

## Appendix E: Air Quality Construction Permits

This appendix contains the Air Quality Construction Permits the DNR is including with Iowa’s regional haze SIP for the second planning period (2019-2028). The Louisa Generating Station (LGS) main boiler permit and the Walter Scott Jr. Energy Center – Unit 3 (WSEC-3) permit both include new SO<sub>2</sub> emission limits, new operating conditions, and compliance demonstrations requiring implementation by December 31, 2023. The new requirements for regional haze are found in conditions 1c. and 5.P – 5.R.

The current WSEC-4 permit was not modified for regional haze purposes but is included to incorporate its existing SO<sub>2</sub> and NO<sub>x</sub> emission limits into Iowa’s SIP for the purpose of preventing future visibility impairment. Table E-1 summarizes the three permits included with this plan.

**Table E-1. Summary of the air construction permits included with this SIP revision. Each unit is a coal-fired EGU.**

<b>Company</b>	<b>Facility Name</b>	<b>Facility ID</b>	<b>Unit</b>	<b>DNR Permit Number<sup>1</sup></b>	<b>Permit Issuance Date</b>
MidAmerican Energy Co.	Louisa Generating Station	58-07-001	Main Boiler	05-A-031-P6	July 20, 2023
MidAmerican Energy Co.	Walter Scott Jr. Energy Center	78-01-026	Unit 3	75-A-357-P9	July 20, 2023
MidAmerican Energy Co.	Walter Scott Jr. Energy Center	78-01-026	Unit 4	03-A-425-P4	December 5, 2011

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<sup>1</sup> The DNR’s air construction permits are issued by emission point, and incorporate all state and federal air quality requirements applicable to that emission point and its associated emission unit(s). Existing conditions unrelated to regional haze are outside the scope of this plan.



# Air Quality Construction Permit

**Permit Number:** 05-A-031-P6

**Plant Number:** 58-07-001

**Company:** MidAmerican Energy Co. – Louisa Station

**Contact Person:**

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**Responsible Party:**

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## Permitted Equipment

**Emission Point ID:** EP-1

**Emission Unit(s) and Control Equipment:**

EU ID	Description	Maximum Rated Capacity	Control Equipment Description and ID
EU1	Louisa Boiler	8,000 MMBtu/hr	Dry Electrostatic Precipitator (DESP, CE1), Lime Spray Dryer Flue Gas Desulfurization (FGD, CE1B), Baghouse (CE1C), Mercury (Hg) Sorbent Injection (CE1D), Low NOx Burners (LNB) & Overfire Air (OFA) (CE2)

**Equipment Location:** 8602 172<sup>nd</sup> St.  
Muscatine, IA 52761

Issuance of this permit shall not relieve the owner or operator of the responsibility to comply fully with applicable provisions of the State Implementation Plan (SIP), and any other requirements of local, state, and federal law.

Project Number	Project Description	Stack Testing	Issuance Date
21-348	Establish Regional Haze SO2 Limit	No	07/20/23

Under the Direction of the Director of the  
Department of Natural Resources

## PERMIT CONDITIONS

### 1a. Best Available Control Technology (BACT) Emission Limits

The owner or operator is required to report all emissions as required by law, regardless of whether a specific emission limit has been established in this permit. The following emission limits shall not be exceeded:

Pollutant	Tons/Yr <sup>1</sup>	Additional Limits
Federal Particulate Matter (PM)	NA	0.03 lb/MMBTU <sup>2</sup>
State Particulate Matter (PM)	1,019	0.027 lb/MMBTU <sup>2</sup>
PM <sub>10</sub>	1,019	0.027 lb/MMBTU <sup>2</sup>
Opacity <sup>3</sup>	NA	10% <sup>4</sup>
Sulfur Dioxide (SO <sub>2</sub> ) <sup>3</sup>	NA	0.96 lb/MMBTU <sup>5</sup>
Nitrogen Oxides (NO <sub>x</sub> ) <sup>3</sup>	NA	0.5 lb/MMBTU <sup>5</sup>
Volatile Organic Compounds	135.98	0.0036 lb/MMBTU <sup>2</sup>
Carbon Monoxide (CO) <sup>3</sup>	15,864	0.42 lb/MMBTU <sup>6</sup>

<sup>1</sup> Standard is a 12-month rolling total.

<sup>2</sup> The emission limit is expressed as the average of three (3) runs.

<sup>3</sup> Compliance with the emission standards shall be demonstrated through the use of Continuous Emission Monitoring Systems (CEMS). See Condition 5 and Condition 6 for more information on compliance with the use of CEMS.

<sup>4</sup> Standard is a one (1) hour average.

<sup>5</sup> This standard is a 30-day rolling average not including periods of startup, shutdown, and malfunction (SSM).

<sup>6</sup> Standard is a one (1) calendar day average not including periods of SSM.

### 1b. New Source Performance Standards (NSPS) Emission Limits

The owner or operator is required to report all emissions as required by law, regardless of whether a specific emission limit has been established in this permit. The following emission limits shall not be exceeded:

Pollutant	Emission Standard <sup>1</sup>	Reference/Basis
Federal PM	43 ng/J heat input <sup>2</sup>	567 IAC 23.1(2)"a" <sup>3</sup>
Opacity <sup>4</sup>	20% <sup>5</sup>	567 IAC 23.1(2)"a" <sup>3</sup>
SO <sub>2</sub> <sup>4</sup>	520 ng/J heat input <sup>6</sup>	567 IAC 23.1(2)"a" <sup>3</sup>
NO <sub>x</sub> <sup>4</sup>	300 ng/J heat input <sup>7</sup>	567 IAC 23.1(2)"a" <sup>3</sup>

<sup>1</sup> Standard is expressed as the average of three (3) runs.

<sup>2</sup> 43 ng/J = 0.10 lb/MMBTU. See 40 CFR §60.42(a)(1).

<sup>3</sup> IAC reference to New Source Performance Standards (NSPS) Subpart D (Standards of Performance for Fossil-Fuel-fired Steam Generators for Which Construction Is Commenced After August 17, 1971; 40 CFR §60.40 – 40 CFR §60.46).

<sup>4</sup> Compliance with the emission standards shall be demonstrated through the use of a CEMS. See Condition 12 and Condition 16 for more information on compliance with the use of CEMS.

<sup>5</sup> Opacity shall not exceed 20% (6-minute average), except for one (1) 6-minute period per hour of not more than 27% opacity. See 40 CFR §60.42(a)(2).

<sup>6</sup> 520 ng/J = 1.20 lb/MMBTU. Emission limit per 40 CFR §60.43(a)(2) when the unit is combusting solid fossil fuel or solid fossil fuel and wood residue. Per 40 CFR §60.43 alternative limits are:

- 340 ng/J heat input (0.80 lb/MMBTU) when combusting liquid fossil fuel or liquid fossil fuel and wood residue [40 CFR §60.43(a)(2)].
- Per 40 CFR §60.43(b), when different fossil fuels are combusted simultaneously in any combination, the applicable standard (in ng/J) shall be determined by proration using the following formula:

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

Where:

PS<sub>SO2</sub> = the prorated standard for SO<sub>2</sub> when burning different fuels simultaneously, in nanograms per joule (ng/J) heat input derived from all fossil fuels fired or from all fossil fuels and wood residue fired.

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

z = the percentage of total heat input derived from solid fossil fuel.

### 1b. NSPS Limits (continued)

- Per 40 CFR §60.43(d), as an alternate to meeting the requirements of 40 CFR §60.43(a) and 40 CFR §60.43(b), an owner or operator can petition the Administrator (in writing) to comply with 40 CFR §60.43Da(i)(3) or comply with 40 CFR §60.42b(k)(4) as applicable to the affected source. If the Administrator grants the petition, the source will from then on (unless the unit is modified or reconstructed in the future) have to comply with the requirements in 40 CFR §60.43Da(i)(3) or 40 CFR §60.42b(k)(4) as applicable to the affected source.

Per 40 CFR §60.43(c), compliance shall be based on the total heat input from all fossil fuels burned, including gaseous fuels.

In addition, per 40 CFR §60.45(g)(2), excess emissions are defined as:

- For affected facilities electing not to comply with 40 CFR §60.43(d), any three (3) hour period during which the average emissions [arithmetic average of three (3) contiguous one (1) hour periods] of SO<sub>2</sub> as measured by a CEMS exceed the applicable standard in 40 CFR §60.43; or
- For affected facilities electing to comply with 40 CFR §60.43(d), any thirty (30) operating day period during which the average emissions [arithmetic average of all one (1) hour periods during the thirty (30) operating days] of SO<sub>2</sub> as measured by a CEMS exceed the applicable standard in 40 CFR §60.43. Facilities complying with the thirty (30) day SO<sub>2</sub> standard shall use the most current associated SO<sub>2</sub> compliance and monitoring requirements in 40 CFR §60.48Da and 40 CFR §60.49Da or 40 CFR §60.45b and 40 CFR §60.47b as applicable.

<sup>7</sup> 300 ng/J = 0.70 lb/MMBTU. Emission limit per 40 CFR §60.43(a)(3) when the unit is combusting solid fossil fuel or solid fossil fuel and wood residue (except lignite or a solid fossil fuel containing 25%, by weight, or more of coal refuse). Per 40 CFR §60.44 alternative limits are:

- 86 ng/J heat input (0.20 lb/MMBTU) when combusting gaseous fossil fuel.
- 129 ng/J heat input (0.30 lb/MMBTU) when combusting liquid fossil fuel, liquid fossil fuel and wood residue, or gaseous fossil fuel and wood residue.
- liquid fossil fuel or liquid fossil fuel and wood residue [40 CFR §60.43(a)(2)].
- Per 40 CFR §60.44(b), when different fossil fuels are combusted simultaneously in any combination, the applicable standard (in ng/J) shall be determined by proration using the following formula:

$$PS_{NO_x} = \frac{[w(260) + x(86) + y(130) + z(300)]}{w + x + y + z}$$

Where:

PS<sub>NO<sub>x</sub></sub> = the prorated standard for NO<sub>x</sub> when burning different fuels simultaneously, in nanograms per joule (ng/J) heat input derived from all fossil fuels fired or from all fossil fuels and wood residue fired.

w = the percentage of total heat input derived from lignite

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

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

z = the percentage of total heat input derived from solid fossil fuel.

- Per 40 CFR §60.44(e), as an alternate to meeting the requirements of 40 CFR §60.43(a) and 40 CFR §60.43(b), an owner or operator can petition the Administrator (in writing) to comply with 40 CFR §60.43Da(e)(3). If the Administrator grants the petition, the source will from then on (unless the unit is modified or reconstructed in the future) have to comply with the requirements in 40 CFR §60.43Da(e)(3).

In addition, per 40 CFR §60.45(g)(3), excess emissions are defined as:

- For affected facilities electing not to comply with 40 CFR §60.44(e), any three (3) hour period during which the average emissions [arithmetic average of three (3) contiguous one (1) hour periods] of SO<sub>2</sub> as measured by a CEMS exceed the applicable standard in 40 CFR §60.44; or
- For affected facilities electing to comply with 40 CFR §60.44(e), any thirty (30) operating day period during which the average emissions [arithmetic average of all one (1) hour periods during the thirty (30) operating days] of NO<sub>x</sub> as measured by a CEMS exceed the applicable standard in 40 CFR §60.44. Facilities complying with the thirty (30) day NO<sub>x</sub> standard shall use the most current associated NO<sub>x</sub> compliance and monitoring requirements in 40 CFR §60.48Da and 40 CFR §60.49Da.

### 1c. Regional Haze Limit

Pollutant	lb/hr	tons/yr	Other Limits	Reference/Basis
Sulfur Dioxide (SO <sub>2</sub> )	800 <sup>1,2</sup>	NA	NA	567 IAC 22.9(6)

<sup>1</sup>Limit based on 65.6 percent reduction of SO<sub>2</sub> emissions from the baseline years of 2017 to 2019. Compliance with the limit is based on continuous emissions monitoring as specified in permit condition 6.

<sup>2</sup>Limit based on 30-day rolling average. Limit is applicable at all times including periods of Boiler startup, shutdown, and malfunction.

### 1d. Other Emission Limits

The owner or operator is required to report all emissions as required by law, regardless of whether a specific emission limit has been established in this permit. The following emission limits shall not be exceeded:

Pollutant	lb/hr	Tons/yr <sup>1</sup>	Additional Limits	Reference/Basis
PM <sub>10</sub>	258.7 <sup>2, 3</sup>	NA	NA	NAAQS
SO <sub>2</sub> <sup>4</sup>	3,449.6 <sup>5, 6</sup>	NA	NA	NAAQS
NO <sub>x</sub> <sup>4</sup>	1,724.8 <sup>6</sup>	7,555 <sup>7</sup>	NA	NAAQS
CO <sup>4</sup>	3,622 <sup>3, 6</sup>	NA	NA	NAAQS

<sup>1</sup> Standard is a 12-month rolling total.

<sup>2</sup> The emission limit is expressed as the average of three (3) runs.

<sup>3</sup> Emission rate used in the computer aided dispersion model to demonstrate predicted attainment of the National Ambient Air Quality Standards (NAAQS).

<sup>4</sup> Compliance with the emission standards shall be demonstrated through the use of a CEMS. See Condition 5 and Condition 6 for more information on compliance with the use of CEMS.

<sup>5</sup> Emission limit carried over from EPA Prevention of Significant Deterioration (PSD) permit. This emission limit was also used in order to net Project Number 05-511 out of PSD review. The SO<sub>2</sub> emissions of this unit shall not exceed:

- 153,600 lbs/calendar day and/or
- 6,400 lbs/hr for more than five (5) hours in any calendar day.

<sup>6</sup> This standard is a 30-day rolling average.

<sup>7</sup> Emission rate used to demonstrate a reduction in emissions for Project Number 04-750 (installation of OFA and LNB). This rate was corrected in Project Number 05-511 to reflect the actual size of the boiler.

## 2. Compliance Demonstration(s)

**Compliance Demonstration Table**

Pollutant	Compliance Methodology	Frequency	Test Run Time	Test Method
PM – Federal	None	NA	1 hour	40 CFR 60, Appendix A, Method 5
PM – State	None	NA	1 hour	40 CFR 60, Appendix A, Method 5 40 CFR 51 Appendix M Method 202
PM <sub>10</sub>	None	NA	1 hour	40 CFR 51, Appendix M, 201A with 202
Opacity	Continuous Opacity Monitoring System (COMS) <sup>1</sup>	Continuous	1 hour	40 CFR 60, Appendix A, Method 9
SO <sub>2</sub>	Continuous Emission Monitoring System (CEMS) <sup>1</sup>	Continuous	1 hour	40 CFR 60, Appendix A, Method 6C
NO <sub>x</sub>	Continuous Emission Monitoring System (CEMS) <sup>1</sup>	Continuous	1 hour	40 CFR 60, Appendix A, Method 7E
VOC	None	NA	1 hour	40 CFR 63, Appendix A, Method 320 or 40 CFR 60, Appendix A, Method 18
CO	Continuous Emission Monitoring System (CEMS) <sup>1</sup>	Continuous	1 hour	40 CFR 60, Appendix A, Method 10

<sup>1</sup> See Condition 6 of the permit for the continuous monitoring requirements.

## 2. Compliance Demonstration(s) (Continued)

**If an initial stack test is specified in the “Compliance Demonstration Table,”** the owner or the owner’s authorized agent shall demonstrate compliance with the emission limitations contained in Condition 1 within the applicable time period specified below:

- Within sixty (60) days after achieving the maximum production rate and no later than one hundred eighty (180) days after the initial startup date of the proposed equipment for the addition of new equipment or the physical modification of existing equipment or control equipment.
- Within ninety (90) days of the issuance of this permit if there is no physical modification to any emission units or control equipment.

