63.7520.
- 3) The permittee shall use the fuel analyses and fuel specification procedures in §63.7521.

**Monitoring:**

The permittee shall comply with the monitoring, installation, operation and maintenance requirements in §63.7525:

- a) The permittee must install, operate, and maintain an oxygen trim analyzer system as defined in §63.7575, or install, certify, operate and maintain continuous emission monitoring systems for CO and oxygen (or carbon dioxide) according to the procedures in §63.7525(a)(1) through (6).

**Recordkeeping and Reporting:**

- 1) The permittee must submit all of the notifications in §§63.7(b) and (c), 63.8(e), (f)(4) and (6), and 63.9(b) through (h) that apply by the dates specified. [§63.7545(a)]
- 2) The permittee must submit each report in Table 9 to this subpart that applies. [§63.7550(a)]

**Table 9 to Subpart DDDDD of Part 63—Reporting Requirements**

You must submit a(n)	The report must contain . . .	You must submit the report . . .
Compliance report	a. Information required in §63.7550(c)(1) through (5); and	Semiannually, annually, biennially, or every 5 years according to the requirements in §63.7550(b).
	b. If there are no deviations from any emission limitation (emission limit and operating limit) that applies to you and there are no deviations from the requirements for work practice standards for periods of startup and shutdown in Table 3 to this subpart that apply to you, a statement that there were no deviations from the emission limitations and work practice standards during the reporting period. If there were no periods during which the CMSs, including continuous emissions monitoring system, continuous opacity monitoring system, and operating parameter monitoring systems, were out-of-control as specified in §63.8(c)(7), a statement that there were no periods during which the CMSs were out-of-control during the reporting period; and	
	c. If you have a deviation from any emission limitation (emission limit and operating limit) where you are not using a CMS to comply with that emission limit or operating limit, or a deviation from a work practice standard for periods of startup and shutdown, during the reporting period, the report must contain the information in §63.7550(d); and	
	d. If there were periods during which the CMSs, including continuous emissions monitoring system, continuous opacity monitoring system, and operating parameter monitoring systems, were out-of-control as specified in §63.8(c)(7), or otherwise not operating, the report must contain the information in §63.7550(e)	

- 3) The permittee must keep a copy of each notification and report that was submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status or semiannual compliance report that was submitted according to the requirements in §63.10(b)(2)(xiv). [§63.7555(a)(1)]
- 4) The permittee must keep a copy of each record of each performance test, fuel analysis, or other compliance demonstrations and performance evaluations as required in §63.10(b)(2)(viii). [§63.7555(a)(2)]
- 5) Records must be in a form suitable and readily available for expeditious review according to §63.10(b)(1). [§63.7560(a)]
- 6) The permittee must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report or record. [§63.7560(b)]
- 7) The permittee must keep each record on site, or records must be accessible from on site for at least two years after the date of each occurrence, measurement, maintenance, corrective action, report or record according to §63.10(b)(1). The permittee may keep the records off site for the remaining three years. [§63.7560(c)]
- 8) The permittee shall report to the Air Pollution Control Program’s Compliance/Enforcement Section, P.O. Box 176, Jefferson City, Missouri 65102, no later than ten days after any exceedance of the emission limit, or any malfunction which causes an exceedance.
- 9) The permittee shall report any deviations/exceedances of this permit condition using the semi-annual monitoring report and annual compliance certification to the Air Pollution Control Program’s Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as required by 10 CSR 10-6.065(6)(C)1.C.(III).



<p><b>PERMIT CONDITION 4</b>          10 CSR 10-6.060 Construction Permits Required          Construction Permit 0494-020          10 CSR 10-6.070 New Source Performance Standards          40 CFR Part 60 Subpart Db Standards of Performance for Industrial-Commercial-Institutional Steam          Generating Units</p>
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Emission Unit	Description
EP20	Boiler 12- Package Boiler; natural gas/fuel oil; MHDR=325 MMBtu/hr; Constructed 1994; Manufacturer: Zurn

**Note:** The particulate matter, sulfur dioxide, nitrogen oxide, and opacity limits in 40 CFR Part 60 Subpart Db apply to this emission unit. However, the emission limits in Construction Permit 0494-020 are more stringent; therefore, the limits from Subpart Db are not listed as permit conditions. The monitoring, record keeping, and reporting requirements from Subpart Db are included.

**Emission Limitation:**

- 1) The permittee shall not permit or allow the emission rate of sulfur dioxide from Boiler 12 to exceed 0.051 pounds per million British thermal units when at maximum load (or 16.5 pounds per hour at lower load) on a thirty-day rolling average. [Special Condition 1]
- 2) The permittee shall not permit or allow the emission rate of nitrogen oxides from Boiler 12 to exceed 0.145 pounds per million British thermal units when at maximum load (or 46.4 pounds per hour at lower loads) on a thirty-day rolling average [Special Condition 2]
- 3) The permittee shall not permit or allow the emission rate of particulate matter from Boiler 12 to exceed 0.01 pounds per million British thermal units when at maximum load (or 3.25 pounds per hour at lower loads) on a thirty-day rolling average. [Special Condition 3]
- 4) The permittee shall not permit or allow emissions from Boiler 12 into the surrounding air any gases which exhibit opacity greater than 20% (six-minute average), except for one six-minute period per hour of not more than twenty-seven percent opacity. [Special Condition 4]
- 5) These standards shall apply at all times, except during periods of startup, shutdown, or malfunction. [Special Conditions 1, 2, and 3]

**Operational Limitation:**

- 1) The permittee shall not combust any fuel other than natural gas or No. 2 distillate oil in Boiler 12. [Special Condition 5]
- 2) The sulfur content of the distillate oil combusted in Boiler 12 shall not exceed 0.05 percent by weight. [Special Condition 6]
- 3) The permittee shall not sell and supply in excess of one-third of the potential electric output capacity of the boiler and associated electrical power generation turbines to any utility power distribution system. [Special Condition 7]

**Monitoring:**

- 1) In lieu of monitoring for the emissions of SO<sub>x</sub>, the permittee shall instead set up a tracking and recordkeeping procedure to ensure that the sulfur content of the distillate oil combusted in Boiler 12 will not exceed 0.05 percent by weight. The permittee will record the sulfur content of each shipment of distillate oil received for combustion in Boiler 12. All records shall be kept for a

period of at least two years, and shall be made immediately available to Department of Natural Resources' personnel upon request. [Modified Special Condition 1]

- 2) The applicant shall install, calibrate, maintain and operate continuous emission monitoring systems (CEMs) for measuring the opacity of the exhaust gases, for measuring the rate of emission of NO<sub>x</sub>, and for measuring either the oxygen or carbon dioxide levels in the flue gases from Boiler #12. These CEMs shall be sited, installed, maintained and operated as specified in CFR 40 Parts 60.45 and 60.45b. [Special Condition #8 and 40 CFR 60.48b(a) and (b)(1)]

**Particulate Matter and Nitrogen Oxides (Subpart Db):**

- 1) The continuous monitoring systems required for measuring NO<sub>x</sub> emissions shall be operated and data recorded during all periods of operation of the affected facility except for continuous monitoring system breakdowns and repairs. Data is recorded during calibration checks, and zero and span adjustments. [40 CFR 60.48(b)(c)]
- 2) The one-hour average nitrogen oxides emission rates measured by the continuous nitrogen oxides monitor shall be expressed in ng/J or pounds per million British thermal units heat input and shall be used to calculate the average emission rates under §60.44b. The one-hour averages shall be calculated using the data points required under §60.13(h)(2)
- 3) The procedures under §60.13 shall be followed for installation, evaluation, and operation of the continuous monitoring system. [40 CFR 60.48b(e)]
- 4) When nitrogen oxides emission data are not obtained because of continuous monitoring system malfunctions, repairs, calibration checks and zero and span adjustments, emission data will be obtained by using standby monitoring systems, Method 7, Method 7A, or other approved reference methods to provide emission data for a minimum of seventy-five percent of the operating hours in each steam generating unit operating day, in at least twenty-two out of thirty successive steam generating unit operating days. [40 CFR 60.48b(f)]

**Record Keeping:**

- 1) The permittee shall maintain records of the following information for Boiler 12 on a daily basis:
  - a) The calendar date;
  - b) The average hourly opacity rate, and nitrogen oxide emission rate in pounds per million British thermal units heat input;
  - c) The average nitrogen oxide emission rate (in pounds per million British thermal units heat input) calculated at the end of the steam generating unit operating day from the average hourly nitrogen oxide emission rates for the preceding 30 days (rolling average) of steam generating unit operation;
  - d) Identification of the steam generating unit operating days when the average nitrogen oxide emission rates are in excess of the permitted limits listed above under "Emissions Limitations," with the reasons for such exceedances as well as a description of corrective actions taken.
  - e) 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 the corrective actions taken;
  - f) Identification of the times when emissions data have been excluded for the calculation of average emission rates because of startup, shutdown, malfunction, or other reasons, and the reasons for excluding data at times other than startup, shutdown, or malfunction;
  - g) Identification of the times when the pollutant concentration exceeded the full span of the continuous monitoring system;

- h) Description of any modifications to the continuous monitoring system which could affect the ability of the continuous monitoring system to comply with the performance specifications.
- i) The sulfur content of the distillate oil used in this boiler. Fuel receipts from the fuel supplier shall be kept in accordance with Subpart Db, Section 60.49(r). [Special Condition 9] [40 CFR 60.49b(g)(1) through (9) and 40 CFR 60.49b(j) and (k)(1) through (9)]
- 2) All records shall be maintained by the permittee for a period of five years following the date of such record. [Special Condition 11] [40 CFR 60.49b(o)]

**Reporting:**

- 1) The permittee shall be required to submit a report for each semi-annual period during which excess emissions occur. (The permittee may elect to submit these reports on a quarterly basis.) No excess emissions report shall be submitted for any semi-annual reporting period during which Boiler 12 did not exceed either the opacity standard, the sulfur dioxide standard, or the nitrogen oxide standard. [Special Condition 10]
- 2) All reports shall be submitted to the Missouri Air Pollution Control Program Compliance/Enforcement Section, P.O. Box 176, Jefferson City, Missouri 65102.

**PERMIT CONDITION 5**  
 10 CSR 10-6.075 Maximum Achievable Control Technology Regulations  
 40 CFR Part 63 Subpart DDDDD National Emission Standards for Hazardous Air Pollutants for  
 Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters

Emission Unit	Description
EP20	Boiler 12- Package Boiler; natural gas/fuel oil; MHDR=325 MMBtu/hr; Constructed 1994; Manufacturer: Zurn
Boiler 12 is a unit designed to burn gas 1 subcategory and this is defined as any boiler or process heater that burns only natural gas, refinery gas, and/or other gas 1 fuels. Gaseous fuel boilers and process heaters that burn liquid fuel for periodic testing of liquid fuel, maintenance, or operator training, not to exceed a combined total of 48 hours during any calendar year, are included in this definition. Gaseous fuel boilers and process heaters that burn liquid fuel during periods of gas curtailment or gas supply interruptions of any duration are also included in this definition.	

**Emission Limitations For Liquid/ Light Liquid:**

- 1) The owner or operator must meet each work practice standard in Table 3 of 40 CFR Part 63, Subpart DDDDD that applies to the boiler or process heater. [§63.7500(a)(1)]
- 2) At all times the equipment, including associated air pollution control equipment and monitoring equipment must be operated and maintained in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance records, and inspection of the source. [§63.7500(a)(3)]
- 3) The permittee shall meet the applicable general requirements as specified in §63.7505.
- 4) The permittee shall follow the applicable parts of Table 10 in 40 CFR Part 63, Subpart DDDDD that determine which parts of the General Provisions in §63.1 through 63.15 that apply. [§63.7565]

**Notifications:**

The permittee shall submit to the delegated authority all of the notifications in §63.7(b) and (c), §63.8(e), (f)(4) and (6), and §63.9(b) through (h) that apply by the dates specified. [§63.7545(a)]

**Recordkeeping:**

- 1) The permittee shall retain a copy of each notification and report that the permittee submitted to comply with 40 CFR Part 63, Subpart DDDDD, including all documentation supporting any semi-annual compliance report that the permittee submitted, according to the requirements in §63.10(b)(2)(xiv). [§63.7555(a)(1)]
- 2) The permittee shall retain records of compliance demonstrations as required in §63.10(b)(2)(viii). [§63.7555(a)(2)]
- 3) Records shall be retained in a form suitable and readily available for expeditious review, according to §63.10(b)(1). [§63.7560(a)]
- 4) As specified in §63.10(b)(1), the permittee shall retain each record for five years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. [§63.7560(b)]
- 5) The permittee shall retain each record on site, or accessible from onsite (for example, through a computer network), for at least two years after the date of each occurrence, measurement, corrective action, report, or record, according to §63.10(b)(1). The permittee may retain the records off site for the remaining three years. [§63.7560(c)]
- 6) These records shall be made available for inspection to the Department of Natural Resources' personnel upon request.

**Reporting:**

- 1) The permittee shall submit the compliance report required by 40 CFR Part 63, Subpart DDDDD as part of the semi-annual monitoring report and compliance certification required by Section V of this permit as allowed by §63.7550(b)(5).
- 2) The compliance report shall contain the following information: [§63.7550(c)]
  - a) Company name and address.
  - b) Statement by the responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.
  - c) Date of report and beginning and ending dates of the reporting period.
  - d) Include the date of the most recent tune-up. Include the date of the most recent burner inspection if it was not done biennially and was delayed until the next schedule unit shutdown.

**PERMIT CONDITION 6**  
 10 CSR 10-6.075 Maximum Achievable Control Technology Regulations  
 40 CFR Part 63 Subpart DDDDD National Emission Standards for Hazardous Air Pollutants for  
 Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters

Emission Unit	Description
EP19	Biomass Boiler; Secondary Fuel: Natural Gas; MHDR=227 MMBtu/hr; Constructed 2013; Manufacturer: B&W; Control Device: Baghouse for PM <sub>10</sub> and SNCR for NO <sub>x</sub> emissions

**Emission Limitations:**

- 1) The permittee must meet the emission limits in Table 2 to 40 CFR Part 63 Subpart DDDDD. [§63.7500(a)(1)]

**Table 2 to 40 CFR Part 63 Subpart DDDDD – Emission Limits for Existing Boilers and Process Heaters**

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
Units in all subcategories designed to burn solid fuel	a. HCl	2.2E-02 lb per MMBtu of heat input	For M26A, Collect a minimum of 1 dscm per run; for M26, collect a minimum of 120 liters per run.
	b. Mercury	5.7E-06 lb per MMBtu of heat input	For M29, collect a minimum of 3 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 <sup>b</sup> collect a minimum of 3 dscm.
Fluidized bed units designed to burn biomass/bio-based solid	a. CO (or CEMS)	470 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (310 ppm by volume on a dry basis corrected to 3 percent oxygen, <sup>c</sup> 30-day rolling average)	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	1.1E-01 lb per MMBtu of heat input; or (1.2E-03 lb per MMBtu of heat input)	Collect a minimum of 1 dscm per run.

- 2) The permittee must meet the work practice standards listed in Table 3 of 40 CFR Part 63 Subpart DDDDD. [§63.7500(a)(1)]

**Table 3 to 40 CFR Part 63 Subpart DDDDD – Work Practice Standards**

If your unit is . . .	You must meet the following . . .
An existing or new boiler or process heater subject to emission limits in Table 1 or 2 or 11 through 13 to this subpart during startup	You must operate all CMS during startup. For startup of a boiler or process heater, you must use one or a combination of the following clean fuels: natural gas, synthetic natural gas, propane, distillate oil, syngas, ultra-low sulfur diesel, fuel oil-soaked rags, kerosene, hydrogen, paper, cardboard, refinery gas, and liquefied petroleum gas.
	If you start firing coal/solid fossil fuel, biomass/bio-based solids, heavy liquid fuel, or gas 2 (other) gases, you must vent emissions to the main stack(s) and engage all of the applicable control devices except limestone injection in fluidized bed combustion (FBC) boilers, dry scrubber, fabric filter, selective non-catalytic reduction (SNCR), and selective catalytic reduction (SCR). You must start your limestone injection in FBC boilers, dry scrubber, fabric filter, SNCR, and SCR systems as expeditiously as possible. Startup ends when steam or heat is supplied for any purpose.
	You must comply with all applicable emission limits at all times except for startup or shutdown periods conforming with this work practice. You must collect monitoring data during periods of startup, as specified in § 63.7535(b). You must keep records during periods of startup. You must provide reports concerning activities and periods of startup, as specified in § 63.7555.
An existing or new boiler or process heater subject to emission limits in Tables 1 or 2 or 11 through 13 to this subpart during shutdown	You must operate all CMS during shutdown. While firing coal/solid fossil fuel, biomass/bio-based solids, heavy liquid fuel, or gas 2 (other) gases during shutdown, you must vent emissions to the main stack(s) and operate all applicable control devices, except limestone injection in FBC boilers, dry scrubber, fabric filter, SNCR, and SCR.
	You must comply with all applicable emissions limits at all times except for startup or shutdown periods conforming with this work practice. You must collect monitoring data during periods of shutdown, as specified in § 63.7535(b). You must keep records during periods of shutdown. You must provide reports concerning activities and periods of shutdown, as specified in § 63.7555.

- 3) The permittee must meet the applicable operating limits in Table 4 of 40 CFR Part 63 Subpart DDDDD. [§63.7500(2)]

**Table 4 of 40 CFR Part 63 Subpart DDDDD – Operating Limits for Boilers and Process Heaters**

When complying with a Table 1, 2, 11, 12, or 13 numerical emission limit using . . .	You must meet these operating limits . . .
3. Fabric filter control on units not using a PM CPMS	a. Maintain opacity to less than or equal to 10 percent opacity (daily block average); or
	b. Install and operate a bag leak detection system according to §63.7525 and operate the fabric filter such that the bag leak detection system alert is not activated more than 5 percent of the operating time during each 6-month period.

- 4) At all times, the permittee must operate and maintain the affected sources, including associated air pollution control equipment and monitoring equipment, in an manner consistent with safety and good air pollution control practices for minimizing emissions. [§63.7500(3)]

- 5) The standards apply at all times the affected unit is operating, except during periods of startup and shutdown during which time the standards in Table 3 of 40 CFR part 63 Subpart DDDDD apply. [§63.7500(3)(f)]

**Continuing Compliance:**

- 1) For each boiler that demonstrates compliance with the Hydrogen Chloride (HCl), mercury (Hg), or TSM limits through fuel analysis, the initial compliance requirement is to conduct a fuel analysis for each type of fuel burned in the boiler according to §63.7521 and Table 6 of 40 CFR Part 63 Subpart DDDDD. And establish operating limits according to §63.7530 and Table 8 of 40 CFR Part 63 Subpart DDDDD. [§63.7510(b)]

**Table 8 to Subpart DDDDD of Part 63—Demonstrating Continuous Compliance**

If you must meet the following operating limits or work practice standards . . .	You must demonstrate continuous compliance by . . .
1. Opacity	a. Collecting the opacity monitoring system data according to §63.7525(c) and §63.7535; and
	b. Reducing the opacity monitoring data to 6-minute averages; and
	c. Maintaining daily block average opacity to less than or equal to 10 percent or the highest hourly average opacity reading measured during the performance test run demonstrating compliance with the PM (or TSM) emission limitation.
3. Fabric Filter Bag Leak Detection Operation	Installing and operating a bag leak detection system according to §63.7525 and operating the fabric filter such that the requirements in §63.7540(a)(7) are met.
8. Emission limits using fuel analysis	a. Conduct monthly fuel analysis for HCl or mercury or TSM according to Table 6 to this subpart; and
	b. Reduce the data to 12-month rolling averages; and
	c. Maintain the 12-month rolling average at or below the applicable emission limit for HCl or mercury or TSM in Tables 1 and 2 or 11 through 13 to this subpart.
	d. Calculate the HCl, mercury, and/or TSM emission rate from the boiler or process heater in units of lb/MMBtu using Equation 15 and Equations 17, 18, and/or 19 in §63.7530.
9. Oxygen content	a. Continuously monitor the oxygen content using an oxygen analyzer system according to §63.7525(a). This requirement does not apply to units that install an oxygen trim system since these units will set the trim system to the level specified in §63.7525(a)(7).
	b. Reducing the data to 30-day rolling averages; and
	c. Maintain the 30-day rolling average oxygen content at or above the lowest hourly average oxygen level measured during the CO performance test.
10. Boiler or process heater operating load	a. Collecting operating load data or steam generation data every 15 minutes.
	b. Reducing the data to 30-day rolling averages; and
	c. Maintaining the 30-day rolling average operating load such that it does not exceed 110 percent of the highest hourly average operating load recorded during the performance test according to §63.7520(c).