**If any additional stack testing beyond an initial test (i.e. quarterly, semi-annual, annual, etc.) is required in “Compliance Demonstration Table,”** the owner or the owner’s authorized agent shall demonstrate compliance with the emission limitations contained in Condition 1 as specified in the “Compliance Demonstration Table.” See Conditions 12.A.(4) and 12.B.(5) for notification and reporting requirements.

If stack testing is required, the owner or the owner’s authorized agent shall use the test method and run time listed in the “Compliance Demonstration Table” unless another testing methodology is approved by the Department prior to testing.

Each emissions compliance test must be approved by the Department. Unless otherwise specified by the Department, each test shall consist of three (3) separate runs. The arithmetic mean of three (3) acceptable test runs shall apply for compliance, unless otherwise indicated by the Department.

Per 567 IAC 25.1(7)“a”, at the Department’s request, a pretest meeting shall be held not later than fifteen (15) days before the owner or operator conducts the compliance demonstration. A testing protocol shall be submitted to the Department no later than fifteen (15) days before the owner or operator conducts the compliance demonstration. Representatives from the Department shall attend this meeting, along with the owner and the testing firm, if any. It shall be the responsibility of the owner to coordinate and schedule the pretest meeting. A representative of the Department shall be allowed to witness the test(s). The Department shall reserve the right to impose additional, different, or more detailed testing requirements.

The owner shall be responsible for the installation and maintenance of test ports. The unit(s) being sampled shall be operated in a normal manner at its maximum continuous output as rated by the equipment manufacturer, or the rate specified by the owner as the maximum production rate at which this unit(s) will be operated. In cases where compliance is to be demonstrated at less than the maximum continuous output as rated by the manufacturer, and it is the owner's intent to limit the capacity to that rating, the owner may submit evidence to the Department that this unit(s) has been physically altered so that capacity cannot be exceeded, or the Department may require additional testing, continuous monitoring, reports of operating levels, or any other information deemed necessary by the Department to determine whether this unit(s) is in compliance.

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## 3. Emission Point Characteristics

This emission point shall conform to the specifications listed below:

Parameter	Value
Stack Height (feet from the ground)	610 Feet
Discharge Style	Vertical Unobstructed Discharge
Stack Outlet Dimensions (inches)	360 inch Diameter
Exhaust Temperature (°F)	200 °F
Exhaust Flowrate (scfm)	2,384,500 scfm

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that any of the emission point characteristics above are different than the values stated, the owner or operator shall submit a request either by electronic mail or written correspondence to the Department within thirty (30) days of the discovery to determine if a permit amendment is required, or submit a permit application requesting to amend the permit.

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#### 4. Federal Standards

A. New Source Performance Standards (NSPS):

The following subparts apply to the emission unit(s) in this permit:

EU ID	Subpart	Title	Type	State Reference (567 IAC)	Federal Reference (40 CFR)
EU1	A	General Provisions	NA	23.1(2)	\$60.1 – \$60.19
	D	Fossil-Fuel-fired Steam Generators for Which Construction Is Commenced After August 17, 1971	NA	23.1(2)"a"	\$60.40 –\$60.46

NOTE: The absence of the inclusion of any NSPS requirements as part of this permit does not relieve the owner or operator from any obligation to comply with all applicable NSPS conditions.

B. National Emission Standards for Hazardous Air Pollutants (NESHAP): For information only: This equipment is of the source category affected by the following federal regulation: *National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units* [40 CFR Part 63, Subpart UUUUU].

NOTE: The absence of the inclusion of any NESHAP requirements as part of this permit does not relieve the owner or operator from any obligation to comply with all applicable NESHAP conditions.

C. Acid Rain:

The facility (plant number 58-07-001) is considered an affected source under 40 CFR 72, 73, 75, 76, 77, and 78 definitions as emission units at this source are subject to the acid rain emission reduction requirements or the acid rain emission limitations, as adopted by the Department by reference (See 567 IAC 22.120 – 567 IAC 22.148). This emission unit is subject to the SO<sub>2</sub> allowance allocation, NO<sub>x</sub> emission limitations, and monitoring provisions of the federal acid rain program.

#### 5. Operating Requirements with Associated Monitoring and Recordkeeping

Unless specified by a federal regulation, all records as required by this permit shall be kept on-site for a minimum of two (2) years and shall be available for inspection by the Department. Records shall be legible and maintained in an orderly manner. The operating requirements and associated recordkeeping for this permit shall be:

- A. The owner or operator shall maintain records of SO<sub>2</sub> emissions for each calendar day and shall submit a summary of such emissions to the Department within thirty (30) calendar days of the end of each calendar quarter.
- B. This unit shall be limited to firing bituminous coal, sub-bituminous coal, #2 fuel oil, and natural gas.
  - i. The owner or operator shall keep records of whenever bituminous coal is combusted at the facility.
- C. The sulfur (S) content of any coal fired in the unit shall not exceed 2.0 lb/MMBTU.
  - i. The owner or operator shall maintain records of the sulfur (S) content of all coal or combination of coals fired in the boiler.
- D. MidAmerican Energy shall be responsible for the construction and use of a new stack at the Grain Processing Corporation (GPC), Muscatine, Iowa to handle the exhaust from the boilers prior to commencement of operation of the Louisa Generating Station. Such stack shall be constructed according to the specification in the agreement between MidAmerican Energy and the Grain Processing Corporation, dated July 6, 1979. Detailed plans and specifications, and a construction schedule for this proposed stack shall be submitted to the EPA or its delegate not later than January 1, 1980.

## 5. Operating Requirements with Associated Monitoring and Recordkeeping (continued)

- E. A bag leak detection system must be installed to meet the following criteria:
- (1) At least one detector must be located in each compartment of the baghouse.
  - (2) The bag leak detection system must be installed, operated, calibrated and maintained in a manner consistent with the manufacturer's written specifications and recommendations and in accordance with the guidance provided in "Fabric Filter Bag Leak Detection Guidance", EPA-454/R-98-015, September 1997.
  - (3) The bag leak detection system must be certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 10 milligrams per actual cubic meter or less.
  - (4) The bag leak detection system sensor must provide output of relative or absolute particulate matter loadings.
  - (5) The bag leak detection system must be equipped with a device to continuously record the output signal from the sensors.
  - (6) The bag leak detection system must be equipped with an alarm system that will sound automatically when an increase in relative particulate matter emissions over a preset level is detected. The alarm must be located where it is easily heard by plant operating personnel.
  - (7) The system's instrumentation and alarm may be shared among detectors.
  - (8) The system's alarm shall sound no more than 5% of the operating time during a 6 month period.
- i. The following records must be maintained from the bag leak detection system:
- (1) The date, time and duration of each system alarm.
  - (2) The time corrective action was initiated and completed
  - (3) A brief description of the cause of the alarm and the corrective action
  - (4) A record of the percent of operating time during each 6 month period that the alarm sounds. In calculating the operating time percentage,
    - a. If an inspection of the fabric filter demonstrates that no corrective action is required, no alarm time is counted.
    - b. If corrective action is required, each alarm shall be counted as a minimum of 1 hour.
    - c. If it takes longer than 1 hour to initiate corrective action, the alarm time shall be counted as the actual amount of time taken to initiate corrective action.
- F. Trucks which haul either ash or sludge shall either be covered with a tarp or enclosed.
- G. The waste material collected by the fabric filter and stored in the FGD waste silo system shall be processed through a pug-mill during loadout to increase the material moisture content to a minimum of 20%. Water wagons shall be used to wet the waste material during disposal site grading activities.
- H. The following conditions are required on the haul roads when combusting bituminous coal at the facility (plant # 58-07-001) to meet the BACT emission rates:
- (1) Haul truck loads shall be enclosed or covered.
  - (2) For paved roads:
    - (i) Fugitive emissions of paved haul roads shall be controlled to an effective control efficiency of 80% by either water flushing followed by sweeping or using a street sweeper that is certified to achieve a pick-up efficiency of 80%. The control efficiency of 80% shall be achieved by water flushing followed by sweeping or using a certified sweeper on the paved haul roads once per day. The water spray rate shall be a minimum of 0.23 gallons per square yard.
    - (ii) If water flushing followed by sweeping cannot be accomplished because the ambient air temperature (as measured at the facility during daylight operating hours) will be less than 35 F, or conditions due to weather, in combination with the application of the water, could create hazardous driving conditions, then the water flushing and sweeping shall be postponed and accomplished as soon after the scheduled date as the conditions preventing the application have abated.
    - (iii) Water flushing and sweeping need not occur when a rain gage located at the site indicates that at least 0.2 inches of precipitation (water equivalent) has occurred within the preceding 24-hr time period or the paved road(s) will not be used on a given day.



**5. Operating Requirements with Associated Monitoring and Recordkeeping (continued)**

- (3) For unpaved roads:
- (i) Fugitive emissions from unpaved haul roads shall be controlled by applying a chemical dust suppressant. A control efficiency of 95% shall be maintained on all unpaved haul roads. MidAmerican may elect to use any chemical dust suppressant that is capable of achieving the 95% control efficiency. In the event that the manufacturer or distributor of a chemical dust suppressant recommends different amounts of chemical dust suppressant or MidAmerican chooses to use a different chemical dust suppressant, MidAmerican shall notify DNR of the change in application rates and/or chemical dust suppressant and the manufacturer's/distributor's recommendations.
  - (ii) If the selected chemical dust suppressant cannot be applied because the ambient air temperature (as measured at the facility during daylight operating hours) will be less than 35 F, or conditions due to weather, in combination with the application of the chemical dust suppressant, could create hazardous driving conditions, then the chemical dust suppressant application shall be postponed and accomplished as soon after the scheduled date as the conditions preventing the application have abated.
- I. When bituminous coal is combusted, a log shall be kept showing the following for haul roads:
- (1) Paved roads:
    - a. Records of either the use of a certified street sweeper or the applications shall be maintained and shall include
      - The dates of each application
      - The amount of water applied
      - The areas treated, and
      - The operator's initials.
    - b. If water is not applied when scheduled then the records should so indicate and provide an explanation.
  - (2) Unpaved roads:
    - a. Records of the applications shall be maintained and shall include:
      - The dates of each application
      - The chemical dust suppressant used
      - The application intensity (gal/sq yd)
      - Dilution ratio
      - The operator's initials, and
      - Documentation of road and weather conditions, if necessary.
    - b. If the suppressant is not applied as planned, then the records should so indicate and provide an explanation.
- J. The owner or operator is not required to operate the Electrostatic Precipitator (ESP, CE 1) as long as the owner or operator is able to demonstrate compliance with the emission limits listed in Condition 1 of this permit without the ESP in operation.
- K. The owner or operator is allowed, but not required, to combust coal which has been treated with chemicals to aid in mercury (Hg) emissions control. The following additives have been approved by the Department for use by the owner or operator:
- a. a mineral composite of calcium silicate components,
  - b. other calcium compounds containing iron and aluminum,
  - c. calcium bromide
  - d. calcium chloride
  - e. potassium iodide
- L. Prior to the use of any additional chemicals to aid in mercury (Hg) emissions control, the owner or operator shall supply material data to the Department for review and approval. This data shall include, but is not limited to:
- a. A description of the chemical additive
  - b. Information demonstrating the potential impact on mercury emissions and any other HAPs regulated by an applicable state or federal standard, and
  - c. An evaluation of the impact on all NSR regulated air emissions.
- M. The owner or operator shall record if treated coal is combusted and with what chemicals the coal has been treated.

## 5. Operating Requirements with Associated Monitoring and Recordkeeping (continued)

- N. Per 567 IAC 33.3(18)"f"(1), prior to beginning actual construction of the project (Project Number 13-467) the owner or operator shall document:
- (1) A description of the project (Project Number 13-467),
  - (2) Identification of the emission unit(s) whose emissions of a regulated NSR pollutant could be affected by the project (Project Number 13-467), and
  - (3) A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including the baseline actual emissions (BAE), the projected actual emissions (PAE), the amount of emissions excluded under paragraph "3" of the definition of "*projected actual emissions*" in subrule 33.3(1), an explanation describing why such amount was excluded, and any netting analysis if applicable.
  - (4) Per 567 IAC 33.3(18)"f"(1), the owner or operator shall maintain a record of the information required in Condition 5.K. of this permit for a period of five (5) years.
- O. The owner or operator shall meet all applicable recordkeeping and reporting requirements under NSPS Subparts A and D.

### **Regional Haze Requirements**

- P. The owner or operator shall complete Lime Spray Dryer FGD (CE1B) enhancements to achieve the SO<sub>2</sub> emission limit specified in condition 1c by December 31, 2023.
- i. The owner or operator shall maintain record of the completion date of Lime Spray Dryer FGD (CE1B) enhancements to achieve SO<sub>2</sub> emission limit as specified in condition 1c.
- Q. Within 60 operating days after completion of Lime Spray Dryer FGD (CE1B) enhancements, the owner or operator shall conduct an SO<sub>2</sub> emissions study to determine the minimum additive injection rate to achieve SO<sub>2</sub> reduction of 65.6 percent below the average of 2017-2019 baseline emissions. The minimum additive injection rate shall be determined during varying boiler operating loads. The study shall also include development and identification of an averaging period for the minimum additive injection rate, if applicable.
- i. The owner or operator shall submit the SO<sub>2</sub> study results to the Department for review and approval.
  - ii. The owner or operator shall maintain the SO<sub>2</sub> study results onsite and make the results available for inspection.
- R. The owner or operator shall maintain the Lime Spray Dryer FGD (CE1B) minimum additive injection rate at the rates determined during the SO<sub>2</sub> emissions study at corresponding boiler loads. The minimum additive injection rate shall be maintained at all times while Louisa Boiler is in operation except during periods of boiler start-up.
- i. The owner or operator shall properly operate and maintain equipment to monitor the additive injection rate to the Lime Spray Dryer FGD (CE1B). The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals or per written facility specific operation and maintenance plan.
  - ii. The owner or operator shall continuously collect and record the additive injection rate to Lime Spray Dryer FGD (CE1B). The owner or operator shall calculate and record the additive injection rate based on the averaging period determined during the SO<sub>2</sub> study, if applicable. If the additive injection rate to Lime Spray Dryer FGD (CE1B) falls below the value determined during the SO<sub>2</sub> emissions study, the owner or operator shall investigate the Lime Spray Dryer FGD (CE1B) and make corrections to it. The owner or operator shall maintain a record of all corrective actions taken.
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## 6. Continuous Emission Monitoring Systems (CEMS)

Continuous emission monitoring for the BACT and other emission limits for PM, SO<sub>2</sub> and NO<sub>x</sub> shall be determined by all continuous monitoring and reporting methods which may be specified in 40 CFR Part 60, Subpart Da as of the date of initial source startup (i.e., operation of the boiler for any purpose), with the exception that the control efficiency of the sulfur dioxide removal device need not be demonstrated. Notwithstanding the fact that the Louisa Generating Station is still not subject to 40 CFR Part 60, Subpart Da as no increase in the hourly emission rate of an affected NSPS pollutant has occurred, Subpart Da is being referenced to specify methods for determining compliance with the BACT emission rates which were established under the PSD regulations promulgated pursuant to Section 110 of the Act (42 U.S.C. 7410).

A. The following monitoring systems are required:

- *Opacity:*

The facility (plant number 58-07-001) shall install, calibrate, maintain and operate a continuous monitoring system (CEMS) on EP 1, and record the output of the system, for measuring the opacity of emissions discharged to the atmosphere. If opacity interference due to water droplets exists in the stack (for example, from the use of an FGD system), the opacity is monitored upstream of the interference (at the inlet to the FGD system). If opacity interference is experienced at all locations (both at the inlet and outlet of the sulfur dioxide control system), alternate parameters indicative of the particulate matter control system's performance are monitored (subject to the approval of the Administrator). This system shall be designed to meet the 40 CFR 60, Appendix B, Performance Specification 1 (PS1).

- *SO<sub>2</sub>:*

The owner or operator shall install, calibrate, maintain, and operate a continuous emission monitoring system (CEMS) and record the output of the system, for measuring sulfur dioxide (SO<sub>2</sub>) emissions.

The system shall be designed to meet the 40 CFR 60, Appendix B, Performance Specification 2 (PS2) and Performance Specification 6 (PS6) requirements. The specifications of 40 CFR 60, Appendix F (Quality Assurance/Quality Control) shall apply. Appendix F requirements shall be supplemented with a notice to the Department with the dates of the annual relative accuracy test audit.

- *O<sub>2</sub> or CO<sub>2</sub>:*

The owner or operator shall install, calibrate, maintain, and operate a CEMS and record the output of the system, for measuring the oxygen (O<sub>2</sub>) or carbon dioxide (CO<sub>2</sub>) content of the flue gases at each location where SO<sub>2</sub> emissions are monitored.

- *CO:*

Compliance with the carbon monoxide (CO) emission limits of this permit shall be continuously demonstrated by the owner or operator through the use of a CEMS. Therefore, the facility shall install, calibrate, maintain and operate a CEMS on EP 1 for measuring CO emissions discharged to the atmosphere and record the output of the system. The system shall be designed to meet the 40 CFR 60 Appendix B, Performance Specification 4 (PS4) and Performance Specification 6 (PS6) requirements. The specifications of 40 CFR 60, Appendix F (Quality Assurance/Quality Control) shall apply. Appendix F requirements shall be supplemented with a notice to the Department with the dates of the annual relative accuracy test audit.

## 6. Continuous Emission Monitoring (Continued)

- *Flowmeter:*

The owner or operator shall install, certify, operate, and maintain a continuous flow monitoring system meeting the requirements of 40 CFR 60, Appendix B, Performance Specification 6 and 40 CFR 60, Appendix F, Procedure 1. In addition, the owner or operator shall record the output of the system, for measuring the volumetric flow of exhaust gases discharged to the atmosphere or

Alternatively, data from a continuous flow monitoring system certified according to the requirements of 40 CFR §75.20(c) and 40 CFR 75, Appendix A, and continuing to meet the applicable quality control and quality assurance requirements of 40 CFR §75.21 and 40 CFR 75, Appendix B, may be used.

- B. The CEMS required in Condition 6.A. for SO<sub>2</sub>, and either O<sub>2</sub> or CO<sub>2</sub> shall be operated and the data recorded during all periods of operation including periods of startup, shutdown, malfunction, or emergency conditions, except for CEMS breakdowns, repairs, calibration checks, and zero and span adjustments.
- C. The following data requirements shall apply to all CEMS for non-NSPS emission standards in this permit:
- (1) The CEMS required by this permit shall be operated and data recorded during all periods of operation of the emission unit except for CEM breakdowns and repairs. Data is recorded during calibration checks, and zero and span adjustments.
  - (2) The 1-hour average SO<sub>2</sub> and CO<sub>2</sub> emission rates measured by the CEMS required by this permit shall be used to calculate compliance with the emission standards of this permit. At least 2 data points must be used to calculate each 1-hour average.
  - (3) For each hour of missing emission data (SO<sub>2</sub> or CO<sub>2</sub>), the owner or operator shall substitute data by:
    - (i) If the monitor data availability is equal to or greater than 95.0%, the owner or operator shall calculate substitute data by means of the automated data acquisition and handling system for each hour of each missing data period according to the following procedures:
      - (a) For the missing data period less than or equal to 24 hours, substitute the average of the hourly concentrations recorded by a pollutant concentration monitor for the hour before and the hour after the missing data period.
      - (b) For a missing data period greater than 24 hours, substitute the greater of:
        - The 90<sup>th</sup> percentile hourly concentration recorded by a pollutant concentration monitor during the previous 720 quality-assured monitor operating hours; or
        - The average of the hourly concentrations recorded by a pollutant concentration monitor for the hour before and the hour after the missing data period.
    - (ii) If the monitor data availability is at least 90.0% but less than 95.0%, the owner or operator shall calculate substitute data by means of the automated data acquisition and handling system for each hour of each missing data period according to the following procedures:
      - (a) For a missing data period of less than or equal to 8 hours, substitute the average of the hourly concentrations recorded by a pollutant concentration monitor for the hour before and the hour after the missing data period.
      - (b) For the missing data period of more than 8 hours, substitute the greater of:
        - The 95<sup>th</sup> percentile hourly pollutant concentration recorded by a pollutant concentration monitor during the previous 720 quality-assured monitor operating hours; or
        - The average of the hourly concentrations recorded by a pollutant concentration monitor for the hour before and the hour after the missing data period.
    - (iii) If the monitor data availability is less than 90.0%, the owner or operator shall obtain actual emission data by an alternate testing or monitoring method approved by the Department.
- D. If requested by the Department, the owner/operator shall coordinate the quarterly cylinder gas audits with the Department to afford the Department the opportunity to observe these audits. The relative accuracy test audits shall be coordinated with the Department.

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## 7. Department Review

This permit is issued under the authority of 567 Iowa Administrative Code (IAC) 22.3. The proposed equipment has been evaluated for conformance with Iowa Code Chapter 455B; 567 IAC Chapters 20 – 35; and 40 Code of Federal Regulations (CFR) Parts 51, 52, 60, 61, and 63 and has the potential to comply. This permit is issued based on information submitted by the applicant. Any misinformation, false statements or misrepresentations by the applicant or by the applicant's representative(s) shall cause this permit to be void.

No review has been undertaken on the engineering aspects of the equipment or control equipment other than the potential of that equipment for reducing air contaminant emissions. The Department assumes no liability, directly or indirectly, for any loss due to damage to persons or property caused by, resulting from, or arising out of the design, installation, maintenance or operation of the proposed equipment.

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## 8. Owner and Operator Responsibility

This permit is for the construction and operation of specific emission unit(s), control equipment, and emission point as described in this permit and in the application for this permit. The permit holder, owner, and operator of the facility shall assure that the installation of the equipment listed in this permit conforms to the design in the application (i.e. type, maximum rated capacity, etc.). No person shall construct, install, reconstruct or alter this emission unit(s), control equipment, or emission point without the required amended permit.

Any owner or operator of the specified emission unit(s), control equipment, or emission point, including any person who becomes an owner or operator subsequent to the date on which this permit is issued, is responsible for assuring that the installation, operation, and maintenance of the equipment listed in this permit is in compliance with the provisions of this permit and all other applicable requirements and that adequate operation and maintenance is provided to ensure that no condition of air pollution is created.

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## 9. Transferability

Unless the equipment is portable, this permit is not transferable from one location to another or from one piece of equipment to another. See Condition 12.A.(2) for notification requirements for relocating portable equipment (567 IAC 22.3(3)“F”).

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## 10. Construction

### A. General Requirements:

It is the owner's responsibility to ensure that construction conforms to the final plans and specifications as submitted.

In permit amendments, all provisions of the original permit remain in full force and effect unless they are specifically changed by the permit amendment. If a proposed project is not timely completed, the owner or operator shall seek a permit amendment in order to revert back to the most recent previous version of the permit. The previous, unchanged permit provisions are included in the amendment for your convenience only and are unappealable.

This permit or amendment shall become void if any one of the following conditions occurs:

- (1) The construction or implementation of the proposed project, as it affects the emission point permitted herein, is not initiated within eighteen (18) months after the permit issuance date; or
- (2) The construction or implementation of the proposed project, as it affects the emission point permitted herein, is not completed within thirty-six (36) months after the permit issuance date; or
- (3) The construction or implementation of the proposed project, as it affects the emission point permitted herein, is not completed within a time period specified elsewhere in this permit.

### B. Changes to Plans and Specifications:

The owner or operator shall amend this permit or amendment prior to startup of the equipment if:

- (1) Any changes are made to the final plans and specifications submitted for the proposed project; or
- (2) This permit becomes void.

Changes to the final plans and specification shall include changes to plans and specifications for permitted equipment

and control equipment and the specified operation thereof.

C. Amended Permits:

The owner or operator may continue to act under the provisions of the previous permit for the affected emission unit(s) and emission point, together with any previous amendment to the permit, until one of the following conditions occurs:

- (1) The proposed project authorized by this amendment is completed as it affects the emission unit(s) and emission point permitted herein; or
- (2) This current amendment becomes void.

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## 11. Excess Emissions

Per 567 IAC 24.1(1), excess emissions during a period of startup, shutdown, or cleaning of control equipment are not a violation of the emission standard if it is accomplished expeditiously and in a manner consistent with good practice for minimizing emissions except when another regulation applicable to the unit or process provides otherwise. Cleaning of control equipment, which does not require the shutdown of process equipment, shall be limited to one (1) six-minute period per one (1) hour period.

An incident of excess emissions other than the above is a violation and may be subject to criminal penalties according to Iowa Code 455B.146A. If excess emissions are occurring, either the control equipment causing the excess shall be repaired in an expeditious manner, or the process generating the emissions shall be shut down within a reasonable period of time, as specified in 567 IAC 24.1.

An incident of excess emissions shall be orally reported by telephone, electronic mail or in person to the appropriate field office within eight (8) hours of, or at the start of, the first working day following the onset of the incident [See Permit Condition 12.B.(1)]. A written report of an incident of excess emissions shall be submitted as a follow-up to all required initial reports within seven (7) days of the onset of the upset condition [See Permit Condition 12.B.(2)].

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## 12. Notification, Reporting, and Recordkeeping

A. The owner or operator shall furnish the Department the following written notifications:

- (1) Per 567 IAC 22.3(3)“b”:
  - (a) The date construction, installation, or alteration is initiated postmarked within thirty (30) days following initiation of construction, installation, or alteration.
  - (b) The actual date of startup, postmarked within fifteen (15) days following the start of operation.
- (2) Per 567 IAC 22.3(3)“f,” when portable equipment for which a permit has been issued is to be transferred from one location to another, the Department shall be notified:
  - (a) At least fourteen (14) days before equipment relocation if the equipment will be located in a nonattainment area for the National Ambient Air Quality Standards (NAAQS) or a maintenance area for the NAAQS.
  - (b) At least seven (7) days before equipment relocation.
- (3) Per 567 IAC 22.3(8), a new owner shall notify the Department of the transfer of equipment ownership within thirty (30) days of the occurrence. The notification shall include the following information:
  - The date of ownership change; the name, address, and telephone number of the responsible official, the contact person, and the owner of the equipment both before and after the ownership change; and the construction permit number(s) of the equipment changing ownership.
- (4) Unless specified per a federal regulation, the owner or the owner’s authorized agent shall notify the Department in writing not less than thirty (30) days before a required test or performance evaluation of a continuous emission monitor [567 IAC 25.1(7)]. The notification shall include:
  - The time; the place; the name of the person who will conduct the tests; and other information as required by the Department.

If the owner or operator does not provide timely notice to the Department, the Department shall not consider the test results or performance evaluation results to be a valid demonstration of compliance with the applicable rules or permit conditions. Upon written request, the Department may allow a notification period of less than thirty (30) days.

## 12. Notification, Reporting, and Recordkeeping

- B. The owner or operator shall furnish the Department with the following reports:
- (1) Per 567 IAC 24.1(2), an incident of excess emissions as defined in 567 IAC 20.2 shall be reported within eight (8) hours or at the start of the first working day following the onset of the incident. The report may be made by electronic mail, in person or by telephone.
  - (2) Per 567 IAC 24.1(3), a written report of an incident of excess emissions as defined in 567 IAC 20.2 shall be submitted as a follow-up to all required initial reports to the Department within seven (7) days of the onset of the upset condition.
  - (3) Operation of this emission unit(s) or control equipment outside of those operating parameters specified in Permit Condition 5 in accordance to the schedule set forth in 567 IAC 24.1.
  - (4) Per 567 IAC 25.1(6), the owner or operator of any facility required to install a continuous monitoring system or systems shall provide quarterly reports to the Director, no later than thirty (30) calendar days following the end of the calendar quarter, on forms provided by the Director.
  - (5) Per 567 IAC 25.1(7), a written compliance demonstration report for each compliance testing event, whether successful or not, postmarked no later than six (6) weeks after the completion of the test period unless other regulations provide for other notification requirements. In that case, the more stringent reporting requirement shall be met.
- C. All data, records, reports, documentation, construction plans, and calculations required under this permit shall be available at the plant during normal business hours for inspection and copying by federal, state, or local air pollution regulatory agencies and their authorized representatives, for a minimum of two (2) years from the date of recording unless otherwise required by another applicable law (i.e. NSPS, NESHAP, etc.)
- D. Information regarding this permit should be sent to the attention of the following individuals based on the type of information being submitted: change in ownership (Air Quality Bureau Records Center), permit correspondence (Construction Permit Supervisor), stack testing correspondence (Stack Test Coordinator), and reports and notifications (Compliance Unit Supervisor and DNR Field Office). The addresses are:

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Air Quality Bureau Iowa Department of Natural Resources 502 E. 9 <sup>th</sup> St. Des Moines, IA 50319 Telephone: (515) 725-8200 Fax: (515) 725-9501	DNR Field Office 6 1023 West Madison Washington, IA 52353 Telephone: (319) 653-2135 Fax: (319) 653-2856
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## 13. Appeal Rights

All conditions within an original permit may be appealed, subject to the appeal rights set forth in 561 IAC Chapter 7. Amended conditions within a permit amendment may be appealed, subject to the appeal rights set forth in 561 IAC Chapter 7. In permit amendments, all provisions of the original permit remain in full force and effect unless they are specifically changed by the permit amendment. The previous, unchanged permit provisions are included in the amendment for your convenience only and are unappealable.

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**14. Permit History**

<b>Permit No.</b>	<b>Project No.</b>	<b>Description</b>	<b>Date</b>	<b>Stack Testing</b>
05-A-031-P	04-750	Original State Issued PSD Permit	03/01/05	Yes
05-A-031-P1	05-511	Added FGD & Baghouse	02/14/06	Yes
05-A-031-P2	11-259	Allowed Use of Refined Coal	09/28/11	No
05-A-031-P3	13-467	Added Hg Control	06/03/14	No
05-A-031-P4	19-298	Amend Exhaust Flowrate and Temperature	04/02/20	No
05-A-031-P5	21-442	Modify approved chemical list in Condition 5	4/13/22	No

**END OF PERMIT**





# Air Quality Construction Permit

**Permit Number:** 75-A-357-P9

**Plant Number:** 78-01-026

**Company:** MidAmerican Energy Co - Walter Scott Jr. Energy Center

**Contact Person:**  
Richard Parker  
General Manager

**Responsible Party:**  
Richard Parker  
General Manager

(712) 352-5458  
[Richard.parker@midamerican.com](mailto:Richard.parker@midamerican.com)

(563) 262-2865

7215 Navajo Street  
Council Bluffs, Iowa 51501

7215 Navajo Street  
Council Bluffs, Iowa 51501

## Permitted Equipment

**Emission Point ID:** EP 003

**Emission Unit(s) and Control Equipment:**

EU ID	Description	Maximum Rated Capacity	Control Equipment Description and ID
003	Boiler #3	7700 MMBtu/hr 450 tph coal	Dry Electrostatic Precipitator (CE003), Low NOx Burners (LNB) & Overfire Air (OFA) (CE003A), FGD Spray Scrubber (CE003B), Baghouse (CE003C), Activated Carbon Injection (CE003D)

**Equipment Location:** 7215 Navajo Street  
Council Bluffs, IA 51501

Issuance of this permit shall not relieve the owner or operator of the responsibility to comply fully with applicable provisions of the State Implementation Plan (SIP), and any other requirements of local, state, and federal law.