- 2) The permittee must demonstrate continuous compliance with each emission limit, the work practice standards and the operating limits according to the methods specified in Table 8 of Subpart DDDDD. [§63.7540(a)]

**Performance Testing and Procedures:**

- 1) The permittee shall conduct performance tests, fuel analyses and/or tune-ups as required in §63.7515.
  - a) The permittee shall conduct all applicable performance tests according to §63.7520 on an annual basis, except as specified in paragraphs (b) through (e), (g) and (h) of §63.7515. Annual performance tests must be completed no more than 13 months after the previous performance test except as specified in paragraphs (b) through (e), (g), and (h) of §63.7515.
  - b) If the performance tests for a given pollutant for at least 2 consecutive years show that the emissions are at or below 75% of the emission limit (or in limited instances as specified in Tables 1 and 2 or 11 through 13 of this subpart, at or below the emission limit) for the pollutant, and if there are no changes in the operation of the individual boiler or air pollution control equipment that could increase emissions, the permittee may choose to conduct performance tests for the pollutant every third year. Each such performance test must be conducted no more than 37 months after the previous performance test. If the permittee elects to demonstrate compliance using emission averaging under §63.7522, the permittee must continue to conduct performance tests annually. The requirement to test at maximum chloride input level is waived unless the stack test is conducted for HCl. The requirement to test at maximum mercury input level is waived unless the stack test is conducted for mercury. [§63.7515(b)]
  - c) If a performance test shows emissions exceeded the emission limit or 75% of the emission limit (as specified in Tables 1 and 2 or 11 through 13 of this subpart) for a pollutant, the permittee must conduct annual performance tests for that pollutant until all performance tests over a consecutive 2-year period meet the required level. [§63.7515(c)]
  - d) The permittee must conduct a monthly fuel analysis according to §63.7521 for each type of fuel burned that is subject to an emission limit. The permittee may comply with this monthly requirement by completing the fuel analysis any time within the calendar month as long as the analysis is separated from the previous analysis by at least 14 calendar days. The permittee must conduct a fuel analysis before a new type of fuel is burned. If each of 12 consecutive monthly fuel analyses demonstrates 75 percent or less of the compliance level, the permittee may decrease the fuel analysis frequency to quarterly for that fuel. If any quarterly sample exceeds 75 percent of the compliance level or if a new fuel is burned, the permittee must return to monthly monitoring for that fuel, until 12 months of fuel analyses are again less than 75 percent of the compliance level. [§63.7515(e)]
- 2) The permittee shall use the stack test procedures in §63.7520.
- 3) The permittee shall use the fuel analyses and fuel specification procedures in §63.7521.

**Monitoring:**

The permittee shall comply with the monitoring, installation, operation and maintenance requirements in §63.7525:

- a) The permittee must install, operate, and maintain an oxygen trim analyzer system as defined in §63.7575, or install, certify, operate and maintain continuous emission monitoring systems for CO and oxygen (or carbon dioxide) according to the procedures in §63.7525(a)(1) through (6).
- b) For boilers with an average annual heat input rate greater than 250 MMBtu/hour from solid fossil fuel and/or heavy liquid fuel: If the permittee is demonstrating compliance with the PM limit



instead of the alternative TSM limit, the permittee must install, maintain, and operate a PM CPMS to monitor emissions and record the output of the system as specified in §63.7525(b)(1) through (4).

**Recordkeeping and Reporting:**

- 1) The permittee must submit all of the notifications in §§63.7(b) and (c), 63.8(e), (f)(4) and (6), and 63.9(b) through (h) that apply, by the dates specified. [§63.7545(a)]
- 2) The permittee must submit each report in Table 9 to this subpart that applies. [§63.7550(a)]

**Table 9 to Subpart DDDDD of Part 63—Reporting Requirements**

You must submit a(n)	The report must contain . . .	You must submit the report . . .
Compliance report	a. Information required in §63.7550(c)(1) through (5); and	Semiannually, annually, biennially, or every 5 years according to the requirements in §63.7550(b).
	b. If there are no deviations from any emission limitation (emission limit and operating limit) that applies to you and there are no deviations from the requirements for work practice standards for periods of startup and shutdown in Table 3 to this subpart that apply to you, a statement that there were no deviations from the emission limitations and work practice standards during the reporting period. If there were no periods during which the CMSs, including continuous emissions monitoring system, continuous opacity monitoring system, and operating parameter monitoring systems, were out-of-control as specified in §63.8(c)(7), a statement that there were no periods during which the CMSs were out-of-control during the reporting period; and	
	c. If you have a deviation from any emission limitation (emission limit and operating limit) where you are not using a CMS to comply with that emission limit or operating limit, or a deviation from a work practice standard for periods of startup and shutdown, during the reporting period, the report must contain the information in §63.7550(d); and	
	d. If there were periods during which the CMSs, including continuous emissions monitoring system, continuous opacity monitoring system, and operating parameter monitoring systems, were out-of-control as specified in §63.8(c)(7), or otherwise not operating, the report must contain the information in §63.7550(e)	

- 3) The permittee must keep a copy of each notification and report that was submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status or semiannual compliance report that was submitted according to the requirements in §63.10(b)(2)(xiv). [§63.7555(a)(1)]
- 4) The permittee must keep a copy of each record of each performance test, fuel analysis, or other compliance demonstrations and performance evaluations as required in §63.10(b)(2)(viii). [§63.7555(a)(2)]
- 5) Records must be in a form suitable and readily available for expeditious review according to §63.10(b)(1). [§63.7560(a)]
- 6) The permittee must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report or record. [§63.7560(b)]
- 7) The permittee must keep each record on site, or records must be accessible from on site for at least two years after the date of each occurrence, measurement, maintenance, corrective action, report or record according to §63.10(b)(1). The permittee may keep the records off site for the remaining three years. [§63.7560(c)]

- 8) The permittee shall report to the Air Pollution Control Program’s Compliance/Enforcement Section, P.O. Box 176, Jefferson City, Missouri 65102, no later than ten days after any exceedance of the emission limit or any malfunction which causes an exceedance.
- 9) The permittee shall report any deviations/exceedances of this permit condition using the semi-annual monitoring report and annual compliance certification to the Air Pollution Control Program’s Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as required by 10 CSR 10-6.065(6)(C)1.C.(III).

**PERMIT CONDITION 7**  
 40 CFR Part 60 Subpart Db  
 New Source Performance Standards for Industrial-Commercial-Institutional Steam Generating Units

Emission Unit	Description
EP19	Biomass Boiler; Secondary Fuel: Natural Gas; MHDR=227 MMBtu/hr; Constructed 2013; Manufacturer: B&W; Control Device: Baghouse for PM <sub>10</sub> and SNCR for NOx emissions

**Emission Limitations:**

- 1) The permittee shall not cause to be discharged into the atmosphere any gases from the Biomass Boiler that exhibit greater than 20% opacity (6-minute average), except for one 6-minute period per hour of not more than 27% opacity. [§60.43b(f)]
- 2) The permittee shall not cause to be discharged into the atmosphere from the Biomass Boiler any gases that contain PM in excess of 13 ng/J (0.03 lb/MMBtu) heat input. [§60.43b(h)(1)]
- 3) The PM and opacity standards apply at all times, except during periods of startup, shutdown, or malfunction. [§60.43b(g)]

**Monitoring/Testing:**

- 1) Compliance with the PM emission standard shall be determined through performance testing as required under §60.8, and shall conduct subsequent performance tests as requested by the Director, using the procedures and reference methods of §60.46(b)(d). [§60.46b(a) and (d)]
- 2) The permittee shall install, calibrate, maintain and operate a continuous opacity monitoring system. [§60.48b(a)]
- 3) The span value for the COMS shall be between 60 and 80 percent. [§60.48(e)(1)]

**Reporting and Recordkeeping:**

- 1) The permittee shall submit to the director notification of startup and the performance test data from the initial performance test. [§60.49b(a) and (b)]
- 2) The permittee shall record and maintain records of the amounts of each fuel combusted during each day and calculate the annual capacity factor individually for each fuel 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)]
- 3) The permittee shall maintain records of opacity. [§60.49b(f)]
- 4) The permittee is required to submit excess emission reports for any excess emissions that occurred during the reporting period. [§60.49b(h)]
- 5) All records shall be maintained by the permittee for a period of five years following the date of such record. [§60.49b(o)]

- 6) The permittee shall maintain records of the following information for each steam generating unit operating day: [§60.49b(p)(1)-(3)]
  - a) Calendar date;
  - b) The number of hours of operation; and
  - c) A record of the hourly steam load.
- 7) The reporting period for the reports is each six month period. All reports shall be submitted to the Director and shall be postmarked by the 30<sup>th</sup> day following the end of the reporting period. [§60.49b(2)]
- 8) The permittee shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, Missouri 65102, no later than ten days after any exceedance of the emission limit, or any malfunction which causes an exceedance.
- 9) The permittee shall report any deviations/exceedances of this permit condition using the semi-annual monitoring report and annual compliance certification to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as required by 10 CSR 10-6.065(6)(C)1.C.(III).

**PERMIT CONDITION 8**  
 10 CSR 10-6.060 Construction Permits Required  
 Construction Permit 042010-002 Amendment, Issued March 31, 2017

Emission Unit	Description
EP19	Biomass Boiler; Secondary Fuel: Natural Gas; MHDR=227 MMBtu/hr; Constructed 2013; Manufacturer: B&W; Control Device: Baghouse for PM <sub>10</sub> and SNCR for NO <sub>x</sub> emissions

**Operating and Emission Limitations:**

- 1) The boiler shall be fired with biomass as the primary fuel. Heat input to the main boiler shall not exceed 227 MMBtu per hour. [Special Condition 2.A]
- 2) The boiler shall not use more than 195 MMCF per year of natural gas. [Special Condition 2.B]
- 3) The boiler shall use no other fuels other than the biofuels listed below and natural gas without receiving prior written authorization from the Air Pollution Control Program: [Special Condition 2.C]
  - a) Acceptable biomass fuels include:
    - i. Woody biomass;
    - ii. Agricultural fiber by-products;
    - iii. Tree nuts shells and hulls;
    - iv. Energy crops which include grasses and fiber crops;
    - v. Biomass fiber by-products including waste papers and fiber from biofuel production; and
    - vi. A blend of any of the above fuels.
  - b) Unacceptable biomass fuels include, but are not limited to:
    - i. Peat;
    - ii. Waste Oil;
    - iii. Farm Chemicals;
    - iv. Pesticide Containers;
    - v. Contaminated soil\*;
    - vi. Demolition waste, except for untreated/unstained/unpainted clean wood;

- vii. Treated wood [chromated copper arsenate (CCA), pentachlorophenol (PCP), painted and stained];
  - viii. Contaminated feedstock\*;
  - ix. Contaminated agricultural grains\*;
  - x. Waste from farms from an open dump
  - xi. Tired derived fuel, tires;
  - xii. Non-agricultural industrial process wastes.  
\*Contaminated means it is no longer fit for its intended use due to contact with some chemical.
- 4) A fabric filtration system (baghouse) shall be used for the control of filterable particulate matter less than ten (10) microns in diameter (PM<sub>10</sub>) emissions from the biomass boiler. [Special Condition 2.D.1]
- 5) Selective Non-Catalytic Reduction (SNCR) shall be used for the control of nitrogen oxide (NO<sub>x</sub>) emissions from the biomass boiler, as necessary to comply with the NO<sub>x</sub> emissions limit. [Special Condition 2.D.2]
- 6) The following emission limits apply to the biomass-fired bubbling fluidized bed boiler (BFB-1):
- a) The permittee shall emit less than ten (10.0) tons individually or twenty-five (25) tons combined of Hazardous Air Pollutants (HAPs) from the biomass boiler in any consecutive 12-month period. [Special Condition 2.E.1]
  - b) The permittee shall emit less than 111.6 tons of nitrogen oxides (NO<sub>x</sub>) from the biomass boiler in any consecutive 12-month period. [Special Condition 2.E.2]
  - c) The permittee shall not discharge the following pollutant into the atmosphere in excess of the listed amounts: [Special Condition 2.E.3]
    - i. PM<sub>10</sub> filterable – 1.14 pounds per hour
    - ii. PM condensable – 3.86 pounds per hour
    - iii. Carbon monoxide (CO) – 68.1 pounds per hour
  - d) If an optional CO CEMS is installed, the permittee shall comply with the following limit in lieu of CO limit listed above (68.1 lbs per hour): the permittee shall emit less than 298.28 tons of CO from the biomass boiler in any consecutive 12-month period. [Special Condition 2.E.4]
  - e) The permittee shall emit less than 0.264 pounds of 2,3,7,8-Tetrachlorodibenzo-p-dioxins (TCDD) toxic equivalents (TEQ) from the biomass-fired boiler in any consecutive 12-month period. [Special Condition 2.E.5]

**Compliance Testing:**

- 1) Initial performance testing shall be conducted for each biofuel in order to establish emission factors for aggregate HAPs and individual HAP in pounds per ton and pounds per MMBtu. These emission factors established in the performance testing shall be used in Attachments E and F in order to show compliance with the HAP emission limits. [Special Condition 4.A]
- 2) Initial performance testing shall be conducted for each biofuel or biofuel blend in order to verify that the PM<sub>10</sub> filterable and PM condensable limits are not exceeded from the biomass boiler stack. In addition, testing shall be conducted on direct particulate matter less than 2.5 microns in diameter (PM<sub>2.5</sub>). The permittee shall show continued compliance with the PM<sub>10</sub> filterable limit by following the applicable monitoring or testing requirements listed in the Compliance Assurance Monitoring (CAM) Plan. [Special Condition 4.B]
- 3) The following HAPs shall be quantified in order to be used in demonstrating compliance with the HAP limits: [Special Condition 4.C]
  - a) Acetaldehyde;

- b) Benzene;
  - c) Chlorine
  - d) Dichloromethane;
  - e) Formaldehyde;
  - f) Hydrogen Chloride (HCl);
  - g) Methanol;
  - h) Styrene;
  - i) Toluene.
- 4) Compliance with the NO<sub>x</sub> emission limits for the biomass boiler shall be demonstrated through the use of CEMS. [Special Condition 4.D]
  - 5) Initial performance testing shall be conducted for each biofuel in order to verify that the CO emission rate is not exceeded from the biomass boiler stack. The permittee shall conduct CO stack testing every five (5) years for each biofuel or biofuel blend in order to verify continued compliance with the emission limit. [Special Condition 4.E]
  - 6) Optional: The permittee may install a CO CEMS to show compliance with the CO emission limit. In the event that the permittee installs a CO CEMS, performance testing every five years for CO will not be required. [Special Condition 4.E]
  - 7) In order to obtain a waiver from all or a portion of compliance testing required by 1), 2) and 5) above, the permittee may submit an emissions analysis to the Department of Natural Resources. The analysis must contain sufficient documentation to show compliance with the emissions limits and/or rates while burning the new biofuel or biofuel blend. Upon review of the supplied documentation, the Department will provide written authorization in the event that they agree with the assessment provided. The emissions analysis documentation shall include at minimum the following: [Special Condition 4.F]
    - a) A fuel analysis of the biomass including at minimum: moisture content, ash content, higher heating value, sulfur content, and chlorine content;
    - b) An analysis of each pollutant's expected potential emissions. Testing, studies or other resources may be used to make the justification for the proposed potential emissions;
    - c) Optional: A mass balance method approved by the Department of Natural Resources showing compliance may be used in lieu of testing.
  - 8) The Permittee may establish an emissions profile for each specific HAP and filterable PM<sub>10</sub>. To establish the emission profile, the permittee shall conduct a minimum of one stack test per biofuel or biofuel blend conducted in accordance to Conditions 1) and 2) above. Based upon biomass sampling and the associated stack testing, the profile and a current biomass analysis may be used to show continued compliance with the HAP emission limits and the PM<sub>10</sub> filterable emission limit. [Special Condition 4.G]
  - 9) The performance/certification tests shall be performed within 90 days of achieving the maximum production rate, but no later than 180 days after initial startup. [Special Condition 4.I]
  - 10) The date on which performance/certification tests are conducted and the date on which the initial and subsequent stack tests are conducted shall be pre-arranged with the Air Pollution Control Program a minimum of 30 days prior to the proposed test so that a pretest meeting may be arranged if necessary, and to assure that the test date is acceptable for an observer to be present. A completed Proposed Test Plan form may serve the purpose of notification and must be approved by the Air Pollution Control Program prior to conduction the required emission testing. [Special Condition 4.J]
  - 11) One (1) copy of a written report of the test results shall be submitted to the Director of the Air Pollution Control Program within 30 days of completion of any required testing. The report must include legible copies of the raw data sheets, analytical instrument laboratory data, and complete

- sample calculations from the required EPA method for at least one (1) sample run. [Special Condition 4.K]
- 12) If the performance testing indicates that any of the emission limits is being exceeded, the permittee must propose a plan to the Air Pollution Control Program within 30 days of submitting the performance test results. This plan must demonstrate how the permittee will reduce the emission rates below the limits. The permittee shall implement any such plan immediately upon its approval by the Director. [Special Condition 4.L]
- 13) Pre-Authorization of Additional Biomass Fuel Testing: [Special Condition 5.A through C]
- The permittee is pre-authorized to conduct test burns of acceptable biomass fuels for the purposes of testing technical feasibility and developing emission factors.
  - The test burn shall not exceed 90 days from the first day the additional biomass is burned.
  - The permittee shall notify the Compliance/Enforcement section of the Air Pollution Control Program of any test burns.
  - Records of the amounts of biomass burned as well as the dates of the test burns shall be maintained.
- 14) If the results of the performance testing shows that the emission rates for filterable PM<sub>10</sub>, condensable PM, NO<sub>x</sub> or CO are greater than those used in the emissions analysis for Construction Permit 042010-002, the permittee shall evaluate what effects these higher emission rates would have on the permit applicability of the project. The permittee shall submit the results of any such evaluation in a timely manner for Air Pollution Control Program review and approval. [Special Condition 7]

**Record Keeping and Reporting:**

- The permittee shall maintain a record of emission verification data for all applicable pieces of equipment including CEMS data. [Special Condition 8.A]
- The permittee shall maintain a record of fuel input to the biomass boiler and have monthly fuel analysis available to include higher heat value (HHV) for demonstrating compliance with heat input rate limit of the boiler. [Special Condition 8.B]
- The permittee shall maintain a record of natural gas used in the biomass boiler to demonstrate compliance with the natural gas usage limit. [Special Condition 8.C]
- The permittee shall maintain an operational log, which shall detail each startup, shutdown, and malfunction of the biomass boiler and associated pollution control systems. This operations log shall include a running total of the hours per year the biomass boiler is on-line and a record of the amount and type of biomass. [Special Condition 8.D]
- The permittee shall maintain inspection, maintenance, and repair log(s) for the biomass boiler. [Special Condition 8.E]
- The permittee shall record at minimum the analysis of higher heating value, ash, and moisture content of monthly fuel samples composited weekly of biomass that is delivered to the installation, using a sample that is collected in a manner representative of the month's shipment. Compliance with this condition may be demonstrated by recoding the analytical results from the fuel supplier. [Special Condition 8.F]
- Attachments E1 and E2 or equivalent forms approved by the Air Pollution Control Program shall be used to demonstrate compliance with the HAP emission limits. [Special Condition 8.I]
- The permittee shall maintain all records for not less than five (5) years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. [Special Condition 8.J]

- 9) The permittee shall report to the Air Pollution Control Program’s Compliance/Enforcement Section, P.O. Box 176, Jefferson City, Mo 65102, no later than 10 days after the end of the month during which operation of equipment at this installation is not in accordance with any emissions or operational limitation or condition stated above. [Special Condition 8.K]

**PERMIT CONDITION 9**  
 40 CFR Part 64 Compliance Assurance Monitoring

Emission Unit	Description
EP19	Biomass Boiler; Secondary Fuel: Natural Gas; MHDR=227 MMBtu/hr; Constructed 2013; Manufacturer: B&W; Control Device: Baghouse for PM10 and SNCR for NOx emissions
The following CAM plan is required to demonstrate compliance with the PM <sub>10</sub> limit from Construction Permit 042010-002 in Permit Condition 9: The permittee shall not discharge PM <sub>10</sub> filterable in excess of 1.14 pounds per hour.	

**Monitoring:**

- 1) The permittee shall install, certify, operate and maintain a triboelectric monitor (Bag Leak Detector) at the Biomass Boiler baghouse exhaust.
- 2) The permittee shall install, certify, operate and maintain a certified Continuous Opacity Monitoring System (COMS) with an automated data acquisition and handling system for measuring and recording the opacity (in percent opacity in order to provide a reasonable assurance of the performance of the baghouse. Previously installed and certified monitoring systems that conform to provisions of the Performance Specification for COMS meet the monitoring requirements.
- 3) The performance requirements for the Bag Leak Detector and the COMS shall be as specified in Table 1: University of Missouri-Power Plant – CAM Monitoring Approach.
- 4) An excursion and its associated averaging time for each emission unit shall be as specified in Table 1: University of Missouri-Power Plant – CAM Monitoring Approach.
- 5) The permittee shall conduct monitoring continuously except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities, in accordance with 40 CFR 64.7(c). Although compliance with the PM emission limitation may be exempted in some circumstances during conditions such as startup, shutdown, and malfunction, the permittee is required to operate and maintain the source in accordance with good air pollution control practices for minimizing emissions during such periods. This requires the permittee to minimize periods of startup, shutdown or malfunction, and take corrective action to restore normal operation and prevent recurrence of the problem that led to the excursion except where the excursion was related to an excused startup, shutdown, or malfunction.

<b>Table 1: University of Missouri – Power Plant CAM Monitoring Approach for EP-19 Biomass Boiler</b>		
<b>Particulate Matter (PM<sub>10</sub>) Compliance Indicator</b>		
Indicator	Opacity from flue gas exhaust	Bag Leak Detector
Measurement Approach	Continuous Opacity Monitoring System (COMS) located in flue gas exhaust system	A triboelectric monitor is installed at the baghouse exhaust. An alarm will sound when the signal remains over a preset limit for 15 seconds to indicate a broken filter bag.