Project Number	Project Description	Stack Testing	Issuance Date
21-355	Establish Regional Haze SO2 Limit	None	07/20/23

Under the Direction of the Director of the  
Department of Natural Resources

## PERMIT CONDITIONS

### 1a. Best Available Control Technology (BACT) Emission Limits

The owner or operator is required to report all emissions as required by law, regardless of whether a specific emission limit has been established in this permit. The following emission limits shall not be exceeded:

Pollutant	Tons/Yr <sup>1</sup>	Additional Limits
State Particulate Matter (PM)	911	0.027 lb/MMBTU <sup>2</sup>
PM <sub>10</sub>	911	0.027 lb/MMBTU <sup>2</sup>
PM <sub>2.5</sub>	843.2	0.025 lb/MMBTU <sup>2</sup>
Opacity <sup>3</sup>	NA	10% <sup>4</sup>
Carbon Monoxide (CO) <sup>3</sup>	14,165	0.42 lb/MMBTU <sup>5</sup>
Carbon Dioxide (CO <sub>2</sub> ) <sup>3</sup>	NA	2,419 lb/MWh (net) <sup>6, 7</sup>
Carbon Dioxide equivalents (CO <sub>2</sub> e) <sup>8</sup>	7,223,389	NA

<sup>1</sup> Standard is a 12-month rolling total. The standard includes all periods of operation including periods of startup, shutdown, and malfunction (SSM).

<sup>2</sup> Standard is expressed as the average of three (3) stack test runs.

<sup>3</sup> Compliance with the emission standards shall be demonstrated through the use of Continuous Emission Monitoring Systems (CEMS). See Condition 12 and Condition 16 for more information on compliance with the use of CEMS.

<sup>4</sup> Standard is a one (1) hour average.

<sup>5</sup> Standard is a one (1) calendar day average not including periods of SSM.

<sup>6</sup> Standard is a 30-day rolling average not including periods of startup, shutdown, and malfunction (SSM).

<sup>7</sup> MWh = megawatt-hour. MWh (net) shall be determined by subtracting the metered megawatt-hour value for station service from the metered megawatt-hour value for gross generation. Alternatively, net generation may be obtained directly from a power metering device for net generation, if the metering instrument is electrically equivalent to gross generation minus station service.

<sup>8</sup> Compliance shall be determined by multiplying the mass of each greenhouse gas (GHG) as defined in 40 CFR §98.6 by its respective global warming potential (GWP) as defined in 40 CFR Part 98, Table A-1 and summing the results. The version of Table A-1 used shall be the version promulgated as of the October 30, 2009 which listed the following GWPs:

- CO<sub>2</sub> = 1
- CH<sub>4</sub> = 21
- N<sub>2</sub>O = 310

The CO<sub>2</sub> mass emissions shall be obtained from the required CEMS and the mass emissions for methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O) shall be determined by the stack testing required in Condition 12.

### 1b. New Source Performance Standards (NSPS) Limits

Pollutant	Emission Standard <sup>1</sup>	Reference (567 IAC)
Federal PM	43 ng/J heat input <sup>2</sup>	23.1(2)"a" <sup>3</sup>
Opacity <sup>4</sup>	20% <sup>5</sup>	23.1(2)"a" <sup>3</sup>
SO <sub>2</sub> <sup>4</sup>	520 ng/J heat input <sup>6</sup>	23.1(2)"a" <sup>3</sup>
NO <sub>x</sub> <sup>4</sup>	300 ng/J heat input <sup>7</sup>	23.1(2)"a" <sup>3</sup>

<sup>1</sup> Standard is expressed as the average of three (3) runs.

<sup>2</sup> 43 ng/J = 0.10 lb/MMBTU. See 40 CFR §60.42(a)(1).

<sup>3</sup> IAC reference to New Source Performance Standards (NSPS) Subpart D (Standards of Performance for Fossil-Fuel-fired Steam Generators for Which Construction Is Commenced After August 17, 1971; 40 CFR §60.40 – 40 CFR §60.46).

<sup>4</sup> Compliance with the emission standards shall be demonstrated through the use of a CEMS. See Condition 12 and Condition 16 for more information on compliance with the use of CEMS.

<sup>5</sup> Opacity shall not exceed 20% (6-minute average), except for one (1) 6-minute period per hour of not more than 27% opacity. See 40 CFR §60.42(a)(2).

<sup>6</sup> 520 ng/J = 1.20 lb/MMBTU. Emission limit per 40 CFR §60.43(a)(2) when the unit is combusting solid fossil fuel or solid fossil fuel and wood residue. Per 40 CFR §60.43 alternative limits are:

- 340 ng/J heat input (0.80 lb/MMBTU) when combusting liquid fossil fuel or liquid fossil fuel and wood residue [40 CFR §60.43(a)(2)].

**1b. NSPS Limits (continued)**

- Per 40 CFR §60.43(b), when different fossil fuels are combusted simultaneously in any combination, the applicable standard (in ng/J) shall be determined by proration using the following formula:

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

Where:

$PS_{SO_2}$  = the prorated standard for SO<sub>2</sub> when burning different fuels simultaneously, in nanograms per joule (ng/J) heat input derived from all fossil fuels fired or from all fossil fuels and wood residue fired.

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

z = the percentage of total heat input derived from solid fossil fuel.

- Per 40 CFR §60.43(d), as an alternate to meeting the requirements of 40 CFR §60.43(a) and 40 CFR §60.43(b), an owner or operator can petition the Administrator (in writing) to comply with 40 CFR §60.43Da(i)(3) or comply with 40 CFR §60.42b(k)(4) as applicable to the affected source. If the Administrator grants the petition, the source will from then on (unless the unit is modified or reconstructed in the future) have to comply with the requirements in 40 CFR §60.43Da(i)(3) or 40 CFR §60.42b(k)(4) as applicable to the affected source.

Per 40 CFR §60.43(c), compliance shall be based on the total heat input from all fossil fuels burned, including gaseous fuels.

In addition, per 40 CFR §60.45(g)(2), excess emissions are defined as:

- For affected facilities electing not to comply with 40 CFR §60.43(d), any three (3) hour period during which the average emissions [arithmetic average of three (3) contiguous one (1) hour periods] of SO<sub>2</sub> as measured by a CEMS exceed the applicable standard in 40 CFR §60.43; or
- For affected facilities electing to comply with 40 CFR §60.43(d), any thirty (30) operating day period during which the average emissions [arithmetic average of all one (1) hour periods during the thirty (30) operating days] of SO<sub>2</sub> as measured by a CEMS exceed the applicable standard in 40 CFR §60.43. Facilities complying with the thirty (30) day SO<sub>2</sub> standard shall use the most current associated SO<sub>2</sub> compliance and monitoring requirements in 40 CFR §60.48Da and 40 CFR §60.49Da or 40 CFR §60.45b and 40 CFR §60.47b as applicable.

<sup>7</sup> 300 ng/J = 0.70 lb/MMBTU. Emission limit per 40 CFR §60.43(a)(3) when the unit is combusting solid fossil fuel or solid fossil fuel and wood residue (except lignite or a solid fossil fuel containing 25%, by weight, or more of coal refuse). Per 40 CFR §60.44 alternative limits are:

- 86 ng/J heat input (0.20 lb/MMBTU) when combusting gaseous fossil fuel.
- 129 ng/J heat input (0.30 lb/MMBTU) when combusting liquid fossil fuel, liquid fossil fuel and wood residue, or gaseous fossil fuel and wood residue.
- liquid fossil fuel or liquid fossil fuel and wood residue [40 CFR §60.43(a)(2)].
- Per 40 CFR §60.44(b), when different fossil fuels are combusted simultaneously in any combination, the applicable standard (in ng/J) shall be determined by proration using the following formula:

$$PS_{NO_x} = \frac{[w(260) + x(86) + y(130) + z(300)]}{w + x + y + z}$$

Where:

$PS_{NO_x}$  = the prorated standard for NO<sub>x</sub> when burning different fuels simultaneously, in nanograms per joule (ng/J) heat input derived from all fossil fuels fired or from all fossil fuels and wood residue fired.

w = the percentage of total heat input derived from lignite

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

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

z = the percentage of total heat input derived from solid fossil fuel.

- Per 40 CFR §60.44(e), as an alternate to meeting the requirements of 40 CFR §60.43(a) and 40 CFR §60.43(b), an owner or operator can petition the Administrator (in writing) to comply with 40 CFR §60.43Da(e)(3). If the Administrator grants the petition, the source will from then on (unless the unit is modified or reconstructed in the future) have to comply with the requirements in 40 CFR §60.43Da(e)(3).

In addition, per 40 CFR §60.45(g)(3), excess emissions are defined as:

- For affected facilities electing not to comply with 40 CFR §60.44(e), any three (3) hour period during which the average emissions [arithmetic average of three (3) contiguous one (1) hour periods] of SO<sub>2</sub> as measured by a CEMS exceed the applicable standard in 40 CFR §60.44; or
- For affected facilities electing to comply with 40 CFR §60.44(e), any thirty (30) operating day period during which the average emissions [arithmetic average of all one (1) hour periods during the thirty (30) operating days] of NO<sub>x</sub> as measured by a CEMS exceed the applicable standard in 40 CFR §60.44. Facilities complying with the thirty (30) day NO<sub>x</sub> standard shall use the most current associated NO<sub>x</sub> compliance and monitoring requirements in 40 CFR §60.48Da and 40 CFR §60.49Da.

### 1c. Regional Haze Limit

Pollutant	lb/hr	tons/yr	Other Limits	Reference/Basis
Sulfur Dioxide (SO <sub>2</sub> )	770 <sup>1,2</sup>	NA	NA	567 IAC 22.9(6)

<sup>1</sup>Limit based on 72 percent reduction of SO<sub>2</sub> emissions from the baseline years of 2017 to 2019. Compliance with the limit is based on continuous emissions monitoring as specified in permit condition 6.

<sup>2</sup>Limit based on 30-day rolling average. Limit is applicable at all times including periods of Boiler 3 startup, shutdown, and malfunction.

### 1d. Other Emission Limits

Pollutant	lb/hr <sup>1</sup>	tons/yr <sup>2</sup>	Other Limits	Reference/Basis
PM <sub>10</sub>	207.9 <sup>2,3,4</sup>	NA	NA	NAAQS
PM <sub>2.5</sub>	192.5 <sup>2,4</sup>	NA	NA	Insignificant for modeling
Sulfur Dioxide (SO <sub>2</sub> )	NA	12,632.1 <sup>5</sup>	NA	PSD synthetic minor
Nitrogen Oxides (NO <sub>x</sub> )	NA	6,547.5 <sup>5</sup>	NA	PSD synthetic minor
Volatile Organic Compounds (VOC)	30.7 <sup>5</sup>	NA	NA	PSD minor increase
Carbon Monoxide (CO)	12,863 <sup>6</sup>	NA	NA	Insignificant for modeling

<sup>1</sup> Standard is a twelve (12) month rolling total.

<sup>2</sup> Standard is expressed as the average of three (3) stack test runs.

<sup>3</sup> Emission rate used in the computer aided dispersion model in Project Number 06-250 to demonstrate no exceedances of the National Ambient Air Quality Standards (NAAQS).

<sup>4</sup> Emission rate used in Project Number 13-466 to show there was no change in hourly emissions for this unit and that the project (PN 13-466) has impacts below the significant increase threshold.

<sup>5</sup> Emission rate set in order to demonstrate Project Number 13-466 does not have a significant increase in emissions.

<sup>6</sup> Emission limit was set based on dispersion modeling to demonstrate Project Number 13-466 would not have a significant impact on the ambient air.

## 2. Compliance Demonstration(s)

**Compliance Demonstration Table**

<b>Pollutant</b>	<b>Compliance Methodology</b>	<b>Frequency</b>	<b>Test Run Time</b>	<b>Test Method</b>
PM – State	None	NA	1 hour	40 CFR 60, Appendix A, Method 5 40 CFR 51 Appendix M Method 202
PM <sub>10</sub>	None	NA	1 hour	40 CFR 51, Appendix M, 201A with 202
PM <sub>2.5</sub>	None	NA	1 hour	40 CFR 51, Appendix M, 201A with 202
Opacity	COMS <sup>1, 2</sup>	Continuous	1 hour	40 CFR 60, Appendix A, Method 9
SO <sub>2</sub>	CEMS <sup>2, 3</sup>	Continuous	1 hour	40 CFR 60, Appendix A, Method 6C
NO <sub>x</sub>	CEMS <sup>2, 3</sup>	Continuous	1 hour	40 CFR 60, Appendix A, Method 7E
VOC	None	NA	1 hour	40 CFR 63, Appendix A, Method 320 or 40 CFR 60, Appendix A, Method 18
CO	CEMS <sup>2, 3</sup>	Continuous	1 hour	40 CFR 60, Appendix A, Method 10
Pb	None	NA	1 hour	40 CFR 60, Appendix A, Method 12
TRS	None	NA	1 hour	40 CFR 60, Appendix A, Method 16B
CO <sub>2</sub>	CEMS <sup>2, 3</sup>	Continuous	1 hour	40 CFR 60, Appendix A, Method 3
CH <sub>4</sub>	None	NA	1 hour	40 CFR 60, Appendix A, Method 18
N <sub>2</sub> O	None	NA	1 hour	40 CFR 60, Appendix A, Method 320
CO <sub>2</sub> e	Recordkeeping	See Footnote 1	NA	NA
Mercury	None	NA	1 hour	40 CFR 63, Appendix A, Method 320 or 40 CFR 60, Appendix A, Method 18

<sup>1</sup> See footnote 8 in Condition 1.a of the permit for the required recordkeeping requirements.

<sup>2</sup> COMS = Continuous Opacity Monitoring System.

<sup>3</sup> See Condition 6 of the permit for continuous emission monitoring requirements.

<sup>4</sup> CEMS = Continuous Emission Monitoring System.

## 2. Compliance Demonstration(s) (Continued)

**If an initial stack test is specified in the “Compliance Demonstration Table,”** the owner or the owner’s authorized agent shall demonstrate compliance with the emission limitations contained in Condition 1 within the applicable time period specified below:

- Within sixty (60) days after achieving the maximum production rate and no later than one hundred eighty (180) days after the initial startup date of the proposed equipment for the addition of new equipment or the physical modification of existing equipment or control equipment.
- Within ninety (90) days of the issuance of this permit if there is no physical modification to any emission units or control equipment.

**If any additional stack testing beyond an initial test (i.e. quarterly, semi-annual, annual, etc.) is required in “Compliance Demonstration Table,”** the owner or the owner’s authorized agent shall demonstrate compliance with the emission limitations contained in Condition 1 as specified in the “Compliance Demonstration Table.” See Conditions 12.A.(4) and 12.B.(5) for notification and reporting requirements.

If stack testing is required, the owner or the owner’s authorized agent shall use the test method and run time listed in the “Compliance Demonstration Table” unless another testing methodology is approved by the Department prior to testing.

Each emissions compliance test must be approved by the Department. Unless otherwise specified by the Department, each test shall consist of three (3) separate runs. The arithmetic mean of three (3) acceptable test runs shall apply for compliance, unless otherwise indicated by the Department.

Per 567 IAC 25.1(7)“a”, at the Department’s request, a pretest meeting shall be held not later than fifteen (15) days before the owner or operator conducts the compliance demonstration. A testing protocol shall be submitted to the Department no later than fifteen (15) days before the owner or operator conducts the compliance demonstration. Representatives from the Department shall attend this meeting, along with the owner and the testing firm, if any. It shall be the responsibility of the owner to coordinate and schedule the pretest meeting. A representative of the Department shall be allowed to witness the test(s). The Department shall reserve the right to impose additional, different, or more detailed testing requirements.

The owner shall be responsible for the installation and maintenance of test ports. The unit(s) being sampled shall be operated in a normal manner at its maximum continuous output as rated by the equipment manufacturer, or the rate specified by the owner as the maximum production rate at which this unit(s) will be operated. In cases where compliance is to be demonstrated at less than the maximum continuous output as rated by the manufacturer, and it is the owner's intent to limit the capacity to that rating, the owner may submit evidence to the Department that this unit(s) has been physically altered so that capacity cannot be exceeded, or the Department may require additional testing, continuous monitoring, reports of operating levels, or any other information deemed necessary by the Department to determine whether this unit(s) is in compliance.

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## 3. Emission Point Characteristics

This emission point shall conform to the specifications listed below:

Parameter	Value
Stack Height (feet from the ground)	550
Discharge Style	Vertical unobstructed
Stack Outlet Dimensions (inches)	300
Exhaust Temperature (°F)	250
Exhaust Flowrate (scfm)	2,100,000

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that any of the emission point characteristics above are different than the values stated, the owner or operator shall submit a request either by electronic mail or written correspondence to the Department within thirty (30) days of the discovery to determine if a permit amendment is required, or submit a permit application requesting to amend the permit.

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#### 4. Federal Standards

A. New Source Performance Standards (NSPS):

The following subparts apply to the emission unit(s) in this permit:

EU ID	Subpart	Title	Type	State Reference (567 IAC)	Federal Reference (40 CFR)
003	A	General Provisions	NA	23.1(2)	§60.1 – §60.19
	D	Fossil-Fuel-fired Steam Generators for Which Construction is Commenced After August 17, 1971	NA	23.1(2)"a"	§60.40 – §60.46

NOTE: The absence of the inclusion of any NSPS requirements as part of this permit does not relieve the owner or operator from any obligation to comply with all applicable NSPS conditions.

B. National Emission Standards for Hazardous Air Pollutants (NESHAP):

For information only: This emission unit is of the source category affected by the following federal regulation: Coal- and Oil-Fired Electric Utility Steam Generating Units [40 CFR Part 63, Subpart UUUUU].

NOTE: The absence of the inclusion of any NESHAP requirements as part of this permit does not relieve the owner or operator from any obligation to comply with all applicable NESHAP conditions.

C. Acid Rain:

The facility (plant number 78-01-026) is considered an affected source under 40 CFR 72, 73, 75, 76, 77, and 78 definitions as emission units at this source are subject to the acid rain emission reduction requirements or the acid rain emission limitations, as adopted by the Department by reference (See 567 IAC 22.120 – 567 IAC 22.148). This emission unit is subject to the SO<sub>2</sub> allowance allocation, NO<sub>x</sub> emission limitations, and monitoring provisions of the federal acid rain program.

#### 5. Operating Requirements with Associated Monitoring and Recordkeeping

Unless specified by a federal regulation, all records as required by this permit shall be kept on-site for a minimum of two (2) years and shall be available for inspection by the Department. Records shall be legible and maintained in an orderly manner. The operating requirements and associated recordkeeping for this permit shall be:

- A. This unit shall be limited to firing coal, with fuel oil for startup
- B. A bag leak detection system must be installed to meet the following criteria:
  - (1) At least one detector must be located in each compartment of the baghouse.
  - (2) The bag leak detection system must be installed, operated, calibrated and maintained in a manner consistent with the manufacturer’s written specifications and recommendations and in accordance with the guidance provided in “Fabric Filter Bag Leak Detection Guidance”, EPA-454/R-98-015, September 1997.
  - (3) The bag leak detection system must be certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 10 milligrams per actual cubic meter or less.
  - (4) The bag leak detection system sensor must provide output of relative or absolute particulate matter loadings.
  - (5) The bag leak detection system must be equipped with a device to continuously record the output signal from the sensors.
  - (6) The bag leak detection system must be equipped with an alarm system that will sound automatically when an increase in relative particulate matter emissions over a preset level is detected. The alarm must be located where it is easily heard by plant operating personnel.
  - (7) The system’s instrumentation and alarm may be shared among detectors.
  - (8) The system’s alarm shall sound no more than 5% of the operating time during a 6 month period.

## 5. Operating Requirements with Associated Monitoring and Recordkeeping (continued)

- C. The following records must be maintained from the bag leak detection system:
- (1) The date, time and duration of each system alarm.
  - (2) The time corrective action was initiated and completed
  - (3) A brief description of the cause of the alarm and the corrective action
  - (4) A record of the percent of operating time during each 6 month period that the alarm sounds. In calculating the operating time percentage,
    - (i) If an inspection of the fabric filter demonstrates that no corrective action is required, no alarm time is counted.
    - (ii) If corrective action is required, each alarm shall be counted as a minimum of 1 hour.
    - (iii) If it takes longer than 1 hour to initiate corrective action, the alarm time shall be counted as the actual amount of time taken to initiate corrective action.
- D. Trucks which haul either ash or sludge shall either be covered with a tarp or enclosed.
- E. The waste material collected by the fabric filter and stored in the FGD waste silo system shall be processed through a pug-mill during loadout to increase the material moisture content to a minimum of 20%. Water wagons shall be used to wet the waste material during disposal site grading activities. This requirement does not apply to waste material being sold for beneficial use.
- F. The owner or operator is allowed, but not required, to combust coal which has been treated with chemicals to aid in mercury (Hg) emissions control. The following additives have been approved by the Department for use by the owner or operator:
- (1) a mineral composite of calcium silicate components,
  - (2) other calcium compounds containing iron and aluminum,
  - (3) calcium bromide
  - (4) calcium chloride
  - (5) potassium iodide
- G. Prior to the use of any additional chemicals to aid in mercury (Hg) emissions control, the owner or operator shall supply material data to the Department for review and approval. This data shall include, but is not limited to:
- (1) A description of the chemical additive
  - (2) Information demonstrating the potential impact on mercury emissions and any other HAPs regulated by an applicable state or federal standard, and
  - (3) An evaluation of the impact on all NSR regulated air emissions.
- H. The owner or operator shall record if treated coal is combusted and with what chemicals the coal has been treated.
- I. The following conditions are required, at startup of WSEC 4, on the haul roads to meet the BACT emission rates:
- (1) For paved roads:
    - (i) Fugitive emissions of paved haul roads shall be controlled to an effective control efficiency of 80% by either water flushing followed by sweeping or using a street sweeper that is certified to achieve a pick-up efficiency of 80%. The control efficiency of 80% shall be achieved by either using a certified sweeper once per day or by water flushing followed by sweeping of the paved haul roads once per day. The water spray rate shall be a minimum of 0.23 gallons per square yard.
    - (ii) If water flushing followed by sweeping cannot be accomplished because the ambient air temperature (as measured at the facility during daylight operating hours) will be less than 35 F, or conditions due to weather, in combination with the application of the water, could create hazardous driving conditions, then the water flushing and sweeping shall be postponed and accomplished as soon after the scheduled date as the conditions preventing the application have abated.
    - (iii) Water flushing and sweeping need not occur when a rain gage located at the site indicates that at least 0.2 inches of precipitation (water equivalent) has occurred within the preceding 24-hr time period or the paved road(s) will not be used on a given day.
  - (2) For unpaved roads:
    - (i) Fugitive emissions from unpaved haul roads shall be controlled by applying a chemical dust suppressant. A control efficiency of 95% shall be maintained on all unpaved haul roads. The owner or operator may elect to use any chemical dust suppressant that is capable of achieving the 95% control efficiency. In the event that the manufacturer or distributor of a chemical dust suppressant recommends different amounts of chemical dust suppressant or MidAmerican chooses to use a different chemical dust suppressant, MidAmerican shall notify DNR of the change in application rates and/or chemical dust suppressant and the manufacturer's/distributor's recommendations.
    - (ii) If the selected chemical dust suppressant cannot be applied because the ambient air temperature (as



- measured at the facility during daylight operating hours) will be less than 35 F, or conditions due to weather, in combination with the application of the chemical dust suppressant, could create hazardous driving conditions, then the chemical dust suppressant application shall be postponed and accomplished as soon after the scheduled date as the conditions preventing the application have abated.
- J. A log shall be kept showing the following for haul roads, after startup of WSEC 4:
- (1) Paved roads:
    - (i) Records of either the use of a certified sweeper or the applications shall be maintained and shall include
      - The dates of each application or use of certified sweeper
      - The amount of water applied (if applicable),
      - The areas treated or swept by certified sweeper, and
      - The operator's initials.
    - (ii) If water is to be used and is not applied when scheduled then the records should so indicate and provide an explanation.
  - (2) Unpaved roads:
    - (i) Records of the applications shall be maintained and shall include:
      - The dates of each application
      - The chemical dust suppressant used
      - The application intensity (gal/sq yd)
      - Dilution ratio
      - The operator's initials, and
      - Documentation of road and weather conditions, if necessary.
    - (ii) If the suppressant is not applied as planned, then the records should so indicate and provide an explanation.
- K. The owner or operator is not required to operate the Electrostatic Precipitator (ESP, CE 003) as long as the owner or operator is able to demonstrate compliance with the emission limits listed in Condition 1 of this permit without the ESP in operation.
- L. The owner or operator shall not operate Boilers 1 (EP 001) and 2 (EP 002) after the work on Boiler 3 (EP 003) associated with Project Number 13-466 has been completed and Boiler 3 (EP 003) has commenced fuel combustion. Within sixty (60) days of Boiler 3 (EP 003) commencing fuel combustion after the completion of the work associated with Project Number 13-466, the owner or operator shall make Boilers 1 (EP 001) and 2 (EP 002) inoperable.
- M. The owner or operator shall prepare a work practice manual documenting all efficiency practices (i.e. a "*Work Practices Manual*") at the facility, and submit the manual to the Department prior to the completion of construction of Project Number 13-466. This manual shall specifically address control equipment operation, boiler cleanliness practices (such as soot-blowing frequency), document the existing steam turbine design efficiency and combustion control optimizations at the plant, and all other efficiencies at the plant (Plant Number 78-01-025). The *Work Practices Manual* shall be implemented upon the later of the Department's review and approval or the completion of construction of Project Number 13-466. The *Work Practices Manual* shall be revised and submitted to the Department as necessary to document any proposed efficiency changes at the facility. The revised manual shall be implemented upon the Department's approval of the proposed changes.
- N. The owner or operator shall submit excess emission and monitoring system performance reports to the Administrator semiannually for each six-month period in the calendar year, as required in 40 CFR 60.45(g). All semiannual reports shall be postmarked by the 30th day following the end of each six-month period. Each excess emission and MSDP report shall include the information required in 40 CFR 60.7(c).
- O. The owner or operator is required to meet all applicable recordkeeping and reporting requirements under NSPS Subparts A and D.

**Regional Haze Requirements**

- P. The owner or operator shall complete FGD Spray Scrubber (CE003B) enhancements to achieve the SO<sub>2</sub> emission limit specified in condition 1c by December 31, 2023.
- i. The owner or operator shall maintain record of the completion date of FGD Spray Scrubber (CE003B) enhancements to achieve SO<sub>2</sub> emission limit as specified in condition 1c.
- Q. Within 60 operating days after completion of FGD Spray Scrubber (CE003B) enhancements, the owner or operator shall conduct an SO<sub>2</sub> emissions study to determine the minimum additive injection rate to achieve SO<sub>2</sub> reduction of 72 percent below the average of 2017-2019 baseline emissions. The minimum additive injection rate shall be determined during varying boiler operating loads. The study shall also include development and identification of an averaging period for the minimum additive injection rate, if applicable.
- i. The owner or operator shall submit the SO<sub>2</sub> study results to the Department for review and approval.
- ii. The owner or operator shall maintain the SO<sub>2</sub> study results onsite and make the results available for inspection.
- R. The owner or operator shall maintain the FGD Spray Scrubber (CE003B) minimum additive injection rate at the rates determined during the SO<sub>2</sub> emissions study at corresponding boiler loads. The minimum additive injection rate shall be maintained at all times while Boiler 3 is in operation except during periods of boiler start-up.
- i. The owner or operator shall properly operate and maintain equipment to monitor the additive injection rate to the FGD Spray Scrubber (CE003B). The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals or per written facility specific operation and maintenance plan.
- ii. The owner or operator shall continuously collect and record the additive injection rate to FGD Spray Scrubber (CE003B). The owner or operator shall calculate and record the additive injection rate based on the averaging period determined during the SO<sub>2</sub> study, if applicable. If the additive injection rate to FGD Spray Scrubber (CE003B) falls below the value determined during the SO<sub>2</sub> emissions study, the owner or operator shall investigate the FGD Spray Scrubber (CE003B) and make corrections to it. The owner or operator shall maintain a record of all corrective actions taken.
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## 6. Continuous Emission Monitoring Systems (CEMS)

The following continuous emission monitoring requirements apply to this emission point and its associated emission unit(s) and control equipment:

A. The following monitoring systems are required:

- *Opacity:*

In accordance with 40 CFR §60.45(a), the owner or operator shall install, calibrate, maintain, and operate a continuous opacity monitoring system (COMS) and record the output of the system, for measuring the opacity of emissions discharged to the atmosphere except as provided under 40 CFR §60.45(b).

The system shall be designed to meet the 40 CFR 60, Appendix B, Performance Specification 1 (PS1).

Per 40 CFR §60.45(b)(5), the owner or operator may petition the Administrator (in writing) to install a PM CEMS as an alternative to the CEMS for monitoring opacity emissions.

- *SO<sub>2</sub>:*

In accordance with 40 CFR §60.45(a), the owner or operator shall install, calibrate, maintain, and operate a continuous emission monitoring system (CEMS) and record the output of the system, for measuring sulfur dioxide (SO<sub>2</sub>) emissions, except as provided by 40 CFR §60.45(b).

The system shall be designed to meet the 40 CFR 60, Appendix B, Performance Specification 2 (PS2) and Performance Specification 6 (PS6) requirements. The specifications of 40 CFR 60, Appendix F (Quality Assurance/Quality Control) shall apply. Appendix F requirements shall be supplemented with a notice to the Department with the dates of the annual relative accuracy test audit.

This monitor shall also be used to demonstrate compliance with the non-NSPS emission standards in this permit.

- *NO<sub>x</sub>:*

In accordance with 40 CFR §60.45(a), the owner or operator shall install, calibrate, maintain, and operate a continuous emission monitoring system (CEMS) and record the output of the system, for measuring nitrogen oxide (NO<sub>x</sub>) emissions, except as provided by 40 CFR §60.45(b).

The system shall be designed to meet the 40 CFR 60, Appendix B, Performance Specification 2 (PS2) and Performance Specification 6 (PS6) requirements. The specifications of 40 CFR Appendix F (Quality Assurance/Quality Control) shall apply. Appendix F requirements shall be supplemented with a notice to the Department with the dates of the annual relative accuracy test audit.

This monitor shall also be used to demonstrate compliance with the non-NSPS emission standards in this permit.

- *O<sub>2</sub> or CO<sub>2</sub>:*

In accordance with 40 CFR §60.45(a), the owner or operator shall install, calibrate, maintain, and operate a CEMS and record the output of the system, for measuring the oxygen (O<sub>2</sub>) or carbon dioxide (CO<sub>2</sub>) content of the flue gases at each location where SO<sub>2</sub> or NO<sub>x</sub> emissions are monitored.

## 6. Continuous Emission Monitoring (Continued)

- *CO:*

Compliance with the carbon monoxide (CO) emission limits of this permit shall be continuously demonstrated by the owner or operator through the use of a CEMS. Therefore, the owner or operator shall install, calibrate, maintain, and operate a CEMS for measuring CO emissions discharged to the atmosphere and record the output of the system.