Indicator Range	<p>The opacity indicator range is a collection of all 1-minute and 6-minute averages over a discrete 1-hour period. The 1-hour averages will be collected to calculate a 24-hour block average opacity for the Biomass Boiler. The 24-hour average baseline opacity level is less than or equal to 10.0 percent.</p> <p>An excursion is defined as a measured stack opacity greater than 10.0 percent, excluding those events defined as startup, shutdown or malfunction</p> <p>Excursions trigger an inspection, corrective action, and a reporting requirement</p>	<p>An excursion is defined as a triboelectric signal greater than 70 percent of scale for 15 seconds.</p> <p>Excursions trigger an inspection, corrective action, and a reporting requirement.</p>
QIP Threshold	<p>The QIP threshold for any individual emission unit is 9 excursion events in a 6-month reporting period. If an emission unit reaches the QIP threshold, the permittee shall submit a QIP for that unit along with the Semiannual Monitoring Report for that reporting period.</p>	
<b>Performance Criteria</b>		
Data Representativeness	<p>Opacity is related to the size and concentration of particles in the flue gas. As particulate mass emissions increase, it can be reasonably expected that stack opacity will also increase.</p> <p>The boiler baghouse discharges to a dedicated stack with no bypass capabilities. The emission unit is equipped with a COMS that meets the installation and minimum acceptable accuracy requirements as specified in the applicable version of 40 CFR Part 60, Appendix B, Performance Specification 1 (PS-1). The COMS is located downstream of the baghouse and, therefore, reflects the performance of the control device.</p>	<p>The probe is located inside the baghouse exhaust duct. The triboelectric signal is directly proportional to the amount of particulate in the exhaust if factors such as velocity and particle size remain relatively constant.</p>
Verification of Operational Status	<p>Opacity readings are monitored continuously in the control room. The COMS outputs an alarm whenever a monitor malfunction occurs</p>	N/A
QA/QC Practices and Criteria	<p>COMS installed via PS-1. Daily Zero and Span drift checks are performed. Annual filter audits are performed. Filters are calibrated and certified annually.</p>	<p>The triboelectric probe is inspected periodically for dust buildup per manufacturer's recommendations.</p>
Monitoring Frequency	<p>Continuously. The opacity following the baghouse is monitored continuously and used to calculate 1-minute averages. All 1-minute averages are used to calculate and store 6-minute and 1-hour opacity data, except for periods of quality assurance and other maintenance activities. 1-hour opacity averages will be used to calculate the 24-hour block average used as the CAM monitoring indicator.</p>	<p>The triboelectric signal is monitored continuously by the process control system.</p>
Averaging Period	<p>The 10-second opacity data are used to calculate 1-minute averages. The 1-minute data are used to calculate the 6-minute and 1-hour average opacity, which is used to create a 24-hour block average of opacity.</p>	None.



Data Collection Procedure	The DAHS retains all 6-minute, hourly, and 24-hour average opacity data for five years	One hour of data are displayed in the control room at 2 second intervals. When an alarm occurs (signal over 70 percent for 15 seconds), it is logged electronically.
Corrective Action	Upon detecting an excursion, the permittee shall investigate the cause of the excursion and restore operation of the control device to its normal manner of operation as expeditiously as possible.	
Reporting	Summary information of the number, duration, and cause for any excursion events and COMS downtime will be reported on a semiannual basis in the Semiannual Monitoring Report for the Part 70 Operating Permit. COMS downtime will be reported in the quarterly emissions monitoring report.	Summary information of the number, duration, and cause for any excursions and monitoring downtime will be reported in the quarterly emissions monitoring report.

- 6) *Proper Maintenance.* At all times, the permittee shall maintain the monitoring equipment, including but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment. (40 CFR 64.7(b))
- 7) *Continued Operation.* Except for monitoring malfunctions, associated repairs, and required quality assurance or control activities (including calibration checks and required zero and span adjustments), the permittee shall conduct all monitoring in continuous operation at all times that the boiler is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for data averages and calculations, or fulfilling a minimum data availability requirement. The permittee shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. (40 CFR 64.7(c))
- 8) The permittee shall follow the procedures below in response to excursions or exceedances:
  - a) Upon detecting an excursion or exceedance, the permittee shall restore operation of the Biomass Boiler (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable. (40 CFR 64.7(d)(1))
  - b) Determination of whether the permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include but is not limited to, monitoring results, review of operation and maintenance procedures and records, and inspection of the control device, associated capture system, and the process. (40 CFR 64.7(d)(2))

Quality improvement plan (QIP):

- 1) The Air Pollution Control Program (APCP) may require the permittee to develop and implement a QIP if the Biomass Boiler has accumulated nine excursions in a six-month reporting period. The QIP shall be submitted as part of the Annual Compliance Certification (ACC) Statement for the entire calendar year reporting period.

- 2) Elements of a QIP: [§64.8(b)]
  - a) The permittee shall maintain a written QIP, if required, and have it available for inspection. [§64.8(b)(1)]
  - b) The plan initially shall include procedures for evaluating the control performance problems and, based on the results of the evaluation procedures, the owner or operator shall modify the plan to include procedures for conducting one or more of the following actions, as appropriate: [§64.8(b)(2)]
    - i) Improved preventive maintenance practices. [§64.8(b)(2)(i)]
    - ii) Process operation changes. [§64.8(b)(2)(ii)]
    - iii) Appropriate improvements to control methods. [§64.8(b)(2)(iii)]
    - iv) Other steps appropriate to correct control performance. [§64.8(b)(2)(iv)]
    - v) More frequent or improved monitoring (only in conjunction with one or more steps under paragraphs (b)(2)(i) through (iv) of this section). [§64.8(b)(2)(v)]
- 3) If a QIP is required, the permittee shall develop and implement a QIP as expeditiously as practicable and shall notify the permitting authority if the period for completing the improvements contained in the QIP exceeds 180 days from the date on which the need to implement the QIP was determined. [§64.8(c)]
- 4) Following implementation of a QIP, upon any subsequent determination pursuant to §64.7(d)(2) the Administrator or the permitting authority may require that the permittee make reasonable changes to the QIP if the QIP is found to have: [§64.8(d)]
  - a) Failed to address the cause of the control device performance problems; or [§64.8(d)(1)]
  - b) Failed to provide adequate procedures for correcting control device performance problems as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. [§64.8(d)(2)]
- 5) Implementation of a QIP shall not excuse the permittee from compliance with any existing emission limitation or standard, or any existing monitoring, testing, reporting or recordkeeping requirement that may apply under federal, state, or local law, or any other applicable requirements under the Act. [§64.8(e)]

**Recordkeeping:**

- 1) *General Recordkeeping Requirements.* The permittee shall comply with the recordkeeping requirements specified in 40 CFR 70.6(a)(3)(ii). The permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to 40 CFR 64.8 and any activities undertaken to implement a quality improvement plan (QIP), and other supporting information required to be maintained under part 64 (40 CFR Part 64.9(b)(1)). Recordkeeping requirements of 40 CFR 70.6(a)(3)(ii) include the following:
  - a) The date, place, and time of sampling or measurements;
  - b) The date(s) analyses were performed;
  - c) If applicable, the company or entity that performed the analyses;
  - d) The analytical techniques or methods used;
  - e) The results of such analyses; and
  - f) The operating conditions as existing at the time of sampling or measurement.
- 2) The permittee shall maintain a file of the following information:
  - a) All information reported in the quarterly summaries including:
    - i) All data collected by the bag leak detector system;
    - ii) Records of alarm sounding by the bag leak detector system;
    - iii) The charts or printouts generated by the COMS, where applicable;

- iv) An opacity summary report;
  - v) An excess opacity emission summary;
  - vi) An excess opacity emission summary list;
  - vii) An opacity monitoring downtime summary list; and
  - b) All one-hour opacity averages and daily Quality Assurance (QA)/Quality Control (QC) records. This includes, but is not restricted to the daily monitoring system calibration check done on the continuous opacity monitoring system.
- 3) The permittee may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, instead of paper provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements. (40 CFR 64.9(b)(2))
- 4) The permittee shall retain records of all required monitoring data and support information for a period of at least five (5) years from the date of the monitoring sample, measurement, report, or application. Support information includes all required calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all required reports (including any written Quality Improvement Plan (QIP), if QIP is required.
- 5) These records shall be made available immediately for inspection to the Department of Natural Resources' personnel upon request.

**Reporting:**

- 1) *General Reporting Requirements.* The permittee shall submit semi-annual monitoring certified by a responsible official. The report shall include, at a minimum, the following information, as applicable:
- a) All instances of deviations from permit requirements must be clearly identified;
  - b) Prompt reporting of deviations from permit requirements, including those attributable to upset conditions as defined in the permit, the probable cause of such deviations, and any corrective actions or preventive measures taken;
  - c) All instances of the bag leak detection system alarm sounding indicating a broken bag filter.
  - d) The one-hour average opacity values greater than the opacity emission requirements (the average of the values shall be obtained by using the procedures specified in the Reference Method used to determine the opacity of the visible emissions);
  - e) Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective actions taken;
  - f) Summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable); and
  - g) A description of the actions taken to implement a QIP during the reporting period as specified in 40 CFR 64.8, if a QIP is required. Upon completion of a QIP, the permittee shall include in the next summary report documentation that the implementation of the plan has been completed and reduced the likelihood of similar levels of excursions or exceedances occurring.
- 2) *Performance Testing.*
- a) The permittee shall submit operating parameter data obtained during the conduct of any applicable compliance or performance tests.
  - b) The permittee shall submit documentation that no changes to the emission units, including the control device and capture system, have taken place that could result in a significant change in the control system performance or selected indicator ranges since the last performance or compliance test.

- 3) *Documentation of need for improved monitoring.* If the permittee identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the permittee shall promptly notify MDNR and, if necessary, submit a proposed modification to the part 70 permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters.
- 4) The permittee shall report to the Air Pollution Control Program’s Compliance/Enforcement Section, P. O. Box 176, Jefferson City, MO 65102, no later than ten (10) days after any deviations or exceedance of this permit condition.
- 5) The permittee shall report any deviations/exceedances of this permit condition using the semi-annual monitoring report and annual compliance certification to the Air Pollution Control Program’s Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as required by 10 CSR 10-6.065(6)(C)1.C.(III).

**PERMIT CONDITION 10**  
 10 CSR 10-6.060 Construction Permits Required  
 Construction Permit 112016-004, Issued November 8, 2016

Emission Unit	Description
EP10	Boiler 10: 269.4 MMBtu/hr Bituminous Coal Fired Boiler: Secondary Fuel: Natural Gas; High Temperature Fabric Filter; Constructed 1970; Manufacturer: Riley

**Operational Limitations:**

- 1) The four burners in Boiler 10 (EP10) shall be fired exclusively with pipeline natural gas as defined in 40 CFR 72.2. [Special Condition 1]
- 2) The combined maximum rating of all fuel capability in Boiler 10 shall not exceed 269.4 MMBtu/hr input, on a 1-hour average. [Special Condition 2.A]
- 3) The permittee shall notify the Air Pollution Control Program’s Permits Section in writing before the initial startup of the Boiler 10 natural gas burners for any changes to the as-built maximum rating from the permitted 269.4 MMBtu/hr input. [Special Condition 2.B]
- 4) The permittee shall submit an as-built report to the Air Pollution Control Program’s Permits Section within 180 days of initial startup of the Boiler 10 natural gas burners. The report shall contain at minimum the installed make, model and maximum rating of each Boiler 10 natural gas burner. The report shall be accompanied with a copy of the burner manufacturer design specifications that show the make, model and maximum rating. The report shall be accompanied with boiler/burner manufacturer design specifications or other engineering calculations that show the combined maximum rating of all fuel capability in Boiler 10 cannot exceed the limited value (269.4 MMBtu/hr). [Special Condition 2.C]

**Emission Limitations:**

- 1) The permittee shall emit less than 395.79 tons of NO<sub>x</sub> in any consecutive 12-month period from Boiler 10, inclusive of startup, shutdown and malfunction. [Special Condition 3.A]

- 2) The permittee shall emit less than 149.59 tons of CO in any consecutive 12-month period from Boiler 10, inclusive of startup, shutdown and malfunction. [Special Condition 4.A]

**Monitoring/Recordkeeping:**

- 1) The permittee shall obtain documentation from the fuel supplier for all fuels fired in the four burners to verify that only pipeline grade natural gas is burned. All records shall be kept on site. [Special Condition 1]
- 2) The permittee shall keep vendor records representative of each coal, fuel oil/diesel, biomass, and TDF sulfur weight %. A change of materials or vendors requires new vendor records. As an alternative to vendor sulfur records, the permittee may conduct representative sulfur testing on each fuel delivery. All records shall be kept on site. [Special Condition 7]
- 3) The permittee shall develop and use forms to demonstrate compliance with the NO<sub>x</sub> emission limit. The forms shall contain at a minimum the following information: [Special Condition 3.B]
  - a) Installation name and ID;
  - b) Emission Unit;
  - c) Current month;
  - d) Current 12-month date range;
  - e) Monthly throughput of each fuel fired in Boiler 10;
  - f) Respective fuel NO<sub>x</sub> emission factors:
    - i. The most recent NO<sub>x</sub> emission factors approved by the Air Pollution Control Program shall be used. Prior to testing, the NO<sub>x</sub> emission factors in Table 1 shall be used.

**Table 1: NO<sub>x</sub> Emission Factors**

Fuel	Emission Factor	Units of Measure
Natural gas	173.4	Lb/MMCF
Bituminous Coal	9.52	Lb/ton
Biomass (wood chips)	1.50	Lb/ton
Tire Derived Fuel (TDF)	*5.97	Lb/ton

\*obtained from 2010 EIQ

- ii. When the permittee tests NO<sub>x</sub> emissions from Boiler 10, the permittee shall develop new NO<sub>x</sub> emission factors to demonstrate compliance with the NO<sub>x</sub> emission limit. The tested emission factors may be used retroactively to replace the issued emission factors if approved to do so by the Air Pollution Control Program.
- g) Monthly emissions for each fuel calculated using the following equation:
 
$$\begin{aligned} & \text{NO}_x \text{ emissions (tons)} \\ & = \text{fuel fired (tons, MMCF)} \\ & \quad \times \text{fuel specific emission factor } \left( \frac{\text{lb NO}_x}{\text{ton, MMCF, gal of fuel fired}} \right) \\ & \quad \times \left( \frac{1 \text{ ton NO}_x}{2000 \text{ lbs NO}_x} \right) \end{aligned}$$
- h) Monthly NO<sub>x</sub> emissions calculated by summing NO<sub>x</sub> emissions from all fuels.
- i) 12-month rolling total NO<sub>x</sub> emissions and the sum of all NO<sub>x</sub> emissions from startup, shutdown, and malfunction as reported to the Air Pollution Control Program's Compliance/Enforcement Section.
- j) Indication of compliance with the NO<sub>x</sub> emission limit.

- 4) The permittee shall develop and use forms to demonstrate compliance with the CO emission limit. The forms shall contain at a minimum the following information: [Special Condition 4.B]
- a) Installation name and ID;
  - b) Emission Unit;
  - c) Current month;
  - d) Current 12-month date range;
  - e) Monthly throughput of each fuel fired in Boiler 10;
  - f) Respective fuel CO emission factors:
    - i) The most recent CO emission factors approved by the Air Pollution Control Program shall be used. Prior to testing, the CO emission factors in Table 2 shall be used.

**Table 2: CO Emission Factors**

Fuel	Emission Factor	Units of Measure
Natural gas	84.0	Lb/MMCF
Bituminous Coal	1.234	Lb/ton
Biomass (wood chips)	13.6	Lb/ton
Tire Derived Fuel (TDF)	6.0	Lb/ton

- ii) When the permittee tests CO emissions from Boiler 10, the permittee shall develop new CO emission factors to demonstrate compliance with the CO emission limit. The tested emission factors may be used retroactively to replace the issued emission factors if approved to do so by the Air Pollution Control Program.
  - g) Monthly emissions for each fuel calculated using the following equation:
 
$$\begin{aligned} &\text{CO emissions (tons)} \\ &= \text{fuel fired (tons, MMCF)} \\ &\times \text{fuel specific emission factor } \left( \frac{\text{lb CO}}{\text{ton, MMCF, gal of fuel fired}} \right) \\ &\times \left( \frac{1 \text{ ton CO}}{2000 \text{ lbs CO}} \right) \end{aligned}$$
  - h) Monthly CO emissions calculated by summing CO emissions from all fuels.
  - i) 12-month rolling total CO emissions and the sum of all CP emissions from startup, shutdown, and malfunction as reported to the Air Pollution Control Program's Compliance/Enforcement Section.
  - j) Indication of compliance with the CO emission limit.
- 5) The permittee shall maintain all records for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include SDS for all materials used. [Special Condition 8.A]

**Emissions Testing:**

- 1) The permittee shall test Boiler 10 for the scenarios in Table 3. Each fuel shall be tested independently of the other fuel, except for biomass which is only fired with other solid fuel. [Special Condition 6.A]

Table 3: Boiler 10 Testing, Fuels and Pollutants

Fuel	NO <sub>x</sub>	CO
Natural Gas	x	x
Coal	x	x
Biomass	x	x
TDF*	x	x

\*TDF has not been fired in recent years. TDF testing shall only be required when TDF is reintroduced.

- 2) All tests shall be performed at the maximum capacity, 269.4 MMBtu/hr input. If it is impractical to test at maximum capacity, testing may be performed at less than the maximum capacity; in this case, subsequent operation of Boiler 10 on that fuel is limited to 110 percent of the test rate until a new test is conducted. Once Boiler 10 is so limited, operation at higher capacities on that fuel is allowed for no more than 15 total days for the purpose of additional compliance testing to regain the authority to operate at the maximum capacity of that fuel. [Special Condition 6.B]
- 3) Natural gas initial testing shall be performed within 60 days after achieving the maximum capacity. Natural gas initial testing shall be performed not later than 180 days after initial start-up. [Special Condition 6.C]
- 4) Coal initial testing shall be performed within 180 days of this permit's issuance. [Special Condition 6.D]
- 5) A completed Proposed Test Plan Form must be submitted to the Air Pollution Control Program 30 days prior to the proposed test date so that the Air Pollution Control Program may arrange a pretest meeting, if necessary, and assure that the test date is acceptable for an observer to be present. The Proposed Test Plan may serve the purpose of notification and must be approved by the Director prior to conducting the required emissions testing. Each proposed test method shall be approved by the Air Pollution Control Program prior to conducting the respective test. [Special Condition 6.E]
- 6) One written copy and one electronic copy of the NO<sub>x</sub> and CO performance test results shall be submitted to the director within 60 days of completion of any required testing. The report must include legible copies of the raw data sheets, analytical instrument laboratory data and complete sample calculations from the required EPA Method for at least one sample run. The report shall also include the following valued present during each test: [Special Condition 6.F]
  - a) Natural gas
    - i. Fuel usage [cubic feet (CF)/hr];
    - ii. HHV (Btu/CF);
    - iii. Tested firing rate (MMBtu/hr input).
  - b) Coal, Biomass, and TDF
    - i. Fuel usage (tph);
    - ii. HHV (Btu/lb);
    - iii. Tested firing rate (MMBtu/hr input).
- 7) Subsequent testing of each fuel in Table 3 shall be conducted at least once every three calendar years, with no two consecutive tests of the same fuel and same pollutant within 12 months (e.g. coal NO<sub>x</sub> and CO can be tested within 12 months, coal and natural gas NO<sub>x</sub> can be tested within 12 months, but coal NO<sub>x</sub> cannot be tested twice within 12 months to represent 3 years).

**Reporting:**

- 1) The permittee shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than 10 days after the end of the month during

which any record required by this permit shows an exceedance of a limitation imposed by this permit. [Special Condition 8.B]

- 2) The permittee shall report any deviations/exceedances of this permit condition using the semi-annual monitoring report and annual compliance certification to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as required by 10 CSR 10-6.065(6)(C)1.C.(III).

**PERMIT CONDITION 11**  
 10 CSR 10-6.220 Restriction of Emission of Visible Air Contaminant

Emission Unit	Description
EP32	Hydrated Lime Storage Silo Filter Vent; MHDR 430 lb/hr;
EP05	East Ash Silo Conveying Air Vent; MHDR =5.215 tons/hr
EP12	West Ash Silo Conveying Air Vent; MHDR = 5.215 tons/hr
EP06	East Ash Silo Unloading and Bin Vent; MHDR = 70.215 tons/shr
EP13	West Ash Silo Unloading and Bin Vent; MHDR = 70.215 tons/hr
EP38	Coal Unloading; MHDR = 100 ton/hr; Installed/Modified 1/16/2012
EP39	Biomass Fuel Metering Bin; MHDR = 100 ton/hr; Installed/Modified 11/29/2012
EP40-1	Coal-Handling Belt Conveyor N; MHDR = 50 ton/hr; Installed/Modified 11/29/2012
EP40-2	Coal-Handling Belt Conveyor S; MHDR = 50 ton/hr; Installed/Modified 11/29/2012
EP41	Biomass Conveying; MHDR = 100 ton/hr; Installed/Modified 11/29/2012
EP42-1	Coal East Silo; MHDR = 100; Installed/Modified 1/16/2012
EP42-2	Coal West Silo; MHDR = 100; Installed/Modified 1/16/2012
EP42-3	Biomass East Silo; MHDR = 60; Installed/Modified 1/16/2012
EP42-4	Biomass West Silo; MHDR = 60; Installed/Modified 1/16/2012
EP42-5	Biomass/Alternative Fuel Silo; MHDR = 60; Installed/Modified 1/16/2012

**Emission Limitation:**

No owner or other person shall cause or permit emissions to be discharged into the atmosphere from any new source any visible emissions with an opacity greater than 20%.