The system shall be designed to meet the 40 CFR 60, Appendix B, Performance Specification 4A (PS4A) and Performance Specification 6 (PS6) requirements. The specifications of 40 CFR 60, Appendix F (Quality Assurance/Quality Control) shall apply. Appendix F requirements shall be supplemented with a notice to the Department with the dates of the annual relative accuracy test audit.

- *Wattmeter:*

The owner or operator shall install, calibrate, maintain, and operate a wattmeter; measure gross electrical output in megawatt-hour on a continuous basis; and record the output of the monitor for demonstrating compliance with the output-based standard under Condition 10a. of this permit.

- *Flowmeter:*

The owner or operator shall install, certify, operate, and maintain a continuous flow monitoring system meeting the requirements of 40 CFR 60, Appendix B, Performance Specification 6 and 40 CFR 60, Appendix F, Procedure 1. In addition, the owner or operator shall record the output of the system, for measuring the volumetric flow of exhaust gases discharged to the atmosphere or

Alternatively, data from a continuous flow monitoring system certified according to the requirements of 40 CFR §75.20(c) and 40 CFR 75, Appendix A, and continuing to meet the applicable quality control and quality assurance requirements of 40 CFR §75.21 and 40 CFR 75, Appendix B, may be used.

- B. The CEMS required in Condition 6.A. for SO<sub>2</sub>, NO<sub>x</sub>, and either O<sub>2</sub> or CO<sub>2</sub> shall be operated and the data recorded during all periods of operation including periods of startup, shutdown, malfunction, or emergency conditions, except for CEMS breakdowns, repairs, calibration checks, and zero and span adjustments.
- C. The following data requirements shall apply to all CEMS for non-NSPS emission standards in this permit:
- (1) The CEMS required by this permit shall be operated and data recorded during all periods of operation of the emission unit except for CEM breakdowns and repairs. Data is recorded during calibration checks, and zero and span adjustments.
  - (2) The 1-hour average SO<sub>2</sub>, NO<sub>x</sub>, CO, and CO<sub>2</sub> emission rates measured by the CEMS required by this permit shall be used to calculate compliance with the emission standards of this permit. At least 2 data points must be used to calculate each 1-hour average.
  - (3) For each hour of missing emission data (NO<sub>x</sub>, SO<sub>2</sub>, CO, or CO<sub>2</sub>), the owner or operator shall substitute data by:
    - (i) If the monitor data availability is equal to or greater than 95.0%, the owner or operator shall calculate substitute data by means of the automated data acquisition and handling system for each hour of each missing data period according to the following procedures:
      - (a) For the missing data period less than or equal to 24 hours, substitute the average of the hourly concentrations recorded by a pollutant concentration monitor for the hour before and the hour after the missing data period.
      - (b) For a missing data period greater than 24 hours, substitute the greater of:
        - The 90<sup>th</sup> percentile hourly concentration recorded by a pollutant concentration monitor during the previous 720 quality-assured monitor operating hours; or
        - The average of the hourly concentrations recorded by a pollutant concentration monitor for the hour before and the hour after the missing data period.

## 6. Continuous Emission Monitoring (Continued)

- (ii) If the monitor data availability is at least 90.0% but less than 95.0%, the owner or operator shall calculate substitute data by means of the automated data acquisition and handling system for each hour of each missing data period according to the following procedures:
  - (a) For a missing data period of less than or equal to 8 hours, substitute the average of the hourly concentrations recorded by a pollutant concentration monitor for the hour before and the hour after the missing data period.
  - (b) For the missing data period of more than 8 hours, substitute the greater of:
    - The 95<sup>th</sup> percentile hourly pollutant concentration recorded by a pollutant concentration monitor during the previous 720 quality-assured monitor operating hours; or
    - The average of the hourly concentrations recorded by a pollutant concentration monitor for the hour before and the hour after the missing data period.
- (iii) If the monitor data availability is less than 90.0%, the owner or operator shall obtain actual emission data by an alternate testing or monitoring method approved by the Department.

- D. If requested by the Department, the owner/operator shall coordinate the quarterly cylinder gas audits with the Department to afford the Department the opportunity to observe these audits. The relative accuracy test audits shall be coordinated with the Department.

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## 7. Department Review

This permit is issued under the authority of 567 Iowa Administrative Code (IAC) 22.3. The proposed equipment has been evaluated for conformance with Iowa Code Chapter 455B; 567 IAC Chapters 20 – 35; and 40 Code of Federal Regulations (CFR) Parts 51, 52, 60, 61, and 63 and has the potential to comply. This permit is issued based on information submitted by the applicant. Any misinformation, false statements or misrepresentations by the applicant or by the applicant's representative(s) shall cause this permit to be void.

No review has been undertaken on the engineering aspects of the equipment or control equipment other than the potential of that equipment for reducing air contaminant emissions. The Department assumes no liability, directly or indirectly, for any loss due to damage to persons or property caused by, resulting from, or arising out of the design, installation, maintenance or operation of the proposed equipment.

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## 8. Owner and Operator Responsibility

This permit is for the construction and operation of specific emission unit(s), control equipment, and emission point as described in this permit and in the application for this permit. The permit holder, owner, and operator of the facility shall assure that the installation of the equipment listed in this permit conforms to the design in the application (i.e. type, maximum rated capacity, etc.). No person shall construct, install, reconstruct or alter this emission unit(s), control equipment, or emission point without the required amended permit.

Any owner or operator of the specified emission unit(s), control equipment, or emission point, including any person who becomes an owner or operator subsequent to the date on which this permit is issued, is responsible for assuring that the installation, operation, and maintenance of the equipment listed in this permit is in compliance with the provisions of this permit and all other applicable requirements and that adequate operation and maintenance is provided to ensure that no condition of air pollution is created.

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## 9. Transferability

Unless the equipment is portable, this permit is not transferable from one location to another or from one piece of equipment to another. See Condition 12.A.(2) for notification requirements for relocating portable equipment (567 IAC 22.3(3)“F”).

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## 10. Construction

### A. General Requirements:

It is the owner's responsibility to ensure that construction conforms to the final plans and specifications as submitted.

In permit amendments, all provisions of the original permit remain in full force and effect unless they are specifically changed by the permit amendment. If a proposed project is not timely completed, the owner or operator shall seek a permit amendment in order to revert back to the most recent previous version of the permit. The previous, unchanged permit provisions are included in the amendment for your convenience only and are unappealable.

This permit or amendment shall become void if any one of the following conditions occurs:

- (1) The construction or implementation of the proposed project, as it affects the emission point permitted herein, is not initiated within eighteen (18) months after the permit issuance date; or
- (2) The construction or implementation of the proposed project, as it affects the emission point permitted herein, is not completed within thirty-six (36) months after the permit issuance date; or
- (3) The construction or implementation of the proposed project, as it affects the emission point permitted herein, is not completed within a time period specified elsewhere in this permit.

### B. Changes to Plans and Specifications:

The owner or operator shall amend this permit or amendment prior to startup of the equipment if:

- (1) Any changes are made to the final plans and specifications submitted for the proposed project; or
- (2) This permit becomes void.

Changes to the final plans and specification shall include changes to plans and specifications for permitted equipment and control equipment and the specified operation thereof.

### C. Amended Permits:

The owner or operator may continue to act under the provisions of the previous permit for the affected emission unit(s) and emission point, together with any previous amendment to the permit, until one of the following conditions occurs:

- (1) The proposed project authorized by this amendment is completed as it affects the emission unit(s) and emission point permitted herein; or
- (2) This current amendment becomes void.

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## 11. Excess Emissions

Per 567 IAC 24.1(1), excess emissions during a period of startup, shutdown, or cleaning of control equipment are not a violation of the emission standard if it is accomplished expeditiously and in a manner consistent with good practice for minimizing emissions except when another regulation applicable to the unit or process provides otherwise. Cleaning of control equipment, which does not require the shutdown of process equipment, shall be limited to one (1) six-minute period per one (1) hour period.

An incident of excess emissions other than the above is a violation and may be subject to criminal penalties according to Iowa Code 455B.146A. If excess emissions are occurring, either the control equipment causing the excess shall be repaired in an expeditious manner, or the process generating the emissions shall be shut down within a reasonable period of time, as specified in 567 IAC 24.1.

An incident of excess emissions shall be orally reported by telephone, electronic mail or in person to the appropriate field office within eight (8) hours of, or at the start of, the first working day following the onset of the incident [See Permit Condition 12.B.(1)]. A written report of an incident of excess emissions shall be submitted as a follow-up to all required initial reports within seven (7) days of the onset of the upset condition [See Permit Condition 12.B.(2)].

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## 12. Notification, Reporting, and Recordkeeping

- A. The owner or operator shall furnish the Department the following written notifications:
- (1) Per 567 IAC 22.3(3)“b”:
    - (a) The date construction, installation, or alteration is initiated postmarked within thirty (30) days following initiation of construction, installation, or alteration.
    - (b) The actual date of startup, postmarked within fifteen (15) days following the start of operation.
  - (2) Per 567 IAC 22.3(3)“f,” when portable equipment for which a permit has been issued is to be transferred from one location to another, the Department shall be notified:
    - (a) At least fourteen (14) days before equipment relocation if the equipment will be located in a nonattainment area for the National Ambient Air Quality Standards (NAAQS) or a maintenance area for the NAAQS.
    - (b) At least seven (7) days before equipment relocation.
  - (3) Per 567 IAC 22.3(8), a new owner shall notify the Department of the transfer of equipment ownership within thirty (30) days of the occurrence. The notification shall include the following information:
    - The date of ownership change; the name, address, and telephone number of the responsible official, the contact person, and the owner of the equipment both before and after the ownership change; and the construction permit number(s) of the equipment changing ownership.
  - (4) Unless specified per a federal regulation, the owner or the owner’s authorized agent shall notify the Department in writing not less than thirty (30) days before a required test or performance evaluation of a continuous emission monitor [567 IAC 25.1(7)]. The notification shall include:
    - The time; the place; the name of the person who will conduct the tests; and other information as required by the Department.

If the owner or operator does not provide timely notice to the Department, the Department shall not consider the test results or performance evaluation results to be a valid demonstration of compliance with the applicable rules or permit conditions. Upon written request, the Department may allow a notification period of less than thirty (30) days.
- B. The owner or operator shall furnish the Department with the following reports:
- (1) Per 567 IAC 24.1(2), an incident of excess emissions as defined in 567 IAC 20.2 shall be reported within eight (8) hours or at the start of the first working day following the onset of the incident. The report may be made by electronic mail, in person or by telephone.
  - (2) Per 567 IAC 24.1(3), a written report of an incident of excess emissions as defined in 567 IAC 20.2 shall be submitted as a follow-up to all required initial reports to the Department within seven (7) days of the onset of the upset condition.
  - (3) Operation of this emission unit(s) or control equipment outside of those operating parameters specified in Permit Condition 5 in accordance to the schedule set forth in 567 IAC 24.1.
  - (4) Per 567 IAC 25.1(6), the owner or operator of any facility required to install a continuous monitoring system or systems shall provide quarterly reports to the Director, no later than thirty (30) calendar days following the end of the calendar quarter, on forms provided by the Director.
  - (5) Per 567 IAC 25.1(7), a written compliance demonstration report for each compliance testing event, whether successful or not, postmarked no later than six (6) weeks after the completion of the test period unless other regulations provide for other notification requirements. In that case, the more stringent reporting requirement shall be met.
- C. All data, records, reports, documentation, construction plans, and calculations required under this permit shall be available at the plant during normal business hours for inspection and copying by federal, state, or local air pollution regulatory agencies and their authorized representatives, for a minimum of two (2) years from the date of recording unless otherwise required by another applicable law (i.e. NSPS, NESHAP, etc.)

- D. Information regarding this permit should be sent to the attention of the following individuals based on the type of information being submitted: change in ownership (Air Quality Bureau Records Center), permit correspondence (Construction Permit Supervisor), stack testing correspondence (Stack Test Coordinator), and reports and notifications (Compliance Unit Supervisor and DNR Field Office). The addresses are:

Air Quality Bureau Iowa Department of Natural Resources 502 E. 9 <sup>th</sup> St. Des Moines, IA 50319 Telephone: (515) 725-8200 Fax: (515) 725-9501	DNR Field Office 4 1401 Sunnyside Lane Atlantic, IA 50022 Phone: (712) 243-1934 Fax: (712) 243-6251
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### 13. Appeal Rights

All conditions within an original permit may be appealed, subject to the appeal rights set forth in 561 IAC Chapter 7. Amended conditions within a permit amendment may be appealed, subject to the appeal rights set forth in 561 IAC Chapter 7. In permit amendments, all provisions of the original permit remain in full force and effect unless they are specifically changed by the permit amendment. The previous, unchanged permit provisions are included in the amendment for your convenience only and are unappealable.

### 14. Permit History

Permit No.	Project No.	Description	Date	Stack Testing
75-A-357	75-077	Original permit	12/17/75	No
75-A-357-S1		Converted ESP to "cold side" operation	3/3/93	No
75-A-357-S2		Corrected typos and averaging time error	5/9/95	No
75-A-357-S3	97-182	Corrected emission limit	5/7/97	No
75-A-357-P4	06-250	Original PSD permit with capacity increase and addition of FGD, LNB and baghouse	9/8/06	Yes
75-A-357-P5	08-151	Corrected operating limit	10/28/08	Yes
75-A-357-P6	11-349	Allowed combustion of treated coal	12/5/11	No
75-A-357-P7	13-466	Added Hg control and boiler projects	9/26/14	Yes
75-A-357-P8	22-002	Modify approved chemical list in Condition 5, modify temp and airflow	4/13/2022	No

**END OF PERMIT**



# Iowa Department of Natural Resources Air Quality Construction Permit

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## Permit Holder

**Firm:** MidAmerican Energy Company – Walter Scott, Jr. Energy Center

**Contact:**

Mark Podany  
Manager, Environmental & Regulatory Compliance

(712) 366-5363

7215 Navajo Street  
Council Bluffs, IA 51501

**Responsible Party:**

Matthew L. Finnegan  
General Manager

7215 Navajo Street  
Council Bluffs, IA 51501

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## Permitted Equipment

**Emission Unit(s):** WSEC 4 Boiler (EU 141; 7,675 MMBTU/hr) and Fugitive Emissions

**Control Equipment:**

Boiler controls:

Baghouse (CE 141A) for particulates, metals, and Hg; Low NO<sub>x</sub> Burners (CE 141D), Overfire Air, and Selective Catalytic Reduction (SCR, CE 141B) for NO<sub>x</sub>; Lime Spray Dryer Flue Gas Desulfurization (FGD, CE 141C) for SO<sub>2</sub>, acid gases, and Hg; Activated Carbon Injection (ACI, CE 141E) for Hg; and Aqueous calcium bromide (optional) & aqueous calcium chloride (optional) for Hg

Fugitive Emissions: See Condition 14

**Emission Point:** 141

**Equipment Location:** 7215 Navajo Street  
Council Bluffs, IA 51501

**Plant Number:** 78-01-026

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Permit No.	Proj. No.	Description	Date	Testing
03-A-425-P	02-528	Original PSD permit.	June 17, 2003	Yes
03-A-425-P1	06-250	Modified PM <sub>10</sub> allowable for NAAQS.	September 8, 2006	Yes
03-A-425-P2	06-541	Removed 112(g) limits.	May 24, 2007	Yes
03-A-425-P3	08-516	Added 112(g) limits.	October 27, 2010	Yes
03-A-425-P4	11-349	Allow for combustion of treated coal	December 5, 2011	No

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Under the Direction of the Director of  
the Department of Natural Resources  
CPFP|7801026|12052011|11349|03A425P4

## PERMIT CONDITIONS

The permit holder, owner and operator of the facility shall assure that the installation, operation, and maintenance of this equipment is in compliance with all of the conditions of this permit and all other applicable requirements. This permit and its provisions are subject to the appeal rights set forth in Iowa Administrative Code (IAC), rule 561—7.5.

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### 1. Departmental Review

This permit is issued based on information submitted by the applicant. Any misinformation, false statements or misrepresentations by the applicant shall cause this permit to be void. In addition, the applicant may be subject to criminal penalties according to Iowa Code Section 455B.146A.

This permit is issued under the authority of 567 Iowa Administrative Code (IAC) 22.3. The proposed equipment has been evaluated for conformance with Iowa Code Chapter 455B; 567 IAC Chapters 20 – 34; and 40 CFR Parts 51, 52, 60, 61, and 63 and has the potential to comply.

No review has been undertaken on the engineering aspects of the equipment or control equipment other than the potential of that equipment for reducing air contaminant emissions. The DNR assumes no liability, directly or indirectly, for any loss due to damage to persons or property caused by, resulting from, or arising out of the design, installation, maintenance or operation of the proposed equipment.

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### 2. Transferability

As limited by 567 IAC 22.3(3)"F", this permit is not transferable from one location to another or from one piece of equipment to another, unless the equipment is portable. When portable equipment for which a permit has been issued is to be transferred from one location to another, the DNR shall be notified in writing at least thirty (30) days prior to transferring to the new location (See Permit Condition 8.A.6). The owner will be notified at least ten (10) days prior to the scheduled relocation if the relocation will cause a violation of the National Ambient Air Quality Standards (NAAQS). In such case, a supplements permit shall be required prior to the initiation of construction of additional control equipment or equipments modifications needed to meet the standards.

The permit is for the construction and operation of specific emission unit(s), control equipment, and emission point as described in this permit and in the application for this permit. Any owner or operator of the specified emission unit(s), control equipment, or emission point, including any person who becomes an owner or operator subsequent to the date on which this permit is issued, is responsible for compliance with the provisions of this permit. No person shall construct, install, reconstruct or alter this emissions unit, control equipment or emission point without the required revisions to this permit.

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### 3. Construction

It is the owner's responsibility to ensure that construction conforms to the final plans and specifications as submitted, and that adequate operation and maintenance is provided to ensure that no condition of air pollution is created.

This permit shall become void if any one of the following conditions occur:

- (1) the construction or modification of the proposed project, as it affects the emission point(s) permitted herein, is not initiated within eighteen (18) months after the permit issuance date; or
- (2) the construction or modification of the proposed project, as it affects the emission point(s) permitted herein, is not completed within thirty-six (36) months after the permit issuance date; or
- (3) the construction or modification of the proposed project, as it affects the emission point(s) permitted herein, is not completed within a time period specified elsewhere in this permit.

### **3. Construction (Continued)**

#### **3.a. Original Permits**

The owner or operator shall obtain a new permit if any changes are made to the final plans and specifications submitted for the proposed project.

#### **3.b. Modified or Supplemental Permits**

This permit supersedes any and all previous permits issued for the emission point(s) or emission unit(s) permitted herein.

However, the permittee may continue to act under the provisions of the previous permit for the emission point(s) or emission unit(s) until one of the following conditions occurs:

- (1) The proposed project authorized by this permit is completed as it affects the emission point(s) permitted herein; or
- (2) The permit becomes void.

The owner or operator shall obtain a new permit if:

- (1) Any changes are made to the final plans and specifications submitted for the proposed project; or
- (2) This permit becomes void.

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### **4. Credible Evidence**

As stated in 567 IAC 21.5 and also in 40 CFR Part 60.11(g), where applicable, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any provisions specified in this permit or any provisions of 567 IAC Chapters 20 through 34.

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### **5. Owner Responsibility**

Issuance of this permit shall not relieve the owner or operator of the responsibility to comply fully with applicable provisions of the State Implementation Plan (SIP), and any other requirements of local, state, and federal law.

The owner or operator of any emission unit or control equipment shall maintain and operate the equipment and control equipment at all times in a manner consistent with good practice for minimizing emissions, as required by paragraph 567 IAC 24.2(1) "*Maintenance and Repair*".

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### **6. Excess Emissions**

Excess emissions during a period of startup, shutdown, or cleaning of control equipment are not a violation of the emission standard if it is accomplished expeditiously and in a manner consistent with good practice for minimizing emissions except when another regulation applicable to the unit or process provides otherwise. Cleaning of control equipment, which does not require the shutdown of process equipment, shall be limited to one six-minute period per one-hour period. An incident of excess emissions other than the above is a violation and may be subject to criminal penalties according to Iowa Code 455B.146A. If excess emissions are occurring, either the control equipment causing the excess shall be repaired in an expeditious manner, or the process generating the emissions shall be shutdown within a reasonable period of time, as specified in 567 IAC 24.1.

An incident of excess emissions shall be orally reported to the appropriate DNR field office within eight (8) hours of, or at the start of, the first working day following the onset of the incident (See section 8.B.1). A written report of an incident of excess emissions shall be submitted as a follow-up to all required oral reports within seven (7) days of the onset of the upset condition.

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## 7. Disposal of Contaminants

The disposal of materials collected by the control equipment shall meet all applicable rules.

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## 8. Notification, Reporting, and Recordkeeping

- A. The owner shall furnish the DNR the following written notifications:
1. The date construction, installation, or alteration is initiated postmarked within thirty (30) days following initiation of construction, installation, or alteration;
  2. The actual date of startup, postmarked within fifteen (15) days following the start of operation;
  3. The date of each compliance test required by Permit Condition 12, at least thirty (30) days before the anticipated compliance test date;
  4. The date of each pretest meeting, at least fifteen (15) days before the proposed meeting date. The owner shall request a proposed test plan protocol questionnaire at least sixty (60) days prior to each compliance test date. The completed questionnaire shall be received by the DNR at least fifteen (15) days before the pretest meeting date;
  5. Transfer of equipment ownership, within 30 days of the occurrence;
  6. Portable equipment relocation, at least thirty (30) days before equipment relocation.
- B. The owner shall furnish the DNR with the following reports:
1. Oral excess emissions reports, in accordance with 567 IAC 24.1;
  2. A written compliance demonstration report for each compliance testing event, whether successful or not, postmarked not later than six (6) weeks after the completion of the test period unless other regulations provide for other notification requirements. In that case, the more stringent reporting requirement shall be met;
  3. Operation of this emission unit(s) or control equipment outside of those limits specified in Permit Conditions 10 and 14 and according to the schedule set forth in 567 IAC 24.1.
- C. The owner shall send correspondence regarding this permit to the following address:
- Construction Permit Supervisor  
Air Quality Bureau  
Iowa Department of Natural Resources  
7900 Hickman Road, Suite 1  
Windsor Heights, IA 50324  
Telephone: (515) 281-8189  
Fax: (515) 242-5094
- D. The owner shall send correspondence concerning stack testing to:
- Stack Testing Coordinator  
Air Quality Bureau  
Iowa Department of Natural Resources  
7900 Hickman Road, Suite 1  
Windsor Heights, IA 50324  
Telephone: (515) 242-6001  
FAX: (515) 242-5127
- E. The owner shall send reports and notifications to:

Compliance Unit Supervisor Air Quality Bureau Iowa Department of Natural Resources 7900 Hickman Road, Suite 1 Windsor Heights, IA 50324 Telephone: (515) 281-8448 Fax: (515) 242-5127	DNR Field Office 4 1401 Sunnyside Lane Atlantic, IA 50022 Telephone: (712) 243-1934 Fax: (712) 243-6251
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**8. Notification, Reporting, and Recordkeeping (Continued)**

- F. All data, records, reports, documentation, construction plans, and calculations required under this permit shall be available at the plant during normal business hours for inspection and copying by federal, state, or local air pollution regulatory agencies and their authorized representatives, for a minimum of two (2) years from the date of recording.

**9. Permit Violations**

Knowingly committing a violation of this permit may carry a criminal penalty of up to \$10,000 per day fine and 2 years in jail according to Iowa Code Section 455B.146A.

**10a. BACT Emission Limits**

Pollutant	Tons/Yr <sup>1</sup>	Additional Limits
State Particulate Matter (PM)	NA	0.027 lb/MMBTU <sup>2</sup>
PM <sub>10</sub>	NA	0.025 lb/MMBTU <sup>2</sup>
Opacity <sup>3</sup>	NA	5% <sup>4</sup>
Sulfur Dioxide (SO <sub>2</sub> ) <sup>3</sup>	3,362	0.1 lb/MMBTU <sup>5</sup>
Nitrogen Oxides (NO <sub>x</sub> ) <sup>3</sup>	2,353	0.07 lb/MMBTU <sup>5</sup>
Volatile Organic Compounds	121	0.0036 lb/MMBTU <sup>2</sup>
Carbon Monoxide (CO) <sup>3</sup>	5,177	0.154 lb/MMBTU <sup>6</sup>
Lead (Pb)	NA	0.000026 lb/MMBTU
Flourides (F)	NA	0.0009 lb/MMBTU
Total Reduced Sulfur (TRS)	NA	0.001 lb/MMBTU
Sulfuric Acid Mist (H <sub>2</sub> SO <sub>4</sub> )	NA	0.00421 lb/MMBTU

<sup>1</sup> Standard is a 12-month rolling total.

<sup>2</sup> Standard is expressed as the average of three (3) stack test runs.

<sup>3</sup> Compliance with the emission standards shall be demonstrated through the use of Continuous Emission Monitoring Systems (CEMS). See Condition 12 and Condition 16 for more information on compliance with the use of CEMS.

<sup>4</sup> Standard is a three (3) hour average.

<sup>5</sup> This standard is a 30-day rolling average not including periods of startup, shutdown, and malfunction.

<sup>6</sup> Standard is a one (1) calendar day average.

**10b. 112(g) [Case-by-Case Maximum Achievable Control Technology (MACT)] Emission Limits**

Pollutant	Lb/MMBTU (unless otherwise noted)
Mercury	0.013 lbs/hr <sup>1</sup>
Hydrogen Chloride (HCl)	0.0029 <sup>2</sup>
Total Selected Metals (TSM) <sup>3</sup>	0.000104 <sup>2</sup>
Federal PM <sup>4</sup>	0.018 <sup>2</sup>
Acetaldehyde <sup>5</sup>	0.0000058 <sup>2</sup>
Benzene <sup>5</sup>	0.0000296 <sup>2</sup>
Isophorone <sup>5</sup>	0.00000745 <sup>2</sup>
Toluene <sup>5</sup>	0.000372 <sup>2</sup>

<sup>1</sup> Prior to CEMS certification, the standard is expressed as the average of three (3) runs. Following the CEMS certification, the standard is expressed as a thirty (30) day rolling average. This limit is for total mercury emissions. Total mercury includes particulate bound mercury and both forms of vapor phase mercury (elemental and oxidized).

<sup>2</sup> Standard is expressed as the average of three (3) stack test runs.

<sup>3</sup> Total Selected Metals (TSM) means the combination of the following metallic HAP: arsenic, beryllium, cadmium, chromium, lead, manganese, nickel, and selenium.

<sup>4</sup> The federal particulate matter standard listed is a surrogate to show continual compliance with the total selected metals standard.

<sup>5</sup> The 112(g) emission limits will be reevaluated after actual test data has been gathered in order to determine if a new emission limit needs to be established whether that be higher or lower than the current emission limit. See permit Conditions 12 and 14.N. on testing requirements and the procedure for establishing the future limits.

**10c. NSPS Limits**

Pollutant	Emission Standard <sup>1</sup>	Reference (567 IAC)
Federal PM	13 ng/J heat input <sup>2</sup>	23.1(2)"z" <sup>3</sup>
Opacity <sup>4</sup>	20% <sup>5</sup>	23.1(2)"z" <sup>3</sup>
SO <sub>2</sub> <sup>4</sup>	520 ng/J heat input <sup>6</sup>	23.1(2)"z" <sup>3</sup>
NO <sub>x</sub> <sup>4</sup>	200 ng/J gross energy output <sup>7</sup>	23.1(2)"z" <sup>3</sup>

<sup>1</sup> Standard is expressed as the average of three (3) runs.

<sup>2</sup> 13 ng/J = 0.03 lb/MMBTU. See 40 CFR §60.42Da(a).

<sup>3</sup> IAC reference to New Source Performance Standards (NSPS) Subpart Da (Standards of Performance for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978; 40 CFR §60.40Da – 40 CFR §60.52Da).

<sup>4</sup> Compliance with the emission standards shall be demonstrated through the use of a CEMS. See Condition 12 and Condition 16 for more information on compliance with the use of CEMS.

<sup>5</sup> Opacity shall not exceed 20% (6-minute average), except for one (1) 6-minute period per hour of not more than 27% opacity. See 40 CFR §60.42Da(b).

<sup>6</sup> 520 ng/J = 1.20 lb/MMBTU. Compliance with this standard is determined on a 30-day rolling average basis. See permit Condition 14.D. See 40 CFR §60.43Da(a).

<sup>7</sup> 200 ng/J = 1.6 lb/megawatt-hour (gross). Compliance with this standard is determined on a 30-day rolling average basis. See 40 CFR §60.44Da(d)(1).

**10d. Other Emission Limits**

Pollutant	lb/hr	Reference (567 IAC)
PM <sub>10</sub>	191.9 <sup>1,2</sup>	NAAQS
SO <sub>2</sub> <sup>3</sup>	1,050.0 <sup>1,4</sup>	NAAQS
NO <sub>x</sub> <sup>3</sup>	537.3 <sup>5,6</sup>	NAAQS
CO <sup>3</sup>	1,966.0 <sup>5,7</sup>	NAAQS
Pb	0.20 <sup>2,5</sup>	NAAQS

<sup>1</sup> Emission rate used in the computer aided dispersion model to demonstrate no exceedances of the National Ambient Air Quality Standards (NAAQS) or of the increment.

<sup>2</sup> Standard is expressed as the average of three (3) runs

<sup>3</sup> Compliance with the emission standards shall be demonstrated through the use of a CEMS. See Condition 12 and Condition 16 for more information on compliance with the use of CEMS.

<sup>4</sup> Standard is expressed as a three (3) hour rolling average.

<sup>5</sup> Emission rate used in the computer aided dispersion model to demonstrate no exceedances of the NAAQS.

<sup>6</sup> Standard is expressed as a calendar month average.

<sup>7</sup> This standard is expressed as a one (1) hour standard.

**11. Emission Point Characteristics**

This emission point shall conform to the specifications listed below:

Parameter	Value
Stack Height, (ft, from the ground)	551
Discharge Style	Unobstructed vertical
Stack Opening, (inches, dia.)	296
Exhaust Temperature (°F)	165
Exhaust Flowrate (scfm)	2,352,100

The temperature and flow rate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that any of the emission point design characteristics are different than the values stated above, the owner/operator must notify the Department and obtain a permit amendment, if required.