*New source:* any equipment, machine, device, article, contrivance or installation installed in the outstate Missouri area after February 24, 1971. 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 60 minutes air contaminants with an opacity up to 60%.

**Monitoring (Only Applies to EP32, EP05, EP06, EP13 and EP12) Monitoring requirements for the other units are satisfied under Permit Condition 12):**

- 1) The permittee shall conduct visible emissions observations on emission units EP32, EP05, EP06, EP12 and EP13 using U.S. EPA Test Method 22-like procedures. Observations are only required when the emission unit is operating and when the weather conditions allow. If no visible emissions are observed using these procedures, then no further observations would be required. For emission units with visible emissions, the source representative shall conduct a Method 9 observation.



- 2) The following monitoring schedule must be maintained:
  - a) Weekly observations shall be conducted for a minimum of eight consecutive weeks after permit issuance. Should no violation of this regulation be observed during this period then
  - b) Observations shall be made once every two weeks for a period of eight weeks. If a violation is noted, monitoring reverts to weekly. Should no violation of this regulation be observed during this period then
  - c) Observations shall be made once per month. If a violation is noted, monitoring reverts to weekly.
  - d) If, at the issuance of this permit, the permittee has progressed in the schedule listed in 2.a)-c) the permittee may continue to advance accordingly or maintain observations as prescribed in 2.c).
- 3) If the source reverts to weekly 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 A & B, 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.
- 2) The permittee shall maintain records of any equipment malfunctions, using Attachment C or an equivalent form generated by the permittee.
- 3) The permittee shall maintain records of any U.S. EPA Method 9 opacity test performed in accordance with this permit condition.
- 4) The permittee shall retain each record in either hard copy or electronic form.
- 5) These records shall be made available immediately for inspection to the Department of Natural Resources' personnel upon request.
- 6) All records must be maintained for five years.

**Reporting:**

- 1) The permittee shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after any exceedance of any limitation established by this permit condition.
- 2) The permittee shall report any deviations from the operational limitation, monitoring/recordkeeping, and reporting requirements of this permit condition in the semi-annual monitoring report and annual compliance certification as required by 10 CSR 10-6.065(6)(C)1.C.(III)..

**PERMIT CONDITION 12**  
 10 CSR 10-6.060 Construction Permits Required  
 Construction Permit 042010-002Amendment, Issued March 31, 2017

Emission Unit	Description
EP38	Coal Unloading; MHDR = 100 ton/hr; Installed/Modified 1/16/2012
EP39	Biomass Fuel Metering Bin; MHDR = 100 ton/hr; Installed/Modified 11/29/2012
EP40-1	Coal-Handling Belt Conveyor N; MHDR = 50 ton/hr; Installed/Modified 11/29/2012
EP40-2	Coal-Handling Belt Conveyor S; MHDR = 50 ton/hr; Installed/Modified 11/29/2012
EP41	Biomass Conveying; MHDR = 100 ton/hr; Installed/Modified 11/29/2012
EP42-1	Coal East Silo; MHDR = 100; Installed/Modified 1/16/2012
EP42-2	Coal West Silo; MHDR = 100; Installed/Modified 1/16/2012
EP42-3	Biomass East Silo; MHDR = 60; Installed/Modified 1/16/2012
EP42-4	Biomass West Silo; MHDR = 60; Installed/Modified 1/16/2012
EP42-5	Biomass/Alternative Fuel Silo; MHDR = 60; Installed/Modified 1/16/2012

**Operating/Emission Limitations:**

- 1) The permittee shall enclose and vent each PM<sub>10</sub> point source listed in Table 1 to either a baghouse, bin vent or filter receiver. The enclosure of the emissions units shall be constructed and maintained such that no visible emissions are allowed to occur from these sources except through the gases exiting from the baghouse, bin vent or filter receiver. [Special Condition 3.A]
- 2) The permit shall not emit more than 0.010 grains per dry standard cubic foot (gr/dscf) of filterable PM<sub>10</sub> from any emission point listed in Table 1. [Special Condition 3.C]
- 3) The permittee shall not exceed the flowrate to the control device for any emission point listed in Table 1. [Special Condition 3.D]

**Table 1: Fuel Handling Point Sources Requiring PM<sub>10</sub> Control**

EP#	Description	Maximum Flowrate (dscfm)
EP39	Biomass Fuel Metering Bin	3,700
EP40-1	CH Belt Conveyor N	700
EP40-2	CH Belt Conveyor S	700
EP41	Biomass Conveying	700
EP42-1	Coal East Silo	700
EP42-2	Coal West Silo	700
EP42-3	Biomass East Silo	700
EP42-4	Biomass West Silo	700
EP42-5	Biomass/Alternative Fuel Silo	700

- 4) A minimum of 15% of total filters for the baghouses, bin vents and filter receiver shall be kept on hand at all times to serve as replacement filters. The bags shall be made of fibers appropriate for operating conditions expected to occur. [Special Condition 3.F]

**Monitoring/Recordkeeping:**

- 1) The permittee shall conduct a detailed visual inspection of the enclosures listed in Table 1 at least once each week to ensure compliance with Condition 2) above. A record shall be maintained acknowledging that the enclosures have been inspected. [Special Condition 3.B]
- 2) The permittee shall maintain weekly records of visual inspection of the fuel handling system as specified in Condition 1) above. [Special Condition 8.G]
- 3) The baghouses, bin vents and filter receiver shall be operated and maintained in accordance with the manufacturer's specifications. The baghouses, bin vents and filter receiver shall be equipped with a gauge or meter, which indicates the pressure drop across the control device. These gauges or meters shall be located such that the Department of Natural Resources' employees may easily observe them. [Special Condition 3.E]
- 4) The permittee shall monitor and record the operating pressure drop across the baghouses, bin vents and filter receiver at least once every 7 days either manually or recorded electronically in the facility's process control system. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance specifications. [Special Condition 3.G]
- 5) The permittee shall maintain an operating and maintenance log for the baghouse, bin vents and filter receiver which shall include the following: [Special Condition 3.H]
  - a) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions;
  - 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.
- 6) The permittee shall maintain all records for not less than five (5) years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. [Special Condition 8.K]

**Reporting:**

- 1) The permittee shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, Mo 65102, no later than 10 days after the end of the month during which operation of equipment at this installation is not in accordance with any operational limitation or condition stated above. [Special Condition 8.K]
- 2) The permittee shall report any deviations/exceedances of this permit condition using the semi-annual monitoring report and annual compliance certification to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as required by 10 CSR 10-6.065(6)(C)1.C.(III).

<b>PERMIT CONDITION 13</b> 10 CSR 10-6.060 Construction Permits Required Construction Permit 042010-002Amendment, March 31, 2017
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Emission Unit	Description
EP36	Paved Haul Road

**Emission Limitations:**

The silt loading on the haul road shall not exceed 2.4 grams per square meter. [Special Condition 6.A]

**Monitoring/Recordkeeping/Reporting:**

- 1) The permittee shall develop, implement and maintain a Fugitive Dust Control Plan to control emissions from the haul road that insures compliance with the emission limit 1) above. The plan shall contain the following components: [Special Condition 6.B]
  - a) The permittee shall conduct a survey of the haul roads on days when there is truck traffic at the facility to determine if visible emissions are being generated and are leaving the property.
  - b) The permittee shall maintain a daily log of all maintenance, corrective actions and observations from the surveys.
- 2) The permittee shall maintain all records for not less than five (5) years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. [Special Condition 8.J]
- 3) The permittee shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, Mo 65102, no later than 10 days after the end of the month during which operation of equipment at this installation is not in accordance with any operational limitation or condition stated above. [Special Condition 8.K]
- 4) The permittee shall report any deviations/exceedances of this permit condition using the semi-annual monitoring report and annual compliance certification to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as required by 10 CSR 10-6.065(6)(C)1.C.(III).

**PERMIT CONDITION 14**  
 10 CSR 10-6.060 Construction Permits Required  
 Construction Permit 072000-005A, September 26, 2000

Emission Unit	Description
EP26	12.7 MW Combustion Turbine Train 1 (MHDR = 133.5 MMBtu/hr) natural gas/fuel oil and Duct Burner (MHDR = 99.0 MMBtu/hr) natural gas; Constructed 2000; Manufacturer/Model: Solar/Titan 130S
EP27	12.7 MW Combustion Turbine Train 2 (MHDR = 133.5 MMBtu/hr) natural gas/fuel oil and Duct Burner (MHDR = 99.0 MMBtu/hr) natural gas; Constructed 2000; Manufacturer/Model: Solar/Titan 130S

**Operational Limitation:**

- 1) The permittee shall burn fuel oil in the turbines for a maximum of 2,000 hours each in every consecutive twelve-month period. [Special Condition 1]
- 2) The fuel oil combusted shall have a sulfur content of 0.05 percent by weight or less. [Special Condition 3]
- 3) The permittee is prohibited from sustained operation of either turbine at loads less than fifty percent when firing natural gas or fuel oil, except during initial startup and shutdown. [Special Condition 4]
- 4) The permittee shall maintain records during periods of startup and shutdown that include the amount of time required for each cycle and time that the turbines are operated at less than fifty percent load. [Special Condition 5]
- 5) Total time required for startup and shutdown times for each turbine shall be no more than eight (8) hours per occurrence.

- 6) At all times, including periods of startup, shutdown, and malfunction, the permittee shall, to the extent practicable, maintain and operate this equipment in a manner consistent with good engineering practice for minimizing emissions. [Special Condition 7]
- 7) Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Air Pollution Control Program (APCP) which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. [Special Condition 8]

**Emission Limitations:**

- 1) Except during periods of startup and shutdown, the permittee shall limit nitrogen oxide (NO<sub>x</sub>) emissions from the SOLAR turbine generators while burning natural gas to twenty-five parts per million by volume (ppmv) (27.4 ppmv from turbine generators and duct burners combined), corrected to fifteen percent oxygen on a dry basis and expressed as a one (1) hour average. [Special Condition 9]
- 2) Except during periods of startup and shutdown, the permittee shall limit nitrogen oxide (NO<sub>x</sub>) emissions from the SOLAR turbine generators and from the duct burners while burning fuel oil to 99.8 parts per million by volume corrected to fifteen percent oxygen on a dry basis and expressed as a one (1) hour average. [Special Condition 10]
- 3) Except during periods of startup and shutdown, the permittee shall limit carbon monoxide (CO) emissions from the SOLAR turbine generators to fifty parts per million by volume corrected to fifteen percent oxygen on a dry basis and expressed as a one (1) hour average. [Special Condition 11]
- 4) The permittee shall not emit formaldehyde emissions greater than 2.2 pounds per hour, for all loads, from the SOLAR turbine generators and from the duct burners. (During initial compliance testing it was determined formaldehyde levels were non-detectable, therefore no further testing for formaldehyde is warranted.) [Special Condition 13]

**Performance Testing:**

- 1) Beginning six (6) months after the initial performance testing, and semi-annually thereafter, the permittee shall conduct testing on each turbine and duct burner to verify that the CO emission limitations are not exceeded. This testing may be conducted either in the same manner as the original performance test or using a portable test analyzer. [Special Condition 17]
- 2) The CO emission tests required shall be conducted in accordance with the test methods and procedures outlined in 40 CFR Part 60, Appendix A, Method 10, or another approved method by the Air Pollution Control Program. [Special Condition 18]

**Alternative CO Test Method:**

- 3) The permittee may elect to replace the semi-annual CO emission tests with the following: permittee shall conduct a stack test every five years on each turbine and duct burner to verify that the CO emission limitation is not exceeded. [Special Condition 27]
- 4) The date on which performance tests are conducted must be pre-arranged with the Air Pollution Control Program a minimum of thirty days prior to the proposed test. The Air Pollution Control Program may arrange a pretest meeting, if necessary, to assure that the test date is acceptable for an observer to be present. A completed Proposed Test Plan Form may serve the purpose of notification and must be approved by the Air Pollution Control Program prior to conducting the required emission testing. [Special Condition 19]
- 5) Two (2) copies of a written report of the performance test results shall be submitted to the director of the Air Pollution Control Program within thirty days of completion of any required testing. The

report must include legible copies of the raw data sheets, analytical instrument laboratory data, and complete sample calculations from the required EPA Method for at least one sample run.

[Special Condition 20]

- 6) The test report must fully account for all operational and emission parameters addressed by these permit conditions as well as Subparts Dc and Gg of the NSPS. [Special Condition 21]

**Monitoring:**

- 1) The permittee shall maintain records of the total hours fuel oil is burned in the turbines in every consecutive 12-month period.
- 2) The permittee shall install, calibrate, maintain, and operate continuous monitoring systems, and record the output of the systems for measuring NO<sub>x</sub> emissions discharged to the atmosphere. These systems shall be placed in an appropriate location on each turbine's flue gas exhaust such that accurate readings are possible. [Special Condition 22]
- 3) The permittee shall install, calibrate, maintain, and operate a continuous monitoring system, and record the output of the systems, for measuring the oxygen (O<sub>2</sub>) content of the flue gases at each location where NO<sub>x</sub> emissions are monitored. The O<sub>2</sub> content of the flue gases may be determined by use of either an O<sub>2</sub> CEMS or a CO<sub>2</sub> CEMS. If the permittee elects to use a CO<sub>2</sub> CEMS, the conversion process in EPA Method 20 must be used to correct the NO<sub>x</sub> concentrations to fifteen percent O<sub>2</sub>. [Special Condition 23]
- 4) The CEMS shall be installed and operated in accordance with one of the following (the permittee's option):
  - a) The guidelines in 40 CFR Part 75 for NO<sub>x</sub> and diluent CEMS requirements; or
  - b) The guidelines in 40 CFR §60.13 in conjunction with 40 CFR Appendix F, *Quality Assurance Procedures*. [Special Condition 24]
- 5) The CEMS shall be installed and operated according to the guidelines in 40 CFR §60.13, *Monitoring requirements*; in 40 CFR Appendix B, Performance Specification, 3-*Specification and test procedures of O<sub>2</sub> and CO<sub>2</sub> Continuous Emission Monitoring Systems in Stationary Sources*; and in 40 CFR Appendix F, *Quality Assurance Procedures*. [Special Condition 25]

**Record Keeping:**

The permittee shall maintain monthly records that show the monthly and most recent twelve-month cumulative hours of operation burning fuel oil for each combined-cycle turbine. Records from the most recent five years shall be maintained on site and shall be made available to Missouri Department of Natural Resources' personnel immediately upon request. [Special Condition 14]

**Reporting:**

- 1) The permittee shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, Missouri 65102, no later than ten (10) days after the end of each month if any emission or operational limitation established in Construction Permit 072000-005 is exceeded. [Special Condition 26]
- 2) The permittee shall report any deviations/exceedances of this permit condition using the semi-annual monitoring report and annual compliance certification to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as required by 10 CSR 10-6.065(6)(C)1.C.(III).

**PERMIT CONDITION 15**

10 CSR 10-6.070 New Source Performance Standards  
40 CFR Part 60 Subpart GG Standards of Performance for Stationary Gas Turbines

Emission Unit	Description
EP26	12.7 MW Combustion Turbine Train 1 (MHDR = 133.5 MMBtu/hr) natural gas/fuel oil and Duct Burner (MHDR = 99.0 MMBtu/hr) natural gas; Constructed 2000; Manufacturer/Model: Solar/Titan 130S
EP27	12.7 MW Combustion Turbine Train 2 (MHDR = 133.5 MMBtu/hr) natural gas/fuel oil and Duct Burner (MHDR = 99.0 MMBtu/hr) natural gas; Constructed 2000; Manufacturer/Model: Solar/Titan 130S

**Note:** These combustion turbines (EP26 and EP27) are subject to the requirements of §60.332(a)(1) of CFR Part 60 Subpart GG. Since the NO<sub>x</sub> emission standards of Subpart GG are less stringent than the NO<sub>x</sub> emission limits of Construction Permit 072000-005, the NSPS §60.332(a)(1) standards are not listed as permit conditions to these units. Compliance with the NO<sub>x</sub> limits in the construction permit will assure compliance with the §60.332(a)(1) standards.

**Note:** These combustion turbines (EP26 and EP27) are subject to the requirements of §60.333(b) of CFR Part 60 Subpart GG. Since the sulfur content standards of Subpart GG are less stringent than the limits of Construction Permit 072000-005, the NSPS §60.333(b) standards are not listed as permit conditions to these units. Compliance with the fuel sulfur content standards in the construction permit will assure compliance with the §60.333 (b) standards.

**Emission Limitations:**

The permittee shall not cause to be discharged into the atmosphere from these gas turbines any gases which contain sulfur dioxide in excess of 0.015 percent by volume at fifteen percent oxygen and on a dry basis. [40 CFR 60.333(a)]

**Monitoring:**

- 1) The permittee shall monitor sulfur content of the fuel oil being fired in the turbine. The frequency of determination of these values shall be as follows: [40 CFR 60.334(b)]
  - a) If the turbine is supplied its fuel without intermediate bulk storage the values shall be determined and recorded daily. Owners, operators or fuel vendors may develop custom schedules for determination of the values based on the design and operation of the affected facility and the characteristics of the fuel supply. These custom schedules shall be substantiated with data and must be approved by the administrator before they can be used to comply with 40 CFR 60.334(b).[40 CFR 60.334(b)(2)]
- 2) The owner or operator shall determine compliance with the more stringent sulfur content standard established in Construction Permit 072000-005 as follows: [40 CFR 60.335(d)], and as necessary
  - a) ASTM D 2880-96 shall be used to determine the sulfur content of liquid fuels.

**Record Keeping:**

- 1) The permittee shall maintain records of reports required under §60.7(c) and §60.334(c)(2), or pursuant to an approved custom fuel schedule.
- 2) The permittee shall maintain records on-site for the most recent five years of all records required by this permit and shall immediately make such records available to any Missouri Department of Natural Resources' personnel upon request.

**Reporting:**

- 1) For the purposes of reports under §60.7(c), periods of excess emissions that shall be reported are defined as follows: [§60.334(c)]
  - a) *Sulfur dioxide*: Any daily period during which the sulfur content of the fuel oil being fired in the gas turbine exceeds the permitted limit. [CFR 40 60.334(c)(2)]
  - b) *Emergency fuel*: Each period during which an exemption provided in 40 CFR 60.332(k) is in effect shall be included in the report required in 40 CFR 60.7(c). For each period, the type, reasons, and duration of the firing of the emergency fuel shall be reported. [40 CFR 60.334(c)(4)]
- 2) The permittee shall report to the Air Pollution Control Program’s Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten (10) days after the end of the month during which the records indicate that the source exceeds the operational limitations.
- 3) The permittee shall report any deviations/exceedances of this permit condition using the semi-annual monitoring report and annual compliance certification to the Air Pollution Control Program’s Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as required by 10 CSR 10-6.065(6)(C)1.C.(III).

**PERMIT CONDITION 16**  
 10 CSR 10-6.260 Restriction of Emission of Sulfur Compounds

Emission Unit	Description
EP23	Southwest Well Generator: 9.9 MMBtu/hr diesel generator; Manufacturer/Model No: Caterpillar/3512; Constructed 1996
EP18	North Well Generator: 5.33 MMBtu/hr diesel generator; Manufacturer/Model No: Caterpillar/3412; Constructed 1994
EP29	Power Plant Back Up Diesel Generator: 20.15 MMBtu/hr diesel generator; Manufacturer/Model No: Caterpillar/3516B; Constructed 2000
EP22	East Campus Chiller Generator; 16 kW natural gas/LPG; constructed 2017 or later; Manufacturer Generac; Model: G007035-0

*10 CSR 10-6.260 is a federal-only requirement. See Statement of Basis for explanation for why 10 CSR 10-6.260 is included in the operating permit as an applicable regulation.*

**Emission Limitation:**

- 1) Emissions from any existing or new source operation shall not contain more than five hundred parts per million by volume (500 ppmv) of sulfur dioxide.
- 2) Stack gasses shall not contain more than thirty-five milligrams (35 mg) per cubic meter of sulfuric acid or sulfur trioxide or any combination of those gases averaged on any consecutive three hour time period.

**Monitoring/Recordkeeping:**

Compliance with the limits in Permit Condition 17, ensure compliance with this permit condition. No additional monitoring or record keeping is required.

**Reporting:**

- 1) The permittee shall report to the Air Pollution Control Program’s Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten (10) days after the end of the month during which the records indicate that the source exceeds the emission limitations.



- 2) The permittee shall report any deviations/exceedances of this permit condition using the semi-annual monitoring report and annual compliance certification to the Air Pollution Control Program’s Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as required by 10 CSR 10-6.065(6)(C)1.C.(III).

**PERMIT CONDITION 17**  
 10 CSR 10-6.261 Control of Sulfur Dioxide Emissions

Emission Unit	Description
EP23	Southwest Well Generator: 9.9 MMBtu/hr diesel generator; Manufacturer/Model No: Caterpillar/3512; Constructed 1996
EP18	North Well Generator: 5.33 MMBtu/hr diesel generator; Manufacturer/Model No: Caterpillar/3412; Constructed 1994
EP22	East Campus Chiller Generator; 16 kW natural gas/LPG; constructed 2017 or later; Manufacturer Generac; Model: G007035-0
<i>10 CSR 10-6.261 is a “state only” requirement. Upon approval into the Missouri State Implementation Plan (SIP), this regulation will become federally enforceable.</i>	

**Emission Limitation:**

The permittee shall not combust any fuel containing more than 8,812 parts per million (ppm) of sulfur.

**Monitoring/Recordkeeping:**

- 1) The permittee shall determine compliance using fuel delivery records, fuel sampling and analysis, performance tests, continuous emission monitoring, or other compliance methods approved by the staff director and the U.S. Environmental Protection agency and incorporated into the state implementation plan.
- 2) The permittee must report any excess emissions other than startup, shutdown and malfunction excess emissions to the staff director for each calendar quarter within thirty (30) days following the end of the quarter. In all cases, the notification must be a written report and must include, at a minimum, the following:
  - a) Name and location of source;
  - b) Name and telephone number of person responsible for the source;
  - c) Identity and description of the equipment involved;
  - d) Time and duration of the period of excess emissions;
  - e) Type of activity;
  - f) Estimate of the magnitude of the excess emissions expressed in the units of the applicable emission control regulation and the operating data and calculations used in estimating the magnitude;
  - g) Measures taken to mitigate the extent and duration of the excess emissions; and
  - h) Measures taken to remedy the situation which cause the excess emissions and the measures taken or planned to prevent the recurrence of these situations.
- 3) The permittee must maintain a list of modifications to the source’s operating procedures or other routine procedures instituted to prevent or minimize the occurrence of any excess emissions.
- 4) The permittee must maintain a record of data, calculations, results, records and reports from any performance test, continuous emission monitoring, fuel deliveries, and/or fuel sampling tests.

- 5) The permittee must maintain a record of any applicable monitoring data, performance evaluations, calibration checks, monitoring system and device performance tests, and any adjustments and maintenance performed on these systems or devices.
- 6) The permittee of sources using fuel delivery records for compliance must also maintain the fuel supplier information to certify all fuel deliveries. Bills of lading and/or other fuel deliver documentation containing the following information for all fuel purchases or deliveries are deemed acceptable to comply with the requirements of this rule:
  - a) The name, address, and contact information of the fuel supplier;
  - b) The type of fuel;
  - c) The sulfur content or maximum sulfur content expressed in percent sulfur by weight or in ppm sulfur; and
  - d) Heating value of the fuel.
- 7) The permittee of sources using fuel sampling and analysis for compliance must also follow the requirements in 10 CSR 10-6.261(5)(D).
- 8) The permittee of sources using performance testing for compliance must also follow the requirements in 10 CSR 10-6.261(5)(A)
- 9) All required reports and records must be retained on-site for a minimum of five (5) years and made available within five (5) business days upon written or electronic request by the director.
- 10) The permittee must furnish the director all data necessary to determine compliance status.

**Reporting:**

- 1) The permittee shall report to the Air Pollution Control Program’s Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten (10) days after the end of the month during which the records indicate that the source exceeded the emission limit.
- 2) The permittee shall report any deviations/exceedances of this permit condition using the semi-annual monitoring report and annual compliance certification to the Air Pollution Control Program’s Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as required by 10 CSR 10-6.065(6)(C)1.C.(III).

**PERMIT CONDITION 18**  
 10 CSR 10-6.075 Maximum Achievable Control Technology Regulations  
 40 CFR Part 63 Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for  
 Stationary Reciprocating Internal Combustion Engines

Emission Unit	Description
EP23	Southwest Well Generator: 9.9 MMBtu/hr diesel generator; Manufacturer/Model No: Caterpillar/3512; Constructed 1996
EP18	North Well Generator: 5.33 MMBtu/hr diesel generator; Manufacturer/Model No: Caterpillar/3412; Constructed 1994
EP29	Power Plant Back Up Diesel Generator: 20.15 MMBtu/hr diesel generator; Manufacturer/Model No: Caterpillar/3516B; Constructed 2000
<p><i>All units are considered existing units as defined in 40 CFR Part 63 Subpart ZZZZ (located at a facility major for HAPs and were constructed prior to December 19, 2002). EP23, EP18 and EP29 are all greater than 500 HP.</i></p>	

**Operational Limitations:**

- 1) The permittee shall operate the emergency stationary RICE according to the requirements in paragraphs §63.6640(f)(1) through (4). In order for the engine to be considered an emergency stationary RICE under 40 CFR 63 Subpart ZZZZ, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for more than 50 hours per year, as described in paragraphs §63.6640(f)(1) through (4), is prohibited. If you do not operate the engine according to the requirements in paragraphs §63.6640(f)(1) through (4), the engine will not be considered an emergency engine under 40 CFR 63 Subpart ZZZZ and must meet all requirements for non-emergency engines. [§63.6640(f)]
  - a) There is no time limit on the use of emergency stationary RICE in emergency situations. [§63.6640(f)(1)]
  - b) The permittee may operate the emergency stationary RICE for any combination of the purposes specified in paragraphs §63.6640(f)(2)(i) through (iii) for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraphs §63.6640(f)(3) and (4) counts as part of the 100 hours per calendar year allowed by this paragraph §63.6640(f)(2). [§63.6640(f)(2)]
    - i) Emergency stationary RICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The permittee may petition the Director for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency RICE beyond 100 hours per calendar year. [§63.6640(f)(2)(i)]
  - c) Emergency stationary RICE located at major sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph §63.6640(f)(2). The 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity. [§63.6640(f)(3)]
- 2) At all times the permittee must operate and maintain the generators in a manner consistent with safety and good air pollution control practices for minimizing emissions. [§63.6605(b)]

**Reporting:**

The permittee shall report any deviations/exceedances of this permit condition using the semi-annual monitoring report and annual compliance certification to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as required by 10 CSR 10-6.065(6)(C)1.C.(III).

**PERMIT CONDITION 19**  
 10 CSR 10-6.075 Maximum Achievable Control Technology Regulations  
 40 CFR Part 63 Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for  
 Stationary Reciprocating Internal Combustion Engines

Emission Unit	Description
EP25	East Well Engine Driven Pump: 0.175 MMBtu/hr natural gas reciprocating engine; Manufacturer: Cummins; Constructed 1996
EP31	South Well Engine Driven Pump: 0.214 MMBtu/hr natural gas reciprocating engine; Constructed April 3, 2006
<i>These units are considered existing units as defined in 40 CFR Part 63 Subpart ZZZZ (located at a facility major for HAPs and were constructed prior to June 12, 2006).</i>	

**Operational Limitations:**

- 1) The permittee must operate and maintain the engines in a manner consistent with safety and good air pollution control practices for minimizing emissions. [§63.6605(b)]
- 2) The permittee must comply with the requirements in Table 2c of Subpart ZZZZ which apply to the engines:

**Table 2c to Subpart ZZZZ of Part 63—Requirements for Existing Compression Ignition Stationary RICE Located at a Major Source of HAP Emissions and Existing Spark Ignition Stationary RICE ≤500 HP Located at a Major Source of HAP Emissions**

For each . . .	You must meet the following requirement, except during periods of startup . . .
Emergency stationary SI RICE and black start stationary SI RICE.	a. Change oil and filter every 500 hours of operation or annually, whichever comes first; b. Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

- 3) The permittee shall install a non-resettable hour meter if one is not already installed. [§63.6625(f)]

**Annual Usage Limitations:**

The permittee shall operate the engines according to the requirements in paragraphs §63.6640(f)(1) through (4). In order for the engine to be considered an “emergency stationary RICE” under 40 CFR 63 Subpart ZZZZ, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for more than 50 hours per year, as described in paragraphs §63.6640(f)(1) through (4), is prohibited. If you do not operate the engine according to the requirements in paragraphs §63.6640(f)(1) through (4), the engine will not be considered an emergency engine under 40 CFR 63 Subpart ZZZZ and must meet all requirements for non-emergency engines. [§63.6640(f)]

- a) There is no time limit on the use of emergency stationary RICE in emergency situations. [§63.6640(f)(1)]
- b) The permittee may operate the emergency stationary RICE for any combination of the purposes specified in paragraphs §63.6640(f)(2)(i) through (iii) for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraphs §63.6640(f)(3) and (4) counts as part of the 100 hours per calendar year allowed by this paragraph §63.6640(f)(2). [§63.6640(f)(2)]
  - i) Emergency stationary RICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The permittee may petition the Director for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency RICE beyond 100 hours per calendar year. [§63.6640(f)(2)(i)]
- c) Emergency stationary RICE located at major sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph §63.6640(f)(2). The 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity. [§63.6640(f)(3)]

**Recordkeeping/Reporting:**

- 1) The permittee shall maintain records for this unit as required in §63.6655.
- 2) The permittee shall submit reports for this unit as required in §63.6650.
- 3) The permittee must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The permittee must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. [§63.6655(f)]

**Reporting:**

The permittee shall report any deviations/exceedances of this permit condition using the semi-annual monitoring report and annual compliance certification to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as required by 10 CSR 10-6.065(6)(C)1.C.(III).

**PERMIT CONDITION 20**  
 10 CSR 10-6.060 Construction Permits Required  
 Construction Permit 0294-018, Issued January 27, 1994

Emission Unit	Description
EP18	North Well Generator: 5.33 MMBtu/hr diesel generator; Manufacturer/Model No: Caterpillar/3412; Constructed 1994

**Operational Limitation:**

This generator shall be operated for no more than 4,000 hours in any consecutive twelve (12) month period. [Special Condition #1]

**Monitoring:**

The amount of time that this unit operates shall be determined by the hour meter fitted to the unit by the manufacturer. This hour meter shall be kept in serviceable condition at all times. [Special Condition #4]

**Record Keeping/Reporting:**

- 1) Records which detail the number of hours that the generator was operated in each month shall be kept on-site and available for inspection by Department of Natural Resources' personnel. [Special Condition #2]
- 2) This facility shall report to the Air Pollution Control Program no later than 10 (ten) days after the end of the month if the limitation is exceeded in the previous 12-month period. Each exceedance shall be reported to Missouri Department of Natural Resources, Air Pollution Control Program, Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102. [Special Condition #3]
- 3) The permittee shall report any deviations/exceedances of this permit condition using the semi-annual monitoring report and annual compliance certification to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as required by 10 CSR 10-6.065(6)(C)1.C.(III).

**PERMIT CONDITION 21**  
 10 CSR 10-6.060 Construction Permits Required  
 Construction Permit 1096-021, Issued October 31, 1996

Emission Unit	Description
EP23	Southwest Well Generator: 9.9 MMBtu/hr diesel generator; Manufacturer/Model No: Caterpillar/3512; Constructed 1996
EP25	East Well Engine Driven Pump: 0.175 MMBtu/hr natural gas reciprocating engine; Manufacturer: Cummins; Constructed 1996

**Emission Limitation:**

The total emission level of nitrogen oxides (NO<sub>x</sub>) from these units shall not exceed 40 tons in any consecutive 12-month period. [Special Condition #1]

**Monitoring/Record Keeping:**

Monthly records shall be kept that are adequate to determine the total emissions of NO<sub>x</sub> from these engines. Attachment F may be used for this purpose. These records shall also indicate the total quantity

of NO<sub>x</sub> emissions over the previous 12-month period. The most recent five years of records shall be maintained on-site and shall be made immediately available to Department of Natural Resources' personnel upon request. [Special Condition #2]

**Reporting:**

- 1) The University of Missouri shall report to the Air Pollution Control Program Compliance/Enforcement Section, no later than ten days after the end of each month, if the 12-month cumulative total records show that the source exceeded the limitation of 40 tons of NO<sub>x</sub> per year. [Special Condition #3]
- 2) The permittee shall report any deviations/exceedances of this permit condition using the semi-annual monitoring report and annual compliance certification to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as required by 10 CSR 10-6.065(6)(C)1.C.(III).

<b>PERMIT CONDITION 22</b> 10 CSR 10-6.060 Construction Permits Required Construction Permit 072000-005A, September 26, 2000
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Emission Unit	Description
EP29	Power Plant Back Up Diesel Generator: 20.15 MMBtu/hr diesel generator; Manufacturer/Model No: Caterpillar/3516B; Constructed 2000

**Emissions/Operational Limitations:**

- 1) The permittee shall limit this unit (EP29) to 750 hours of operation in every consecutive 12-month period. [Special Condition 2]
- 2) All fuel combusted in this unit (EP29) shall have a sulfur content of 0.05 percent by weight or less. [Special Condition 3]

**Monitoring/Recordkeeping:**

- 1) Records which detail the number of hours that the generator was operated in each month and each 12-month period shall be kept on-site and available for inspection by Department of Natural Resources' personnel.
- 2) The permittee shall determine compliance using fuel delivery records, fuel sampling and analysis, performance tests, continuous emission monitoring, or other compliance methods approved by the staff director and the U.S. Environmental Protection agency and incorporated into the state implementation plan.

**Reporting:**

- 1) This facility shall report to the Air Pollution Control Compliance/Enforcement Section no later than 10 (ten) days after the end of the month if the limitation is exceeded in the previous 12-month period. Each exceedance shall be reported to Missouri Department of Natural Resources, Air Pollution Control Program, Enforcement Section, P.O. Box 176, Jefferson City, MO 65102.
- 2) The permittee shall report any deviations/exceedances of this permit condition using the semi-annual monitoring report and annual compliance certification to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as required by 10 CSR 10-6.065(6)(C)1.C.(III).

**PERMIT CONDITION 23**

10 CSR 10-6.070 New Source Performance Regulations  
40 CFR Part 60 Subpart JJJJ Standards of Performance for Stationary Spark Ignition Internal  
Combustion Engines

Emission Unit	Description
EP22	East Campus Chiller Generator; 16 kW natural gas/LPG; constructed 2017 or later; Manufacturer Generac; Model: G007035-0

**Emission/Operational Limitations:**

- 1) The permittee must comply with the emission standards in §60.4231(a). [§60.4233(a)]:
- 2) The permittee must purchase and operate an engine certified to the emission standards and other requirements for new nonroad SI engines in 40 CFR part 1054 (for engines manufactured after January 1, 2011 with engine displacement at or above 225cc). [§60.4231(a)]
- 3) The permittee must meet the emission standards over the entire life of the engine. [§60.4234]
- 4) In order for the engine to be considered an emergency stationary ICE under subpart JJJJ, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in §60.4243(d)(1) through (3) is prohibited. If the engine is not operated according to the requirements in §60.4243(d)(1) through (3), the engine will not be considered an emergency engine and must meet all requirements for non-emergency engine.
- 5) There is no time limit on the use of emergency stationary ICE in emergency situations. [§60.4243(d)(1)]
- 6) The permittee may operate the engine for a maximum of 100 hours per calendar year for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator or the insurance company associated with the engine. The permittee may petition the director for approval of additional hours to be used for maintenance checks and readiness testing but a petition is not required if the permittee maintains records indicating that federal, state or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year. [§60.4243(d)(2)]
- 7) The engine may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response. Except as provided in §60.4243(d)(3)(i), the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity. [§60.4243(d)(3)]

**Monitoring/Recordkeeping:**

The permittee must keep records of conducted maintenance to demonstrate compliance. The permittee must also meet the requirements as specified in 40 CFR part 1068, subparts A through D as they apply. If the engine settings are adjusted according to and consistent with the manufacturer's instructions the engine will not be considered out of compliance. [§60.4243(a)(1)]



**Reporting:**

The permittee shall report any deviations/exceedances of this permit condition using the semi-annual monitoring report and annual compliance certification to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as required by 10 CSR 10-6.065(6)(C)1.C.(III).

## IV. Core Permit Requirements

The installation shall comply with each of the following regulations or codes. Consult the appropriate sections in the Code of Federal Regulations (CFR), the 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 as of the date that this permit is issued. The following are only excerpts from the regulation or code, and are provided for summary purposes only.

### **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) 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.

### **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) 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 to the director in writing at least ten days prior to any maintenance, start-up or shutdown activity 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, notice shall be given as soon as practicable prior to the activity.
- 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. The permittee shall retain the most current operating permit issued to this installation on-site. The permittee shall immediately make such permit available to any Missouri Department of Natural Resources personnel upon request.

#### **10 CSR 10-6.110 Reporting of Emission Data, Emission Fees and Process Information**

- 1) The permittee shall submit a Full Emissions Report either electronically via MoEIS, which requires Form 1.0 signed by an authorized company representative, or on Emission Inventory Questionnaire (EIQ) paper forms on the frequency specified in this rule and in accordance with the requirements outlined in this rule. Alternate methods of reporting the emissions, such as spreadsheet file, can be submitted for approval by the director.
- 2) Public Availability of Emission Data and Process Information. Any information obtained pursuant to the rule(s) of the Missouri Air Conservation Commission that would not be entitled to confidential treatment under 10 CSR 10-6.210 shall be made available to any member of the public upon request.
- 3) 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.

#### **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 10-6.165 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. This odor evaluation shall be taken at a location outside of the installation's property boundary.

### **10 CSR 10-6.170**

#### **Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin**

##### **Emission Limitation:**

- 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 10-6.280 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 at an installation:
- 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.

#### **40 CFR Part 82 Protection of Stratospheric Ozone (Title VI)**

- 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 40 CFR §82.106.
  - b) The placement of the required warning statement must comply with the requirements of 40 CFR §82.108.
  - c) The form of the label bearing the required warning statement must comply with the requirements of 40 CFR §82.110.
  - d) No person may modify, remove, or interfere with the required warning statement except as described in 40 CFR §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 of 40 CFR Part 82:
  - a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices described in 40 CFR §82.156.
  - b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment described in 40 CFR §82.158.
  - c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR §82.161.
  - d) Persons disposing of small appliances, MVACs, and MVAC-like appliances must comply with the record keeping requirements of 40 CFR §82.166. ("MVAC-like" appliance as defined at 40 CFR §82.152).

- e) Persons owning commercial or industrial process refrigeration equipment must comply with the leak repair requirements pursuant to 40 CFR §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 40 CFR §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 contained 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.
- 5) 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.*

## 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(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(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, Compliance and Enforcement Section, P. O. Box 176, Jefferson City, MO 65102.
  - b) The permittee shall submit a report of all required monitoring by:
    - i) October 1st for monitoring which covers the January through June time period, and
    - ii) April 1st for monitoring which covers the July through December time period.
  - c) Each report shall identify any deviations from emission limitations, monitoring, record keeping, reporting, or any other requirements of the permit, this includes deviations or Part 64 exceedances.
  - d) Submit supplemental reports as required or as needed. 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.A 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 semiannual 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(6)(C)1.D Risk Management Plan Under Section 112(r)**

If the installation is required to develop and register a risk management plan pursuant to Section 112(R) of the Act, the permittee will verify that it has complied with the requirement to register the plan.

#### **10 CSR 10-6.065(6)(C)1.F Severability Clause**

In the event of a successful challenge to any part of this permit, all uncontested permit conditions shall continue to be in force. All terms and conditions of this permit remain in effect pending any administrative or judicial challenge to any portion of the permit. If any provision of this permit is invalidated, the permittee shall comply with all other provisions of the permit.

#### **10 CSR 10-6.065(6)(C)1.G 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 pursuant to 10 CSR 10-6.065(6)(C)1.

#### **10 CSR 10-6.065(6)(C)1.H Incentive Programs Not Requiring Permit Revisions**

No permit revision will be required for any installation changes made under any approved economic incentive, marketable permit, emissions trading, or other similar programs or processes provided for in this permit.



**10 CSR 10-6.065(6)(C)1.I Reasonably Anticipated Operating Scenarios**

None.

**10 CSR 10-6.065(6)(C)3 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 EPA Region VII, 11201 Renner Blvd., Lenexa, KS 66219, as well as the Air Pollution Control Program, Compliance and Enforcement Section, P.O. Box 176, Jefferson City, MO 65102. All deviations and Part 64 exceedances and excursions 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(6)(C)6 Permit Shield**

- 1) Compliance with the conditions of this permit shall be deemed compliance with all applicable requirements as of the date that this permit is issued, provided that:

- a) The applicable requirements are included and specifically identified in this permit, or
  - b) The permitting authority, in acting on the permit revision or permit application, determines in writing that other requirements, as specifically identified in the permit, are not applicable to the installation, and this permit expressly includes that determination or a concise summary of it.
- 2) Be aware that there are exceptions to this permit protection. The permit shield does not affect the following:
- a) The provisions of section 303 of the Act or section 643.090, RSMo concerning emergency orders,
  - b) Liability for any violation of an applicable requirement which occurred prior to, or was existing at, the time of permit issuance,
  - c) The applicable requirements of the acid rain program,
  - d) The authority of the Environmental Protection Agency and the Air Pollution Control Program of the Missouri Department of Natural Resources to obtain information, or
  - e) Any other permit or extra-permit provisions, terms or conditions expressly excluded from the permit shield provisions.

#### **10 CSR 10-6.065(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(6)(C)8 Operational Flexibility**

An installation that has been issued a Part 70 operating permit is not required to apply for or obtain a permit revision in order to make any of the changes to the permitted installation described below if the changes are not Title I modifications, the changes do not cause emissions to exceed emissions allowable under the permit, and the changes do not result in the emission of any air contaminant not previously emitted. The permittee shall notify the Air Pollution Control Program, Compliance and Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as well as EPA Region VII, 11201 Renner Blvd., Lenexa, KS 66219, at least seven days in advance of these changes, except as allowed for emergency or upset conditions. Emissions allowable under the permit means a federally enforceable permit term or condition determined at issuance to be required by an applicable requirement that establishes an emissions limit (including a work practice standard) or a federally enforceable emissions cap that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject.

- 1) Section 502(b)(10) changes. Changes that, under section 502(b)(10) of the Act, contravene an express permit term may be made without a permit revision, except for changes that would violate applicable requirements of the Act or contravene federally enforceable monitoring (including test methods), record keeping, reporting or compliance requirements of the permit.
  - a) Before making a change under this provision, The permittee shall provide advance written notice to the Air Pollution Control Program, Compliance and Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as well as EPA Region VII, 11201 Renner Blvd., Lenexa, KS 66219, describing the changes to be made, the date on which the change will occur, and any changes in emission and any permit terms and conditions that are affected. The permittee shall maintain a copy of the notice with the permit, and the APCP shall place a copy with the permit in the public file. Written notice shall be provided to the EPA and the APCP as above at least seven days before the change is to be made. If less than seven days notice is provided because of a need to respond more quickly to these unanticipated conditions, the permittee shall provide notice to the EPA and the APCP as soon as possible after learning of the need to make the change.
  - b) The permit shield shall not apply to these changes.

#### **10 CSR 10-6.065(6)(C)9 Off-Permit Changes**

- 1) Except as noted below, the permittee may make any change in its permitted operations, activities or emissions that is not addressed in, constrained by or prohibited by this permit without obtaining a permit revision. Insignificant activities listed in the permit, but not otherwise addressed in or prohibited by this permit, shall not be considered to be constrained by this permit for purposes of the off-permit provisions of this section. 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 subject to any requirements under Title IV of the Act or is a Title I modification;
  - b) The permittee must provide contemporaneous written notice of the change to the Air Pollution Control Program, Compliance and Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as well as EPA Region VII, 11201 Renner Blvd., Lenexa, KS 66219. This notice shall not be required for changes that are insignificant activities under 10 CSR 10-6.065(6)(B)3 of this rule. 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.
  - 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; and
  - d) The permit shield shall not apply to these changes.

#### **10 CSR 10-6.020(2)(R)34 Responsible Official**

The application utilized in the preparation of this permit was signed by Paul Hoemann, Director, Energy Management. Mr. Gregg Coffin, Director Energy Management is the current 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(6)(E)6 Reopening-Permit for Cause**

This permit may be reopened for cause if:

- 1) The Missouri Department of Natural Resources (MDNR) receives notice from the Environmental Protection Agency (EPA) that a petition for disapproval of a permit pursuant to 40 CFR § 70.8(d) has been granted, provided that the reopening may be stayed pending judicial review of that determination,
- 2) 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,
- 3) 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,
- 4) The installation is an affected source under the acid rain program and additional requirements (including excess emissions requirements), become applicable to that source, provided that, upon approval by EPA, excess emissions offset plans shall be deemed to be incorporated into the permit; or
- 5) MDNR or EPA determines that the permit must be reopened and revised to assure compliance with applicable requirements.

#### **10 CSR 10-6.065(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**  
Opacity Emission Observations

Date	Time	Emission Source	Visible Emissions		Excess Emissions		
			No	Yes <sup>1</sup>	Cause	Corrective Action	Initial

<sup>1</sup>If there are visible emissions, the permittee shall complete the excess emissions columns.

**Attachment B**

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 D**  
Emission Units and Emission Factors for Calculating Plantwide SO<sub>2</sub> Emissions

EQ Reference	Description	Bituminous Coal (lb/ton)	Natural Gas (lb/MMCF)	Biomass wood chips (lb/MMBtu)	TDF (lb/MMBtu)	Fuel Oil, Diesel, Kerosene (lb / 1,000 gal)
EP07	Boiler 7	38*S		0.025	1.0	
EP08	Boiler 8	38*S		0.025	1.0	
EP09	Boiler 9	38*S	1.5	0.025	1.0	
EP10	Boiler 10	38*S	1.5	0.025	1.0	
EP19	BFB-1 biomass boiler		1.5	0.025		
EP20	Boiler 12		1.5			142*S
EP18	North well RICE					142*S
EP23	Southwest well RICE					142*S
EP31	South well RICE		1.5			
EP25	East well RICE		1.5			
EP26	Turbine 1: turbine		1.5			142*S
	Turbine 1: duct burner		1.5			142*S
EP27	Turbine 2: turbine		1.5			142*S
	Turbine 2: duct burner		1.5			142*S
EP29	Power plant back-up RICE					142*S
EP22	ECCP RICE					142*S
EP16	Kerosene space heaters					142*S

S is sulfur weight %, with % sign removed, e.g. if sulfur content is 0.0015% then S is 0.0015.

Bituminous coal emission factor obtained from AP-42 Table 1.1-3.

Turbine natural gas emission factor obtained from AP-42 Table 3.1-2a (0.94\*S lb/MMBtu), 40 CFR 72.2 “pipeline natural gas” definition of 0.5 grains or less of total sulfur per 100 SCF (S = 1.62E-03), natural gas density of 0.044 lb/CF, and HHV of 1,020 Btu/CF. The result is 1.56 lb/MMCF. However all natural gas combustion types should have the same emission factor regardless of the type as long as there is good combustion. SO<sub>2</sub> is based upon fuel sulfur content. So, 1.5 lb/MMCF was selected.

RICE natural gas emission factor obtained from AP-42 Chapter 3.2 (5.88E-04 lb/MMBtu based upon sulfur content of 2,000 grains per MMCF), multiplied by the ratio of allowable sulfur in pipeline natural gas to 2,000 grains per MMCF (2.5), and HHV of 1,020 Btu/CF, equals 1.5 lb/MMCF.

Boiler and duct burner natural gas emission factor obtained from AP-42 Table 1.4-2 (0.6 lb/MMCF based upon sulfur content of 2,000 grains per MMCF), multiplied by the ratio of allowable sulfur in pipeline natural gas to 2,000 grains per MMCF (2.5), equals 1.5 lb/MMCF.

Biomass emission factor obtained from AP-42 Table 1.6-2.

TDF emission factor obtained from EPA document, *Burning Tires for Fuel and Tire Pyrolysis: Air Implications*, EPA-450/3-91-024, December 1991, Figure 6-2, 1 lb/MMBtu.

Boiler and duct burner fuel oil emission factor obtained from AP-42 Table 1.3-1 (142\*S lb/1,000 gal).

RICE fuel oil emission factor obtained from AP-42 Table 3.4-1 (1.01\*S lb/MMBtu). Converted to lb/1,000 gal using HHV of 137,000 Btu/gal, results in 138.37\*S lb / 1,000 gal. However, all fuel oil combustion types should have the same emission factor regardless of the type as long as there is good combustion. SO<sub>2</sub> is based upon fuel sulfur content. So, 142\*S was selected.

Turbine fuel oil emission factor obtained from AP-42 Table 3.1-2a (1.01\*S lb/MMBtu). Converted to lb / 1,000 gal using HHV of 137,000 Btu/gal, results in 138.37\*S lb / 1,000 gal. However, all fuel oil combustion types should have the same emission factor regardless of the type as long as there is good combustion. SO<sub>2</sub> is based upon fuel sulfur content. So, 142\*S was selected.

142\*S lb/1,000 gal is confirmed by mass balance. Fuel density 7.1 lb/gal, multiplied by 2 parts mass SO<sub>2</sub> created for every 1 part mass sulfur combusted.



## ATTACHMENT E-1 Monthly Individual HAP Emission Tracking Record for BFB 1

HAP Name: \_\_\_\_\_ CAS No.: \_\_\_\_\_

This sheet covers the month of \_\_\_\_\_ in the year \_\_\_\_\_.

Copy this sheet as needed

Column A	Column B	Column C	Column D	Column E
Date(s)	Biofuel Description	Amount Processed (tons)	Individual HAP Emission Factor (lb/ton)	(a) Individual HAP Emissions (tons)
(b) Total Individual HAP Emissions Calculated for this Month in Tons:				
(c) 12-Month Individual HAP Emissions Total From Previous Month's Attachment A, in Tons:				
(d) Monthly Individual HAP Emissions Total (b) from Previously year's Attachment A, In Tons:				
(e) Current 12-month Total of Individual HAP Emissions in Tons : [(b) + (c) - (d)]				

- (a)  $[\text{Column E}] = [\text{Column C}] \times [\text{Column D}] \times 0.0005$ . Emission factor obtained from performance tests required by this permit.
- (b) Summation of [Column E] in Tons;
- (c) 12-Month Individual HAP emissions total (e) from last month's Attachment A, in Tons;
- (d) Monthly Individual HAP emissions total (b) from previous year's Attachment A, in Tons;
- (e) Calculate the new 12-month Individual HAP emissions total.  
**A 12-Month Individual HAP emissions total (e) of less than 10.0 tons indicates compliance.**

**ATTACHMENT E-2**  
 Monthly Individual HAP Emission Tracking Record for BFB 1

This sheet covers the period from \_\_\_\_\_ to \_\_\_\_\_.  
 (month, year) (month, year)

Copy this sheet as needed

Column A	Column B	Column C	Column D	Column E
Date(s)	Biofuel Description	Amount Processed (tons)	HAP Emission Factor (lb/ton)	(a) HAP Emissions (tons)
(b) Total HAP Emissions Calculated for this Month in Tons:				
(c) 12-Month HAP Emissions Total From Previous Month's Attachment B, in Tons:				
(d) Monthly HAP Emissions Total (b) from Previously year's Attachment B, In Tons:				
(e) Current 12-month Total of HAP Emissions in Tons : [(b) + (c) - (d)]				

- (a) [Column E] = [Column C] x [Column D] x 0.0005. Emission factor obtained from performance tests required by this permit.
- (b) Summation of [Column E] in Tons;
- (c) 12-Month HAP emissions total (e) from last month's Attachment B, in Tons;
- (d) Monthly HAP emissions total (b) from previous year's Attachment B, in Tons;
- (f) Calculate the new 12-month HAP emissions total.

**A 12-Month HAP emissions total (e) of less than 25.0 tons indicates compliance.**

**ATTACHMENT F**  
 NOx Worksheet for Permit Condition 21

This worksheet covers the period from:  
 \_\_\_\_\_ to \_\_\_\_\_  
 (month/yr) (month/yr)

Date	1 Monthly Amount of Fuel Burned (1000 gallons) In EP23	2 Monthly Amount of Fuel Burned (MMCF) In EP25	3 Emission Factor (lbs/1000 gallon) <sup>1</sup> For EP23	4 Emission Factor (lb/MMCF) <sup>2</sup> for EP25	5 NOx Emissions (tons) (1) x (3) / 2000 from EP23	6 NOx Emissions (tons) (2) x (4) / 2000 from EP25	7 12-Month Total Cumulative NOx Emissions (tons) <sup>3</sup>
			469	2840			
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			469	2840			

<sup>1</sup> Emission Factor for SCC 20300101 from WebFire

<sup>2</sup> Emission Factor for SCC 20300201 from WebFire

<sup>3</sup> 12-month cumulative total NOx emissions = Nox Emissions from Column 5 + NOx Emissions from Column 6 + 11 previous months NOx Emissions from Columns 5 and 6. Must be below 40.0 tons to demonstrate compliance. Totals must include emissions from startup, shutdown and malfunctions.

## STATEMENT OF BASIS

### INSTALLATION DESCRIPTION

The University of Missouri (MU) owns and operates a combined heat and power plant that produces steam for electric generation and thermal energy for campus use. Emission units include four coal-fired boilers, a natural gas fired boiler, a biomass boiler, two natural gas combustion turbines, several emergency generators and engine driven pumps, cooling towers, fuel handling and storage and a paved haul road. The facility is major for emissions of CO, greenhouse gases (CO<sub>2e</sub>), HAPs, NO<sub>x</sub>, PM<sub>10</sub> and SO<sub>x</sub>. This facility is subject to 40 CFR Part 63 Subparts DDDDD and ZZZZ, 40 CFR Part 60 Subparts Db and GG and 40 CFR Part 64 Compliance Assurance Monitoring (CAM). This installation is a named source therefore fugitive emissions are counted towards major source applicability.

<b>Reported Air Pollutant Emissions, tons per year</b>						
Pollutants	2015	2014	2013	2012	2011	2010
Particulate Matter ≤ Ten Microns (PM <sub>10</sub> )	68.19	110.29	103.76	81.40	60.51	97.69
Particulate Matter ≤ 2.5 Microns (PM <sub>2.5</sub> )	64.83	96.50	94.29	78.79	56.07	84.86
Sulfur Oxides (SO <sub>x</sub> )	3,772.37	5,171.09	5,221.33	4,587.8	5,925.7	7,843.8
Nitrogen Oxides (NO <sub>x</sub> )	414.63	475.86	490.41	407.74	500.43	643.81
Volatile Organic Compounds(VOC)	3.84	3.83	3.36	2.81	3.38	7.28
Carbon Monoxide (CO)	93.11	217.37	149.48	56.79	70.05	118.83
Hazardous Air Pollutants (HAPs)	35.18	48.16	48.71	43.15	55.37	76.30
Ammonia (NH <sub>3</sub> )	1.29	1.59	1.06	0.3	0.06	0.07

### Updated Potential to Emit for the Installation

Pollutant	Potential to Emit (tons/yr) <sup>1</sup>
CO	737.85
CO <sub>2e</sub>	1,114,761
HAP	158.4
NO <sub>x</sub>	1380.4
PM <sub>10</sub>	340.55
PM <sub>2.5</sub>	276.50
SO <sub>2</sub>	2,000
VOC	31.5

- Potential to Emit for the Boilers was calculated assuming 8760 hours of operation per year using the worst case fuel when more than one fuel is burned. The emission limits from construction

permits CP0886-001, CP0494-020, CP042010-002 and CP112016-004 are taken into account when applicable (including the annual plant wide 2,000 ton SO<sub>2</sub> limit).

- Potential to Emit for the engines were calculated using the “worst case” fuel for each pollutant when more than one fuel is burned. The calculations assumed a maximum of 500 hours of operation per year because the engines are considered emergency/limited use.
- Potential to Emit for the Turbines and Duct Burners assumed 8760 hours of operation per year using the “worst case” fuel when more than one fuel is burned.
- Potential to Emit for the particulate matter sources assumes 8760 hours of operation unless limited by a construction permit. The use of control devices is accounted for when there is a federally enforceable condition requiring the use of the control device. The potential to emit for Emission Points EP38, EP39, EP40, EP41, EP42 and EP43 are taken from the calculations used in Construction Permit CP042010-002.

### **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) Part 70 Operating Permit Application, received August 9, 2013;
- 2) 2012 Emissions Inventory Questionnaire, received April 27, 2013; and
- 3) U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*; Volume I, Stationary Point and Area Sources, Fifth Edition
- 4) WEBFIRE;
- 5) Construction Permit 0494-020, Issued April 28, 1994;
- 6) Construction Permit 0494-018, Issued Jan 27, 1994;
- 7) Construction Permit 0296-007, Issued January 31, 1996;
- 8) Construction Permit 1096-021, Issued October 31, 1996;
- 9) Construction Permit 0697-002, Issued May 12, 1997;
- 10) Construction Permit 072000-005, Issued July 6, 2000;
- 11) Construction Permit 072000-005A, Issued September 26, 2000;
- 12) Construction Permit 032008-002, Issued March 4, 2008;
- 13) Construction Permit 032007-002A, Issued June 30, 2009;
- 14) Construction Permit 042010-002, Issued April 5, 2010;
- 15) Construction Permit 042010-002A, Issued July 8, 2010;
- 16) Construction Permit 042010-002B, Issued June 10, 2011;
- 17) Construction Permit 042010-002C, Issued June 13, 2012;
- 18) Construction Permit 042010-002D, Issued March 31, 2017
- 19) Construction Permit 092015-001, Issued September 1, 2015;
- 20) Construction Permit 112016-004, Issued November 8, 2016.

### **Air Regulations Determined Not to Apply to the Operating Permit**

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

#### 10 CSR 10-6.100, *Alternate Emission Limits*

This rule is not applicable because the installation is in an ozone attainment area.

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

### **Data Requirements Rule for the 2010 1-Hour SO<sub>2</sub> Standard**

40 CFR Part 51 Requirements for Preparation, Adoption and Submittal of Implementation Plans, Subpart BB *Data Requirements Rule for Characterizing Air Quality for the Primary SO<sub>2</sub> NAAQS*

The final SO<sub>2</sub> Data Requirements Rule (DRR) was signed on August 10, 2015. The final rule requires evaluations of all sources that emitted more than 2,000 tons per year of SO<sub>2</sub> in 2014. Under the DRR these sources have three options:

- Option 1 allows sources to take a plant-wide 2,000 ton per year limit on SO<sub>2</sub> emissions;
- Option 2 allows sources to perform modeling to demonstrate compliance; and
- Option 3 allows sources to install monitors.

MU Power Plant has decided to take the 2,000 ton per year plant wide SO<sub>2</sub> emissions limit to comply with the DRR. Plant Wide Permit Condition PW1 includes the limit in the operating permit. Monitoring and Recordkeeping to demonstrate compliance with the 2,000 ton per year SO<sub>2</sub> emission limit shall be as described in Plant Wide Permit Condition PW1.

### **Construction Permit History**

The following construction permits have been issued to this facility:

Construction Permit 0886-004, Issued August 18, 1986

This construction permit authorized the construction of a 259.5 MMBtu/hr coal-fired boiler. The boiler will generate steam to be used for the generation of electric power and for space heating and air-conditioning within the University complex. No special conditions from this construction permit are included in the operating permit because they were superseded by construction permit 042010-020.

Construction Permit 0494-020 and 0494-020a, Issued April 28, 1994

This construction permit authorized the construction of a new 325 MMBtu/hr dual-fuel (natural gas and fuel oil) boiler.

Construction Permit 0294-018, Issued January 27, 1994

This construction permit authorized the construction of a diesel-powered 500kw, Caterpillar standby generator to be used during emergencies with regularly scheduled start-ups for testing and readiness.

Construction Permit 0296-007, Issued January 31, 1996

This construction permit authorized the construction of two (2) above ground, fixed roof, fuel oil storage tanks, each with a storage capacity of 19,500 gallons and one 1000KW emergency generator. The emergency generator will be used to provide emergency electrical power to the southwest well pumping system and also peaking power for the campus electrical distribution system.

Construction Permit 1096-021, Issued October 31, 1996

This construction permit authorized the construction of a natural gas 69-hp reciprocating engine which is used to operate the east well pump.

Construction Permit 0697-002, Issued May 12, 1997

This construction permit authorized the installation of a 45-gallon, solvent-based parts cleaner to be used in the power plant maintenance shop. However, solvents are no longer used in the parts cleaner.

Construction Permit 072000-005, Issued July 6, 2000

Construction Permit 072000-005A, Issued September 26, 2000

This construction permit authorized the construction of two (2) 12.7 Megawatt (MW) combined cycle gas turbines with two (2) 99 MMBtu/hr boilers and one nominal 2 MW back-up generator. This permit was amended to replace the continuous emission monitoring system (CEMS) requirement for carbon monoxide with a periodic monitoring requirement, to expand the guidelines for CEMs to include the option of using 40 CFR Part 60 and to correct typographical errors.

Construction Permit 042007-017, Issued April 27, 2007

Construction Permit 042007-017A, Issued April 2, 2008

This temporary construction permit authorized the burning of up to 7,500 tons per year biomass fuels in the boilers in order to assess the functionality of burning biomass in the coal-fired boilers and gain experience with material handling and general combustion issues. This temporary permit expired May 1, 2009. This permit was amended to allow the addition of a feedwagon to the temporary permit, which will be used to directly feed biomass onto the fuel conveyors. The feedwagon has since been removed.

Construction Permit 032008-002, Issued March 4, 2008

Construction Permit 032008-002A, Issued April 27, 2009

Construction Permit 032008-002B, Issued July 13, 2012

This construction permit authorized the construction of two (2) new cooling towers to replace the four (4) existing cooling towers. One cooling tower is to be used to cool hot water from the steam turbine condenser and to send the cooled water back into the condenser to condense steam. The other cooling tower is to be used to cool hot water from the plant's auxiliary heat exchangers and to send cooled water back into the heat exchangers. This permit was amended to allow the removal of the closed loop heat-exchanger cooling tower from the permit and lower the drift loss limit to less than 0.0010% of the water circulation for the remaining cooling tower.

Construction Permit 042010-002, Issued April 5, 2010

Construction Permit 0420010-002A, Issued July 8, 2010

Construction Permit 042010B, Issued June 10, 2011

Construction Permit 042001C, Issued June 13, 2012

Construction Permit 042010-002D, Issued March 31, 2017

Construction permit 042010-002 authorized the construction of a new biomass-fired bubbling fluidized bed boiler to replace an existing coal-fired boiler (Boiler 11), as well as replacement of most of the existing fuel and storage system with a new enclosed fuel handling and storage system. Amendment A was issued to revise Special Condition 6, to allow for the haul road silt loading testing and maintenance requirements to coincide with the initial operation of the biomass boiler following construction completing.

Amendment B was issued to approve a change to Special Condition 6 of Construction Permit 042010-002. Special Condition 6 established the haul road silt loading testing and maintenance requirements for the facility. MU requested that Special Condition 6 be modified to coincide with initial operation of the biomass boiler (BFB 1) following construction completion.

Amendment C was issued to clarify special conditions related to the coal portion of the new fuel handling/storage system

The final amendment was issued March 31, 2017 to amend permit 042010-002A to modify wording and emission calculations to reflect final design of the fuel-handling system. The modifications to the original permit are as follows:

- Special Condition 1 states that the conditions of this construction permit supersede all special conditions found construction permits 0886-004, 042010-002 and 042010-002A. This condition was not included in the operating permit.
- Special Condition 9A requires that the permittee render Boiler 11 and Cooling Towers CT6, CT7, CT8 and CT9 inoperable and shall discontinue the usage of these emission units before the biomass boiler and fuel handling and storage system is completed and operational. This condition was not included in the operating permit because the requirement has been fulfilled by the time of issuance.
- Special Condition 9A requires that the permittee notify the Air Program following the startup of the new units associated with this construction permit. This condition was not included in the operating permit because the requirement has been fulfilled by the time of issuance.
- Special Condition 10 states that the permittee may request an amendment to the construction permit in accordance with 10 CSR 10-6.060(10)(B). This condition was not included in the operating permit.
- Special Conditions 6C through E require testing to verify the silt loading of the paved haul road. Since this testing has been completed and reported, this condition was not included in the operating permit.
- Special Condition 4.H-4.L required compliance testing of the baghouses, bin vents, and filters. These conditions were not included in the operating permit because this testing has been completed. The following tables summarizes the results of testing:

**BFB-1 Compliance Table**

Source	Compliance Test	Compliance Date	
Boiler BFB-1	acetaldehyde	June 17, 2015	4.C.
	benzene	June 17, 2015	4.C.
	chlorine	October 2, 2013	4.C.
	dichloromethane	June 17, 2015	4.C.
	formaldehyde	June 17, 2015	4.C.
	methanol	March 12, 2014	4.C.
	styrene	March 12, 2014	4.C.
	toluene	March 12, 2014	4.C.
	hydrogen chloride	October 2, 2013	4.C.
Boiler BFB-1	carbon monoxide	June 17, 2015	4.E.
Boiler BFB-1	dioxins/furans	October 2, 2013	2.E.3)e)



Boiler BFB-1	PM10	March 12, 2014	4.B.
Boiler BFB-1	PM2.5	March 12, 2014	4.B.
Boiler BFB-1	PMcond	October 2, 2013	2.E.3)b)
Boiler BFB-1	PM10 CAM Plan	to be included in operating permit	4.B.
Haul Road	PM10	May 20, 2014	6.D.
Fuel-Handling System Dust Collectors	PM10 coal PM10 biomass	October 9, 2012 July 13, 2013	3.C.
Boiler 11, Cooling Towers CT6-CT9	demolition	October 5, 2009	9.A.

**Performance results summary for particulate matter testing (Permit Condition 3.C)**

	<b>Biomass Unloading Elevator Dust Collector</b>	<b>Biomass Storage Silo East Dust Collector</b>	<b>Biomass Metering Bin Dust Collector</b>	<b>Limit (gr/dscf)</b>
Run 1	0.0000758	0.000109	0.000336	0.01
Run 2	0.000197	0.000154	0.000384	
Run 3	0.000336	0.000115	0.000102	
Average	0.000203	0.000126	0.000274	

Construction Permit 092015-001, Issued September 1, 2015

This construction permit authorized the increase in hydrated lime dry sorbent injection. This increase is necessary in order to meet the HCl limitation in 40 CFR part 63 Subpart DDDDD.

Construction Permit 112016-004, Issued November 8, 2016

This construction permit authorized the construction of new natural gas burners in existing Boiler 10 along with new gas fuel trains, a new burner management control system and modifications to the existing windboxes and dampers. This permit also limits the installation wide SO<sub>2</sub> emissions to less than 2,000 tons per year as a compliance option with the 40 CFR 51 Subpart BB, *Data Requirements for Characterizing Air Quality for the Primary SO<sub>2</sub> NAAQS*, §51.1203(e)(1).

**New Source Performance Standards (NSPS) Applicability**

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*. This rule applies to tanks storing VOCs with a capacity of 19,800 gallons capacity. It does not apply to the storage tanks at this facility because they are below 19,800 gallon capacity and therefore they are listed as emission units without limitations.

40 CFR Part 60 Subpart GG, *Standards of Performance for Stationary Gas Turbines*, applies to Emission Units EU0130 and EU0140. §60.333(b) and limits the sulfur content in the fuel to less than 0.8% by weight. This limit was not included in the operating permit because Construction Permit 072000-005 Special Condition No. 3 requires a more stringent limit of 0.05% sulfur content by weight.

40 CFR Part 60 Subpart Da, *Standards of Performance for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978*, applies to electric utility steam generating units greater than 250 MMBtu/hour heat input. The University of Missouri Power Plant is not considered an Electric Utility. The MU Power Plant is a cogeneration facility generating steam for campus and utilizing excess steam for electricity strictly for the campus. Less than 33% of the electricity generated is sold to the grid. Therefore, this subpart does not apply.

40 CFR Part 60 Subpart Db, *Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units* applies to units EP20 (Boiler #12) and EP19 (Biomass Boiler). This Subpart applies to steam generating units that commence construction, modification, or reconstruction after June 19, 1984, and that have a heat input capacity greater than 29 MW (100 million Btu/hour). The sulfur dioxide monitoring required by this subpart is not applicable to boiler #12 because it burns very low sulfur fuel (fuel oil with a sulfur content less than 0.5 %).

40 CFR Part 60 Subpart Db, *Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units*  
This rule is not applicable to emission units EP26 and EP27 (Duct Burners associated with Combustion Turbines). The Duct Burners' design heat input (99 MMBtu/hr) are less than 100 MMBtu/hr each [40 CFR Part 60 Subpart Db – 60.40b(a).]

40 CFR Part 60 Subpart Dc, *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*  
This rule applies to units EP26 and EP27 Duct Burners associate with Combustion Turbines.

40 CFR Part 60 Subpart KKKK, *Standards of Performance for Stationary Combustion Turbines*  
This subpart is not applicable to Combustion Turbine Train 1 (EP26) and Combustion Turbine Train 2 (EP27) because the rule applies to new stationary combustion turbines that commenced construction, modification, or reconstruction after February 18, 2005.

40 CFR Part 60 Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*  
This subpart does not apply to the emergency generators or pumps because they were installed prior to July 11, 2005.

40 CFR 60 Subpart JJJJ, *Standards of Performance for Stationary Spark Ignition Internal Combustion Engines*  
This subpart does not apply to the emergency generators or pumps because they were installed prior to June 12, 2006.

40 CFR Part 60 subpart Y, *Standards of Performance for Coal Preparation and Processing Plants*  
 This subpart does not apply because the installation does not meet the definition of *Coal Preparation and Processing Plant* within the subpart (a facility which prepares coal by one or more of the following processes: breaking, crushing, screening, wet or dry cleaning, and thermal drying).

**Maximum Achievable Control Technology (MACT) Applicability**

40 CF Part 63 Subpart DDDDD, *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters*

This subpart applies to industrial, commercial or institutional boilers and process heaters located at a major source of HAPs.

This subpart applies to EP07 (Boiler #7), EP08 (Boiler #8), EP09 (Boiler #9) and EP10 (Boiler #10). These boilers are classified as units designed to burn solid fuel/stokers designed to burn coal. They are subject to HCl, Mercury, PM and CO limits as well as work practice standards. PM is controlled by baghouse and opacity is limited to 10% for these units. The permittee must monitor opacity or maintain and operate a bag leak detection system.

This subpart applies to EP20 (Boiler #12). This boiler is classified as a unit designed to burn gas 1 subcategory and is subject to the work practice standards of this subpart only.

This subpart applies to EP19 (Biomass Boiler). This boiler is classified as a unit designed to burn solid fuel/fluidized bed unit designed to burn biomass. This boiler is subject to HCl, Mercury, PM and CO limits as well as work practice standards. PM is controlled by a baghouse and opacity is limited to 10% for these units. The permittee must monitor opacity or maintain and operate a bag leak detection system.

Initial compliance requirements from Subpart DDDDD are not included in the operating permit because they have already been fulfilled. Initial performance testing on EP19, EP07, EP08, EP09 and EP10 was performed on March 7, 2016. The results are summarized in the table below:

Unit ID	Pollutant Tested	Measured Emissions	Emission Limit
EP19	Filterable PM	0.0009	0.11 lb/MMBtu
	CO	191.3	470 ppmvd @ 3% O <sub>2</sub>
	HCl	0.000136	0.022 lb/MMBtu
	Mercury	0.000000342	0.0000057 lb/MMBtu
EP07, EP08 & EP09	Filterable PM	0.0030	0.04 lb/MMBtu
	CO	55.4	160 ppmvd @ 3% O <sub>2</sub>
	Mercury	0.00000566	0.0000057 lb/MMBtu
EP10	Filterable PM	0.0032	0.04 lb/MMBtu
	CO	36.1	160 ppmvd @ 3% O <sub>2</sub>
	Mercury	0.00000289	0.0000057 lb/MMBtu

40 CF Part 63 Subpart UUUUU, *National Emission Standards for Hazardous Air Pollutants: Coal and Oil Fired Electric Utility Steam Generating Units*

This subpart does not apply to the boilers at this facility because they do not meet the definition of Electric Utility Steam Generating Units (EGU). An EGU is a fossil fuel-fired combustion unit of more than 25 megawatts electric (MWe) that serves a generator that produces electricity for sale. The

University of Missouri Power Plant produced electricity and steam to serve the Columbia, MO campus and does not provide electricity for sale.

40 CFR Part 63 Subpart ZZZZ, *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*

This subpart applies to the following units:

<b>Emission Unit</b>	<b>Description</b>	
EP23	Southwest Well Generator	Existing Units (constructed prior to December 19, 2002) greater than 500 hp
EP18	North Well Generator	
EP29	Plant Back Up Diesel Generator	
EP25	East Well Engine Driven Pump	Existing Units (constructed prior to June 12, 2006) less than 500 hp
EP31	South Well Engine Driven Pump	

40 CFR Part 63 Subpart YYYY, *National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines*

This subpart is not applicable to Combustion Turbine Train 1 (EP26) and Combustion Turbine Train 2 (EP27) because they are existing stationary turbines and per 40 CFR 63.6090(b)(4) existing stationary combustion turbines in all subcategories do not have to meet the applicability requirements of subpart YYYY and of subpart A of part 63. In addition, no initial notification is necessary for any existing stationary combustion turbine.

40 CFR Part 63 Subpart Q, *National Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers*

This subpart does not apply to this installation because the cooling towers are not operating with chromium-based water treatment chemicals.

**National Emission Standards for Hazardous Air Pollutants (NESHAP) Applicability**

In the permit application and according to APCP records, there was no indication that any Missouri Air Conservation Law, Asbestos Abatement, 643.225 through 643.250; 10 CSR 10-6.080, Emission Standards for Hazardous Air Pollutants, Subpart M, National Standards for Asbestos; and 10 CSR 10-6.250, Asbestos Abatement Projects - Certification, Accreditation, and Business Exemption Requirements apply to this installation. The installation is subject to these regulations if they undertake any projects that deal with or involve any asbestos containing materials. None of the installation's operating projects underway at the time of this review deal with or involve asbestos containing material. Therefore, the above regulations were not cited in the operating permit. If the installation should undertake any construction or demolition projects in the future that deal with or involve any asbestos containing materials, the installation must follow all of the applicable requirements of the above rules related to that specific project.

**Compliance Assurance Monitoring (CAM) Applicability**

40 CFR Part 64, *Compliance Assurance Monitoring (CAM)*

The CAM rule applies to each pollutant specific emission unit that:

- Is subject to an emission limitation or standard, and
- Uses a control device to achieve compliance, and
- Has pre-control emissions that exceed or are equivalent to the major source threshold.

EP07 through EP10 (Boilers 7 through 10) are not subject to CAM because they are subject to 40 CFR Part 63 Subpart DDDDD and are therefore exempt per §64(2)(b)(i). EP20 – Boiler 12 is not subject because it does not have pre-control emissions that exceed or are equivalent to the major source threshold.

EP-19 Biomass Boiler has PTE for PM<sub>10</sub> greater than major source threshold:

MHDR = 227 MMBtu/hr

EF(from AP-42 Table 1.6-1 for Bark/Wet Wood) = 0.5 lb/MMBtu

PM<sub>10</sub> PTE = 227 MMBtu/hr x 0.5 lb/MMBtu x 8760 hr/year ÷ 2000 lb/ton = 497 ton/year

EP-19 is subject to the PM<sub>10</sub> emission standard of 1.14 lb/hr from Construction Permit 042010-002 and uses a fabric filter to achieve compliance with the emission standard. Therefore, EP-19 Biomass boiler is subject to CAM.

The post-control potential to emit is less than major source threshold therefore this unit is determined to be in the category of “other PSEU” (in other words, not a “large PSEU”).

### **Greenhouse Gas Emissions**

This installation is a major source for greenhouse gases. Major stationary sources are required by the Clean Air Act (CAA) to obtain Part 70 operating permits. While Part 70 permits generally do not establish new emissions limits, they consolidate applicable requirements, as defined in Missouri State Regulations 10 CSR 10-6.020(2)(A)23, into a comprehensive air permit. At the time of permit issuance, there were no applicable GHG requirements for this source.

Note that this source is subject to the Greenhouse Gas Reporting Rule. However, the preamble of the GHG Reporting Rule clarifies that Part 98 requirements do not have to be incorporated in Part 70 permits operating permits at this time. In addition, Missouri regulations do not require the installation to report CO<sub>2</sub> emissions in their Missouri Emissions Inventory Questionnaire; therefore, the installation’s CO<sub>2</sub> emissions were not included within this permit. An estimate of CO<sub>2</sub> emissions are included in the statement of basis. The applicant is required to report the data directly to EPA. The public may obtain CO<sub>2</sub> emissions data for this installation by visiting EPA’s Clean Air Markets website at: <http://camddataandmaps.epa.gov/gdm/index.cfm>.

### **Other Regulatory Determinations**

10 CSR 10-6.405 *Restriction of Particulate Matter Emissions From Fuel Burning Equipment Used for Indirect Heating*. Emission Limit for Existing Indirect Heating (installed by February 15, 1979):

$$E = 0.90Q^{(-0.174)} = 0.9(1204.15)^{(-0.174)} = 0.26 \text{ lb/MMBtu}$$

Where Q = the installation heat input in millions of Btu per hour.

As stated in 10 CSR 10-3.060(3)(C)... “For the purposes of this rule, the heat input shall be the aggregate heat content of all fuels whose products of combustion pass through a stack. The heat input value used shall be the equipment manufacturer’s or designer’s guaranteed maximum input...”

The following equipment was used to obtain the total heat input (Q) for the above equation:

Equipment	Year Installed	Heat Input (MMBtu/hr)
Boiler 7	1956	104.0
Boiler 8	1956	104.0
Boiler 9	1966	175.0
Boiler 10	1970	269.0
Boiler 12	1994	325.0
Biomass Boiler	2012	227.0
Kerosene Space Heaters		0.15
<b>TOTAL</b>		<b>1204.15</b>

Boilers 7, 8, 9 and 10 are subject to the particulate emission limits of 10 CSR 10-6.405, however the particulate matter emission limit in 40 CFR Part 63 Subpart DDDDD is 0.04 lb/MMBtu which is more stringent. Only the Subpart DDDDD limit was included in the operating permit because compliance with the 0.04 lb/MMBtu limit ensures compliance with the 0.26 lb/MMBtu limit.

Boiler 12 (EP20) and the Biomass Boiler (EP19) are not subject to 10 CSR 10-6.405 because they are subject to the particulate matter emission limits established in 40 CFR Part 60 Subpart Db, Construction Permit 0494-020 (EP20) and Construction Permit 042010-002 (EP19). The Kerosene Space Heaters are not subject to this regulation because they are direct fired units.

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

This regulation does not apply to the following units due to the exemption in 10 CSR 10-6.400(B)15.

Emission Unit	Description	Control Device Required By
EP32	Hydrated Lime Storage Silo Filter Vent	CP092015-001, Condition 1.B
EP05	East Ash Silo Conveying Air Vent	CP092015-001, Condition 1.C
EP12	West Ash Silo Conveying Air Vent	CP092015-001, Condition 1.C
EP06	East Ash Silo Unloading and Bin Vent	CP092015-001, Condition 1.E
EP13	West Ash Silo Unloading and Bin Vent	CP092015-001, Condition 1.E
EP38	Coal Unloading	CP042010-002, Condition 3.B
EP39	Biomass Fuel Metering Bin	
EP40-1	Coal-Handling Belt Conveyor N	
EP40-2	Coal-Handling Belt Conveyor S	
EP41	Biomass Conveying	
EP42-1	Coal East Silo	
EP42-2	Coal West Silo	
EP42-3	Biomass East Silo	
EP42-4	Biomass West Silo	
EP42-5	Biomass/Alternative Fuel Silo	

10 CSR 10-6.260, *Restriction of Emission of Sulfur Compounds*

10 CSR 10-6.261, *Control of Sulfur Dioxide*

These regulations do not apply to EP25 (East Well Engine Driven Pump) and EP31 (South Well Engine Driven Pump) because it burns natural gas only and is exempt per 10 CSR 10-6.261(1)(A).

These rules do not apply to EP20 (Boiler 12) because it is subject to a more stringent federally enforceable sulfur content limit in Construction Permit 0494-020.

These rules do not apply to EP29 Power Plant Back Up Diesel Generator or EP 26 & 27 (Combustion Turbines) because they are subject to a more stringent federally enforceable fuel sulfur content limit in Construction Permit 072000-005A.

10 CSR 10-6.260 was rescinded from the Missouri Code of State Regulations Rules on November 30, 2015, however it has not been removed from the State Implementation Plan (SIP) as of the issuance of this operating permit. This rule will remain in the operating permit until it is removed from the SIP. During this time it will be a federally enforceable condition only.

10 CSR 10-6.220 *Restriction of Emission of Visible Air Contaminants*

This rule is not applied to the following units for the reasons specified:

Emission Unit	Reason not applicable
EP07 through EP10 - Boilers	Exempt per 10 CSR 10-6.220(1)(J)3
EP26 & EP27 – Combustion Turbines	Internal Combustion Engines are exempt per 10 CSR 10-6.220(1)(A)
EP23 – Southwest Well Generator	
EP-25 – East Well Engine Driven Pump	
EP18 – North Well Generator	
EP31 – South Well Engine Driven Pump	
EP19 - Biomass Boiler	COMS used to demonstrate compliance with a PM limit
EP20 – Boiler 12	6.220 is applicable but not applied because this unit is subject to a more stringent opacity limit in Construction Permit 0494-020

Monitoring of EP06 and EP13 is not required due to these units being subject to weekly method 22 observations under Construction Permit 092015-001. Monitoring of EP38, EP39, EP40-1, EP40-2, EP41, and EP42-1 through 42-5 is satisfied through the monitoring required by the amendment to Construction Permit 042010-002.

**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 APCP'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).



## Response to Public Comments

The draft Part 70 Operating Permit for University of Missouri Power Plant (019-0004) was placed on public notice as of April 28, 2017 for a 30-day comment period. The public notice was published on the Department of Natural Resources' Air Pollution Control Program's web page at: <http://www.dnr.mo.gov/env/apcp/PermitPublicNotices.htm>. On May 23, 2017 the Air Pollution Control Program received comments from Mark Smith, EPA Region 7. The comments are addressed below in the order in which they appear within the letter.

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**Comment #1 from EPA:** Plant Wide Permit Condition PW1 limits the permittee to less than 2,000 tons of SO<sub>2</sub> per calendar year 2017 and thereafter from the entire installation, as defined in Attachment E, inclusive of startup, shutdown and malfunction. In order for this plant wide emission limit to be considered federally enforceable to avoid either modeling or monitoring to characterize ambient air quality in areas with large sources of SO<sub>2</sub> emissions, the limit must be based on a 12-month rolling total following the capture of emission information for calendar year 2017, consistent with long standing EPA practice (see John Seitz June 13, 1989 memorandum titled "Guidance on Limiting Potential to Emit in New Source Permitting"). Therefore, EPA recommends MDNR consider revising the limit in PW1 to reflect the SO<sub>2</sub> limit as a rolling 12-month total. Also, the Monitoring/Record keeping requirement 1) g) implies that the permittee is required to conduct testing to establish SO<sub>2</sub> emission factors. However, it is unclear what testing is being referenced and therefore, EPA recommends MDNR consider adding clarification of the testing needed to establish SO<sub>2</sub> emission factors for use in Attachment E.

**Response to Comment 1:** Page 51088 of the Federal Register, Vol 80, No 162 dated Friday August 21, 2015 requires that there be a federally enforceable condition to "require the applicable sources in the area to emit less than 2,000 tons of SO<sub>2</sub> per year for calendar year 2017 and thereafter..." As the rule is written there is no requirement that the limits be based on a 12-month rolling total, therefore the operating permit may not require the permittee to demonstrate compliance with the emission limit on a 12-month rolling period. Monitoring/Recordkeeping 1) g) requires the permittee to *test the fuel sulfur weight % in the fuel* for use in developing SO<sub>2</sub> emission factors. The permittee shall use the emission factors to calculate the SO<sub>2</sub> emissions in order to demonstrate compliance with the 2,000 SO<sub>2</sub> emission limit.

**Comment #2 from EPA:** Permit Condition 2 incorporates applicable special conditions from Permit to Construct #092015-001, issued September 1, 2015, and requires the use of baghouses (CD01 and CD02) to control emissions from Boiler 7 (EP07), Boiler 8 (EP08), Boiler 9 (EP09) and Boiler 10 (EP10). Permit Condition 2 also requires the permittee to monitor and record operating pressure drop across the baghouses at least once every 24 hours. It appears that this pressure drop monitoring is being used to determine baghouse malfunction due to bag breakage. Permit Condition 3 incorporates applicable requirements from 40 CFR Part 63, Subpart DDDDD-National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial and Institutional Boilers and Process Heaters, which impact Boiler 7 (EP07), Boiler 8 (EP08), Boiler 9 (EP09) and Boiler 10 (EP10). As stated in Emission Limitation 3), of Permit Condition 3, the permittee must

install a fabric filter control (baghouse) on units not using a PM CEMS and install and operate a bag leak detection system according to §63.7525. The bag leak detection system required by §63.7525 appears to be a more stringent and duplicative technique, than the once every 24-hour pressure drop recording. EPA recommends MDNR consider revisiting Permit Condition 2 and Permit Condition 3 and determine if there is an opportunity to streamline and subsume certain applicable requirements.

**Response to Comment 2:** The requirement to install and operate a bag leak detection system in lieu of PM CPMS/CEMS is only applicable to boilers with an average annual heat input rate greater than 250 MMBtu. None of the boilers (Boilers 7 through 10) have an annual heat input rate greater than 250 MMBtu therefore the requirement to install and operate a bag leak detection system is not required. Table 4 from Subpart DDDDD which is included in Permit Condition 3 has been updated to remove the requirement to install the bag leak detection system.

**Comment #3 from EPA:** The Initial and Continuing Compliance requirement 5), in Permit Condition 3, directs the permittee to conduct fuel analysis for each type of fuel burned in each boiler that demonstrates compliance with the hydrogen chloride (HCl), mercury (Hg) or total selected metals (TSM) limits through fuel analysis. Based on review of the draft operating permit, EPA is unable to determine if the permittee has selected the option of fuel analysis for the determination of HCl, Hg or TSM compliance. If the permittee has selected the fuel analysis option, EPA is unable to identify the operating limits established by the permittee for each boiler. In addition, the Initial and Continuing Compliance requirement 8), in Permit Condition 3, indicates existing sources must complete initial compliance demonstration no later than 180 days after the compliance date. §63.7495 (b) indicates a compliance date of January 31, 2016, therefore, the initial tune-up and one-time energy assessment, required by item 8), should have already been completed and requirement 8) may no longer be applicable. However, the record keeping requirements to maintain the energy assessment and tune-up may still need to be specifically identified.

**Response to Comment 3:** The permittee has demonstrated compliance with the emission limits in Table 2 by performance testing. The results of the performance testing have been added to the statement of basis. The initial compliance demonstration requirements including the initial tune-up and one-time energy assessment have been removed from the permit condition.

**Comment #4 from EPA:** Permit Condition 3 includes appropriate excerpts of: Table 2 to 40 CFR Part 63, Subpart DDDDD-Emission Limits for Existing Boilers and Process Heaters; Table 3 to 40 CFR Part 63, Subpart DDDDD-Work Practice Standards; Table 4 of 40 CFR Part 63, Subpart DDDDD-Operating Limits for Boilers and Process Heaters; and Table 9 to 40 CFR Part 63, Subpart DDDDD-Reporting Requirements. The Initial and Continuing Compliance requirements, in Permit Condition 3, makes reference to Table 5, Table 6, Table 7 and Table 8, however, equivalent excerpts of these tables are not included. For ease of compliance and operating permit consistency, EPA recommends MDNR consider including the appropriate excerpts from Table 5, Table 6, Table 7 and Table 8 in the final draft permit. Finally, Monitoring requirement b), in Permit Condition 3, indicates it applies to boilers with an average heat input rate greater than 250 MMBtu/hr from solid fossil fuel and / or heavy liquid fuel. Based on boiler information presented in the draft operating permit, Boiler 10 (EPI0) is the only emission unit with a maximum design heat input greater than 250 MMBtu/hr and the average annual heat input rates for the four (4)

applicable boilers is not given. So, this requirement may only apply to Boiler 10 and if the permittee is demonstrating compliance with the PM limit, instead of alternate TSM limit for Boiler 10, then permittee must install, maintain and operate a PM CPMS to monitor emissions and record the output of the system. If the permittee is in fact following this option, EPA recommends MDNR consider drafting this requirement to match what the permittee has actually opted to undertake.

**Response to Comment 4:** Tables 5, 6, 7 list requirements associated with initial compliance and performance testing. The initial performance testing has been completed so these tables are not included in the operating permit, but are rather incorporated by reference. It is customary practice to incorporate by reference performance testing requirements within operating permits. The results of the initial tests have been added to the statement of basis. Table 8 applicable requirements have been added to the permit condition as this table includes continuous compliance requirements.

After speaking with the facility about Boiler 10 it was learned that although the boiler has a maximum heat input rate capacity of 269.4 MMBtu/hr, this boiler is never operated at maximum capacity, nor is it operated at an average annual heat input rate over 250 MMBtu/hr. Therefore Monitoring requirement b) is not applicable to this unit and was removed from permit condition 3.

**Comment #5 from EPA:** Permit Condition 4 incorporates applicable requirements from 40 CFR Part 60, Subpart Db - Standards of Performance for Industrial, Commercial and Institutional Steam Generating Units; and special conditions from Permit to Construct #0494-020, issued April 28, 1994. MDNR has included emission limitations for SO<sub>2</sub>, NO<sub>x</sub>, PM and opacity from Permit to Construct #0494-020, however, there are only monitoring requirements for SO<sub>2</sub>, opacity and NO<sub>x</sub>. Additionally, the requirements in Monitoring 2) and Particulate Matter and Nitrogen Oxides (Subpart Db) 1) appear to be redundant. Also, Record keeping requirement 1) b) requires the permittee to maintain records of opacity rate and finally, Record keeping requirements 2) requires records be kept for a period of two years. EPA suggests MDNR may wish to:

- Include PM monitoring for verification with the PM emission limit;
- Eliminate redundant requirements;
- Define opacity rate; and
- Provide an explanation why the record retention requirement of five (5) years in a Part 70 operating permit has been shortened to two years.

**Response to Comment 5:** Particulate Matter and Nitrogen Oxides (Subpart Db) 1) and 2) have been removed as they are already included in Monitoring 2) and Recordkeeping 2) has been changed to require the permittee to maintain records for a period of five years. Construction Permit 0494-020 special condition 3 requires the permittee to conduct performance testing in accordance with EPA Test Method 5 in order to determine that the actual emission rate of PM does not exceed the emission limit. If the unit does not meet the emission limit the permit condition requires the permit to cease operation of the boiler. Since the performance testing has been completed and not resulted in the shut down of the boiler, the testing requirements were not included in the operation permit under Permit Condition 4

**Comment #6 from EPA:** Permit Condition 7 incorporates applicable requirements from 40 CFR Part 60, Subpart Db- Standards of Performance for Industrial, Commercial and Institutional Steam Generating Units and its record keeping requirement 5) requires that records be kept for two years.

Here again, EPA suggests MDNR may want to provide an explanation why the record retention requirement of five (5) years in a Part 70 operating permit has been shortened to two years.

**Response to Comment 6:** The requirement to maintain records for two years has been changed to five years.

**Comment #7 from EPA:** Permit Condition 5 incorporates applicable requirements from 40 CFR Part 63, Subpart DDDDD- National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial and Institutional Boilers and Process Heaters, which impact Boiler 12, emission point EP20. Emission Limitation 3) requires the permittee to complete initial compliance demonstration no later than 180 days after the compliance date. §63.7495 (b) indicates a compliance date of January 31, 2016, therefore, the initial tune-up and one-time energy assessment should have already been completed and requirement 8) may no longer be applicable. However, the record keeping requirements to maintain the energy assessment and tune-up may still need to be specifically identified.

**Response to Comment 7:** The initial compliance requirements have been removed from Permit Condition 5.

**Comment #8 from EPA:** Permit Condition 6 incorporates applicable requirements from 40 CFR Part 63, Subpart DDDDD-National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial and Institutional Boilers and Process Heaters, which impact Biomass Boiler EP19. Permit Condition 6 includes appropriate excerpts of: Table 2 to 40 CFR Part 63, Subpart DDDDD-Emission Limits for Existing Boilers and Process Heaters; Table 3 to 40 CFR Part 63, Subpart DDDDD-Work Practice Standards; Table 4 of 40 CFR Part 63, Subpart DDDDD-Operating Limits for Boilers and Process Heaters; and Table 9 to 40 CFR Part 63, Subpart DDDDD-Reporting Requirements. The Initial and Continuing Compliance requirements, in Permit Condition 3, makes reference to Table 5, Table 6, Table 7 and Table 8, however, equivalent excerpts are not included. For ease of compliance and operating permit consistency, EPA recommends MDNR consider including the appropriate excerpts from Table 5, Table 6, Table 7 and Table 8 in the final draft permit.

**Response to Comment 8:** Tables 5, 6, 7 list requirements associated with initial compliance and performance testing. The initial performance testing has been completed so these tables are not included in the operating permit, but are rather incorporated by reference. It is customary practice to incorporate by reference performance testing requirements with operating permits. The results of the initial tests have been added to the statement of basis. Table 8 applicable requirements have been added to the permit condition as this table includes continuous compliance requirements.

**Comment #9 from EPA:** The Operational Limitation in Permit Condition 10 requires the controlled emission unit, Boiler 10 (EP10), to burn exclusively pipeline natural gas. However, Monitoring and Record keeping requirement 2) directs the permittee to keep vendor records representative of each coal, fuel oil / diesel, biomass and TDF sulfur weight %. EPA believes it may be unnecessary for the permittee to maintain records of the % sulfur in coal, fuel oil / diesel, biomass and TDF, for a boiler limited to burning pipeline natural gas.

**Response to Comment 9:** Construction Permit 112016-004 authorized the construction of four new natural gas burners for boiler #10. The operational limitation is limiting these burners to burn exclusively pipeline natural gas. However, the boiler remains capable of burning coal, biomass and tire derived fuel as well.

**Comment #10 from EPA:** Permit Condition 12 limits filterable PM<sub>10</sub> from any of nine (9) emission points listed in Table 1 of Permit Condition 12, to not more than 0.010 grains per dry standard cubic foot (gr/dscf). However, there does not appear to be any monitoring to verify compliance. Additionally, Monitoring/Record Keeping 1) requires a detailed visual inspection of the enclosures listed in the same Table 1, at least once each week, to ensure compliance. The term "detailed visual inspection" may be too vague to be enforceable as a practical matter and Table 1 does not include a list of enclosures. EPA suggests MDNR might want to clarify how the detailed visual inspection for filterable PM<sub>10</sub> is practically enforceable and also, MDNR may wish to provide the list of enclosures for inspection.

**Response to Comment 10:** Special Condition 4.H of Construction Permit 042010-002B required the permittee to conduct stack testing to verify compliance with the 0.010 gr/dscf emission limit. This testing was completed July 2-3, 2013 which is the reason the requirement was not included in the operating permit. Results of the testing have been added to the Statement of Basis Construction Permit History. The permit states that the emission sources listed in Table 1 of Construction Permit 042010-002B shall be enclosed and vented to a baghouse, bin vent or filter receiver, therefore the permit is clear on what must be enclosed. Periodic visual inspections of the enclosures are sufficient to determine that visual emissions are not occurring except through the stacks. The emissions from the stacks are subject to 6.220, *Restriction of Emission of Visible Air Contaminants* in Permit Condition 11 which provides more a detailed monitoring and record keeping schedule.

**Comment #11 from EPA:** The Emission Limitation in Permit Condition 13 limits the silt loading on the paved haul road to less than 2.4 grams per square meter; yet there is no compliance verification monitoring to ensure the 2.4 grams per square meter limit is being met; and so EPA suggests MDNR may wish to clarify how the permittee verifies compliance to this emission limit. Also, Permit Condition 17 is a "State Only" requirement as 10 CSR 10-6.261 has not yet been approved into the Missouri State Implementation Plan (SIP) therefore, EPA suggests MDNR should indicate Permit Condition 17 is "State Only." Additionally, Permit Condition 21 limits emissions of NO<sub>x</sub> from emission units EP23 (Southwest Well Generator) and EP25 (East Well Engine Driven Pump) to less than 40 tons in any consecutive 12-month period. Permit Condition 21 also offers that the permittee may use Attachment H to maintain compliance records. However, the source of the emission factor used in Attachment H has not been identified. To enhance practical enforceability of Attachment H, EPA recommends MDNR provide an emission factor reference.

**Response to Comment 11:** The construction permit contains a condition requiring the permittee to test the silt loading on the haul road in accordance with method ASTM-C-136. Testing was to be conducted once a quarter for four quarters following the issuance of the permit and if the four tests demonstrate compliance then no further testing is required. This condition has been fulfilled therefore it was not included in the operating permit. Permit Condition 13 also includes the requirement that the permittee develop, implement and maintain a Fugitive Dust Control Plan to control emissions from the haul road that insures compliance with the silt loading limit.

An explanation of Permit Condition 17 has been added stating that 10 CSR 10-6.261 is a state only requirement.

The recordkeeping attachments G and H have been combined into Attachment G which includes NO<sub>x</sub> emissions for both EP23 and EP25. The cumulative 12-month total emissions from these emission units must be below 40.0 to be in compliance with Permit Condition 21. The sources of the emission factors are WebFire for SCC Codes 20300101 and 20300201 which is indicated on Attachment G. The emission factors from the original construction permits were 496 lb/Mgal for SCC code 20300101 and 3400 lb/MMCF for SCC 20300201. The emission factors on Attachment G have been undated to include the current emission factors from WebFire which are 604 lb/Mgal and 2840 lb/MMCF respectively.

## Response to EPA Comments

The draft Part 70 Operating Permit for University of Missouri Power Plant (019-0004) was sent to EPA Region 7 for review June 22, 2017 for a 45-day comment period. The Air Pollution Control Program received comments from Mark Smith, EPA Region 7 on July 12, 2017. The comments are addressed below in the order in which they appear within the letter.

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### Comment #1 from EPA:

During the public comment period for the University of Missouri - Columbia draft Title V Renewal, the EPA provided a comment related to the SO<sub>2</sub> limit that is intended to satisfy the requirements of the Data Requirements Rule (DRR). The EPA stated that the SO<sub>2</sub> limit should be based on a 12-month rolling total rather than a calendar year. The EPA is providing the following additional information to further support our comment.

First, in an email dated September 8, 2015, MDNR specifically requested guidance from EPA on whether the limit should be based on a 12-month rolling total or a calendar year. The EPA responded in an email dated September 25, 2015 that the limit should be based on a 12-month rolling total. The EPA provided rationale similar to the third point below, to support this conclusion.

Second, in its response to EPA's comment on the SO<sub>2</sub> limit in the draft Title V Renewal, MDNR appears to claim that its interpretation of 40 CFR 52.1203(e) is that the ORR facility-wide SO<sub>2</sub> limitation should be based on a calendar year. However, this interpretation is not consistent with the DRR SO<sub>2</sub> facility-wide limits MDNR established for two other facilities in Missouri, specifically Mississippi Lime and Anheuser-Busch. In the Mississippi Lime Title V Permit issued November 2, 2016, emission limitation #1 states that "(t)he emission units listed in Table 1 shall emit less than 2,000 tons of SO<sub>2</sub> per year for calendar year 2017 and thereafter. [51.1203(e)(1)]" and monitoring condition #1 states that "(t)he permittee shall demonstrate compliance with emission limit condition 1 by calculating the monthly and 12-month rolling total SO<sub>2</sub> emissions for the affected emission units using the methods specified in Monitoring condition 3." In the Anheuser-Busch Title V Permit issued December 6, 2016, the emission limitation states that "(t)he permittee shall discharge into the atmosphere from the entire installation less than 2,000 tons of Sulfur Dioxide (SO<sub>2</sub>) in any consecutive 12-month period."

Further, the facility-wide DRR SO<sub>2</sub> limit in the construction permit issued on January 9, 2017, for Westar Tecumseh in Kansas is also based on a 12-month rolling total - "Beginning with calendar year 2017 and thereafter, EU-BLR7/9 shall be limited to below 2,000 tons per year SO<sub>2</sub> emissions on a 12- month rolling total basis." In fact, EPA Region 7 is not aware of any other permit limit, nationwide, taken to satisfy the Data Requirements Rule that was based on a calendar year.

Third, the DRR facility-wide SO<sub>2</sub> limit is required to be federally enforceable:

40 CFR 51.1203(e): "*Federally enforceable* requirement to limit SO<sub>2</sub> emissions to under 2,000 tons per year. For each area identified in the notification submitted pursuant to paragraph (b) of this section as an area for which the air agency will *adopt federally enforceable* requirements in lieu of

characterizing air quality through monitoring or modeling, the air agency shall submit documentation to the EPA by January 13, 2017, showing that such requirements have been adopted, are in effect, and been made federally enforceable by January 13, 2017, through an appropriate legal mechanism, and the provisions either: (1) Require the applicable sources in the area to emit less than 2,000 tons of SO<sub>2</sub> per year for calendar year 2017 and thereafter; or (2) Document that the applicable sources in the area have permanently shut down by January 13, 2017."

The EPA has a long history of taking the position that in order to be federally enforceable, limits are required to be enforceable as a practical manner. The EPA describes the meaning of enforceable as a practical manner in a 1989 memorandum from John Seitz. Section IV of this memorandum describes the time periods for limiting production and operation and includes the following paragraphs (emphasis added):

"As discussed above, a limitation specifically recognized by the regulations as reducing potential to emit is a limitation on production or operation. However, for *these limitations to be enforceable as a practical matter, the time over which they extend should be as short term as possible and should generally not exceed one month*. This policy was explained in a March 13, 1987 memorandum from John Seitz to Bruce Miller, Region IV. The requirement for a monthly limit prevents the enforcing agency from having to wait for long periods of time to establish a continuing violation before initiating an enforcement action.

*EPA recognizes that in some rare situations, it is not reasonable to hold a source to a one-month limit. In these cases, a limit spanning a longer time is appropriate if it is a rolling limit. However, the limit should not exceed an annual limit rolled on a monthly basis.* EPA cannot now set out all-inclusive categories of sources where a production limit longer than a month will be acceptable because every situation that may arise in the future cannot now be anticipated. However, permits where longer rolling limits are used to restrict production should be issued only to sources with substantial and unpredictable annual variation in production, such as emergency boilers. Rolling limits could be used as well for sources which shut down or curtail operation during part of a year on a regular seasonal cycle, but the permitting authority should first explore the possibility of imposing a month-by-month limit. For example, if a pulp drier is periodically shut down from December to April, the permit could contain a zero hours of operation limit for each of those months, and then the appropriate hourly operation limit for each of the remaining months. *Under no circumstances would a production or operation limit expressed on a calendar year annual basis be considered capable of legally restricting potential to emit.*"

Fourth, the EPA notes that in the University of Missouri's proposed DRR limit provided to EPA in the June 2016 timeframe, the University of Missouri appears to propose a limit based on a 12-month rolling total (the University of Missouri uses the phrase "12 calendar month rolling sum"). The EPA interpreted the request as a 12-month rolling total based, in large part, on the various conversations and emails with MDNR staff on the establishment of DRR facility-wide SO<sub>2</sub> limits in Missouri.

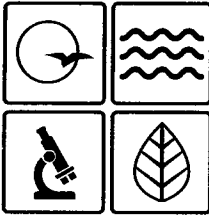
Fifth, EPA Region 7 acknowledges that the phrase "for calendar year 2017 and thereafter" is contained in paragraph (e) of 40 CFR 51.1203. However, taking into consideration all of the factors above, especially point #3, the EPA interprets the phrase "per year for calendar year 2017 and



thereafter " as meaning that the first 12-month rolling total will be from January 1, 2017 - December 31, 2017 and the second 12-month rolling total will be from February 1, 2017 -January 31, 2018 and so forth. The EPA notes that MDNR added the phrase "each calendar year" to the DRR facility-wide SO<sub>2</sub> limit for the University of Missouri- "calendar year 2017 and thereafter" (40 CFR 51.1203) versus "calendar year 2017 and *each calendar year* thereafter" (draft University of Missouri Title V Renewal). The EPA recognizes that MDNR may have added the phrase "*each calendar year*" in an attempt to clarify its understanding of the regulation but, by doing so, MDNR altered the specific language and the intent of the paragraph.

**Comment #1 from EPA:**

Upon consideration of the additional supporting information submitted by EPA and consultation with the permittee, the annual 2,000 ton SO<sub>2</sub> limit has been changed to a limit of 2,000 ton per each "consecutive 12-month period." The permittee is required to maintain records of SO<sub>2</sub> emissions beginning in calendar year 2017 on a rolling 12-month basis.



Missouri Department of dnr.mo.gov

# NATURAL RESOURCES

Eric R. Greitens, Governor

Carol S. Comer, Director

SEP 08 2017

Mr. Gregg Coffin  
Director Energy Management  
University of Missouri Power Plant  
417 South 5th Street  
Columbia, MO 65211

Re: University of Missouri Power Plant, 019-0004  
Permit Number: OP2017-067

Dear Mr. Coffin:

Enclosed with this letter is your Part 70 operating permit. Please review this document carefully. Operation of your installation in accordance with the rules and regulations cited in this document is necessary for continued compliance. It is very important that you read and understand the requirements contained in your permit.

This permit may include requirements with which you may not be familiar. If you would like the department to meet with you to discuss how to understand and satisfy the requirements contained in this permit, an appointment referred to as a Compliance Assistance Visit (CAV) can be set up with you. To request a CAV, please contact your local regional office or fill out an online request. The regional office contact information can be found at <http://dnr.mo.gov/regions/>. The online CAV request can be found at <http://dnr.mo.gov/cav/compliance.htm>.

You may appeal this permit to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.078.16 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you have any questions or need additional information regarding this permit, please contact the Air Pollution Control Program (APCP) at (573) 751-4817, or you may write to the Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Michael J. Stansfield, P.E.  
Operating Permit Unit Chief

MJS:jwj

Enclosures

c: PAMS File: 2013-08-023



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