## 12. Compliance Demonstration(s) and Performance Testing

Pollutant	Initial	Subsequent	Methodology	Frequency
PM (federal)	Yes <sup>1</sup>	No	Stack test	One time
PM (state)	Yes	No	Stack test	One-time
PM <sub>10</sub>	Yes	No	Stack test	One-time
Opacity	Yes <sup>1</sup>	Yes <sup>2</sup>	COMS <sup>3</sup>	Continuous
SO <sub>2</sub>	Yes <sup>1</sup>	Yes <sup>2</sup>	CEMS	Continuous
NO <sub>x</sub>	Yes <sup>1</sup>	Yes <sup>2</sup>	CEMS	Continuous
VOC	Yes	No	Stack test	One-time
CO	Yes	Yes <sup>2,4</sup>	CEMS <sup>5</sup>	Continuous
Pb	Yes	No	Stack test	One-time
F	Yes	No	Stack test	One-time
TRS	Yes	No	Stack test	One-time
H <sub>2</sub> SO <sub>4</sub>	Yes	No	Stack test	One-time
Hg	Yes	Yes <sup>6</sup>	CEMS <sup>7</sup>	Continuous
HCl	Yes <sup>8</sup>	No	Stack test	One-time
TSM	Yes	No	Stack test	One-time
Acetaldehyde	Yes	Yes <sup>4</sup>	Stack test	Quarterly
Benzene	Yes	Yes <sup>4</sup>	Stack test	Quarterly
Isophorone	Yes	Yes <sup>4</sup>	Stack test	Quarterly
Toluene	Yes	Yes <sup>4</sup>	Stack test	Quarterly
Silt loading	Yes	Yes <sup>9</sup>	Performance Test	Monthly <sup>10</sup>

<sup>1</sup> See NSPS Subpart Da (40 CFR §60.40Da – 40 CFR §60.52Da) for initial performance testing requirements.

<sup>2</sup> Compliance shall be measured continuously through the use of Continuous Emission Monitoring Systems (CEMS).

<sup>3</sup> Per 40 CFR §60.48Da(p), the owner or operator can meet the compliance provisions by installing, certifying, and operating a CEMS measuring PM emissions discharged to the atmosphere and record the output of the system as specified in 40 CFR §60.48Da(p)(1) – 40 CFR §60.48Da(p)(8). The owner or operator is allowed to install a PM CEMS in lieu of a COMS for the NSPS, but the owner or operator is still required to install the COMS for measuring opacity to determine compliance with the BACT limit listed in Condition 10a.

<sup>4</sup> Testing shall be conducted once per quarter for the first year after the issuance date of the permit 03-A-425-P3. The tests shall be conducted with a minimum of forty-five (45) days between tests. The owner or operator shall operate and maintain a certified CO CEMS prior to the first test and during each subsequent test and shall maintain records to document having conducted the required quality assurance tests to demonstrate the continued certification and accuracy of the CO CEMS during the tests.

<sup>5</sup> If demonstrated, the CO CEMS data may also be used as a surrogate to demonstrate continual compliance with the organic HAP (acetaldehyde, benzene, Isophorone, and toluene) emission standards listed in Condition 10b. See Condition 14.N. for the requirements concerning CO and organic HAP emissions.

<sup>6</sup> Compliance shall be measured continuously through a combination of the use of Hg CEMS and stack test results. The CEMS shall be used to measure vapor phase mercury emissions continuously. Particulate bound mercury emissions shall be calculated through the use of the upper bound 95% confidence level of the particulate bound mercury fraction from the test results from all stack tests conducted on the unit. All runs shall be used unless otherwise approved by the Department. The formula for the upper bound 95% confidence level is:

$$95\% = \text{avg} + t \frac{S}{\sqrt{n}}$$

where: avg = average of the test runs

S = standard deviation of the test runs

t = percentage point of the *t* distribution with n-1 degrees of freedom

n = number of test runs

Total mercury shall then be calculated by adding the result of the upper bound 95% confidence level to the result of the mercury CEMS data.

## 12. Compliance Demonstration(s) and Performance Testing (Continued)

<sup>7</sup> Until such time that the owner or operator can certify its mercury CEMS per the EPA approved certification process, the owner or operator shall:

- Conduct Hg testing once per quarter for total mercury. The tests shall be conducted with a minimum of forty-five (45) days between tests and
- Conduct representative coal sampling of the fuel being fired during the test. The coal samples shall meet the following conditions:
  - i. The sample shall be representative of the fuel fired on that day during the test.
  - ii. Each composite sample shall meet the sampling requirements for special purpose sampling of ASTM D2234-76, any subsequent amendment to the ASTM procedure, or any future ASTM amendment approved by the Department.
  - iii. The composite sample shall be collected as close to an “as-fired” condition as practicable.
  - iv. The proposed location, sampling, and analytical collection methodology shall be submitted to and approved by the Department as part of the testing protocol.

<sup>8</sup> If the aqueous calcium chloride solution for additional Hg control is used, an additional compliance test shall be conducted within ninety (90) days of the initial use of the aqueous calcium chloride solution. The test shall be done with the maximum amount of aqueous calcium chloride solution intended to be used.

<sup>9</sup> Performance testing is required to be completed to demonstrate compliance with a silt content of 2.8 g/m<sup>2</sup>.

<sup>10</sup> Performance testing on the haul road surface silt loading shall be completed once per month for the first year of operation. For each performance test, silt loading sampling shall be done for at least 3 different locations and immediately prior to the next cleaning cycle. After the first year of operation, the data shall be analyzed to determine whether or not further testing is required.

### NOTES:

1. The initial compliance testing for all pollutants except for acetaldehyde, benzene, isophorone, and toluene was completed from May 8, 2007 – May 12, 2007. The testing requirements for acetaldehyde, benzene, isophorone, and toluene are new requirements.
2. The one (1) year of silt load testing was completed and the Department waived the requirement for the monthly silt load testing in a May 27, 2008 letter from Dennis Thielen of the Department to Donald Mohning of MidAmerican Energy.

**If an initial compliance demonstration specified above is testing**, the owner shall verify compliance with the emission limitations contained in Permit Condition 10 within sixty (60) days after achieving maximum production rate and no later than one hundred eighty (180) days after the initial startup date of the proposed equipment.

**If subsequent testing is specified above**, the owner shall verify compliance with the emission limitations contained in Permit Condition 10 according to the frequency noted above.

If testing is required, the owner shall use the test method and run time listed in the table below unless another testing methodology is approved by the Department prior to testing.

Pollutant	Test Run Time	Test Method
PM (federal)	2 hours	40 CFR 60, Appendix A, Method 5
PM (state)	2 hours	Iowa Compliance Sampling Manual Method 5
PM <sub>10</sub>	3 hours	40 CFR 51, Appendix M, 201A with 202
Opacity	1 hour	40 CFR 60, Appendix A, Method 9
SO <sub>2</sub>	1 hour	40 CFR 60, Appendix A, Method 6C
NO <sub>x</sub>	1 hour	40 CFR 60, Appendix A, Method 7E
VOC	1 hour	40 CFR 60, Appendix A, Method 25A
CO	1 hour	40 CFR 60, Appendix A, Method 10
Pb	1 hour	40 CFR 60, Appendix A, Method 12
F	2 hours	40 CFR 60, Appendix A, Method 13B or Method 26A
TRS	1 hour	40 CFR 60, Appendix A, Method 16B
H <sub>2</sub> SO <sub>4</sub>	1 hour	40 CFR 60, Appendix A, Method 8
Hg	1 hour	40 CFR 60, Appendix A, Method 29
HCl	1 hour	40 CFR 60, Appendix A, Method 26
TSM	1 hour	40 CFR 60, Appendix A, Method 29
Acetaldehyde	1 hour	40 CFR 60, Appendix A, Method 18
Benzene	1 hour	40 CFR 60, Appendix A, Method 18
Isophorone	1 hour	40 CFR 60, Appendix A, Method 18
Toluene	1 hour	40 CFR 60, Appendix A, Method 18



## 12. Compliance Demonstration(s) and Performance Testing (Continued)

The unit(s) being sampled should be operated in a normal manner at its maximum continuous output as rated by the equipment manufacturer, or the rate specified by the owner as the maximum production rate at which this unit(s) will be operated. In cases where compliance is to be demonstrated at less than the maximum continuous output as rated by the manufacturer, and it is the owner's intent to limit the capacity to that rating, the owner may submit evidence to the Department that this unit(s) has been physically altered so that capacity cannot be exceeded, or the Department may require additional testing, continuous monitoring, reports of operating levels, or any other information deemed necessary by the Department to determine whether this unit(s) is in compliance.

Each emissions compliance test must be approved by the Department. Unless otherwise specified by the Department, each test shall consist of three (3) separate runs. The arithmetic mean of three (3) acceptable test runs shall apply for compliance, unless otherwise indicated by the Department.

A pretest meeting shall be held at a mutually agreeable site no less than fifteen (15) days prior to the date of each test. Representatives from the Department shall attend this meeting, along with the owner and the testing firm, if any. It shall be the responsibility of the owner to coordinate and schedule the pretest meeting. The owner shall be responsible for the installation and maintenance of test ports. The Department shall reserve the right to impose additional, different, or more detailed testing requirements.

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## 13. NSPS and NESHAP Applicability

This emission unit is subject to Subparts A (General Provisions, 40 CFR §60.1 – 40 CFR §60.19) and Da (Standards of Performance for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978, 40 CFR §60.40Da – 40 CFR §60.52Da) of the New Source Performance Standards (NSPS).

This emission unit is subject to Subparts A (General Provisions, 40 CFR §63.1 – 40 CFR §63.15) and B [Requirements for Control Technology Determinations for Major Sources in Accordance With Clean Air Act Sections, Sections 112(g) and 112(j), 40 CFR §63.40 – 40 CFR §63.56] of the National Emission Standard for Hazardous Air Pollutants (NESHAP). Consistent with the requirements of 40 CFR §63.44, if the EPA Administrator promulgates an applicable emission standard under Section 112(d) or Section 112(h) of the Act, or if the permitting authority issues a determination under Section 112(j) of the Act, this permit will be modified as necessary to make the terms of this permit consistent with the applicable standard. The owner or operator is required to submit a permit application requesting a change.

The facility (plant number 78-01-026) is considered an affected source under 40 CFR 72, 73, 75, 76, 77, and 78 definitions as emission units at this source are subject to the acid rain emission reduction requirements or the acid rain emission limitations, as adopted by the Department by reference (See 567 IAC 22.120 – 567 IAC 22.148). This emission unit will be subject to the SO<sub>2</sub> allowance allocation, NO<sub>x</sub> emission limitations, and monitoring provisions of the federal acid rain program.

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## 14. Operating Limits

Operating limits for this permit shall be:

- A. This emission unit shall be limited to firing on coal and #2 fuel oil (for light off, startup, and flame stabilization).
- B. The sulfur (S) content of the fuel used shall not exceed 0.625 lbs of S/MMBTU.
- C. Per 40 CFR §60.42Da(a)(2), particulate matter (federal) emissions shall not exceed 1% of the potential combustion concentration (99% reduction) when combusting coal.
- D. Per 40 CFR §60.43Da(a)(1) and 40 CFR §60.43Da(a)(2), sulfur dioxide emissions shall not exceed:
  - (1) 520 ng/J (1.2 lb/MMBTU) heat input and 10% of the potential combustion concentration (90% reduction) when combusting coal, or
  - (2) 30% of the potential combustion concentration (70% reduction), when emissions are less than 260 ng/J (0.60 lb/MMBTU) heat input. Compliance with this standard is determined on a 30-day rolling average basis.

#### 14. Operating Limits (Continued)

- E. Per 40 CFR §60.48a(d), during emergency conditions an affected facility with a malfunctioning flue gas desulfurization system may be operated if sulfur dioxide emissions are minimized by:
- (1) Operating all operable flue gas desulfurization system modules, and bringing back into operation any malfunctioned module as soon as repairs are completed,
  - (2) Bypassing flue gases around only those flue gas desulfurization system modules that have been taken out of operation because they were incapable of any sulfur dioxide emission reduction or which would have suffered significant physical damage if they had remained in operation, and
  - (3) Designing, constructing, and operating a spare flue gas desulfurization system module for an affected facility larger than 365 MW (1,250 million Btu/hr) heat input (approximately 125 MW electrical output capacity). The Administrator may at his discretion require the owner or operator within 60 days of notification to demonstrate spare module capability. To demonstrate this capability, the owner or operator must demonstrate compliance with the appropriate requirements under paragraph (a), (b), (d), (e), and (h) under 60 CFR §60.43a for any period of operation lasting from 24 hours to 30 days when:
    - (i) Any one flue gas desulfurization module is not operated,
    - (ii) The affected facility is operating at the maximum heat input rate,
    - (iii) The fuel fired during the 24-hour to 30-day period is representative of the type and average sulfur content of fuel used over a typical 30-day period, and
    - (iv) The owner or operator has given the Administrator at least 30 days notice of the date and period of time over which the demonstration will be performed.
- F. The owner or operator shall submit the written reports required under NSPS Subparts A and Da to the Administrator semiannually for each six-month period. All semiannual reports shall be postmarked by the 30th day following the end of each six-month period.
- G. The minimum sorbent feed rate of the Flue Gas Desulfurization System shall be 0.40 lbs of lime/lb of inlet SO<sub>2</sub> based on 90% available CaO in the lime, expressed as a three (3) hour average except for eight (8) hours per calendar month in which the three (3) hour average minimum sorbent feed rate may be less than 0.40 lbs of lime/lb of inlet SO<sub>2</sub>.
- H. The minimum ammonia feed rate of the Selective Catalytic Reduction (SCR) system shall be 0.43 lbs of urea per pound of inlet SCR NO<sub>x</sub>, expressed as a thirty (30) day rolling average.
- I. The minimum halogenated activated carbon injection rate of the Activated Carbon Injection (ACI) system shall be 1.2 pounds of halogenated activated carbon per million standard cubic feet (MMft<sup>3</sup> or MMCF) of exhaust gas, expressed as a thirty (30) day rolling average.
- J. The owner or operator may, but is not required to, treat the coal burned in this unit with chemicals containing additives including a mineral composite of calcium silicate components and other calcium compounds containing iron and aluminum.
- K. The following conditions (except Condition 4) are required on the haul roads at the facility (plant number 78-01-026) in order for the roads to meet the BACT emission rates:
- (1) Haul truck loads shall be enclosed or covered
  - (2) The maximum silt content shall not exceed 2.8 g/m<sup>2</sup>. See Condition 12 for testing requirements.
  - (3) In order to protect the NAAQS, the maximum number of trucks associated with ash and FGD hauling (all units) shall not exceed 80 trucks per day.
  - (4) For paved roads:
    - (i) Fugitive emissions of paved haul roads shall be controlled to an effective control efficiency of 80% by either water flushing followed by sweeping or using a street sweeper that is certified to achieve a pick-up efficiency of 80%. The control and record keeping requirements described in Condition 15.Q. shall begin at the same time as the startup of Boiler 4. The control efficiency of 80% shall be achieved by either using a certified sweeper once per day or by water flushing followed by sweeping of the paved haul roads once per day. The water spray rate shall be a minimum of 0.23 gallons per square yard.
    - (ii) If water flushing followed by sweeping cannot be accomplished because the ambient air temperature (as measured at the facility during daylight operating hours) will be less than 35<sup>0</sup> F (1.7<sup>0</sup> C) or conditions due to weather, in combination with the application of the water, could create hazardous driving conditions, then the water flushing and sweeping shall be postponed and accomplished as soon after the scheduled date as the conditions preventing the application have abated.
    - (iii) Water flushing and sweeping need not occur when a rain gage located at the site indicates that at least 0.2 inches of precipitation (water equivalent) has occurred within the preceding 24-hr time period or the paved road(s) will not be used on a given day.

#### 14. Operating Limits (Continued)

- (5) For unpaved roads:
  - (i) Fugitive emissions from unpaved haul roads shall be controlled by applying a chemical dust suppressant. Applications of the selected chemical dust suppressant and the record keeping requirements described in Condition 15.Q. shall begin at the same time as the startup of Boiler 4. A control efficiency of 95% shall be maintained on all haul roads. MidAmerican may elect to use any chemical dust suppressant that is capable of achieving the 95% control efficiency. In the event that the manufacturer or distributor of a chemical dust suppressant recommends different amounts of chemical dust suppressant or MidAmerican chooses to use a different chemical dust suppressant, MidAmerican shall notify DNR of the change in application rates and/or chemical dust suppressant and the manufacturer's/distributor's recommendations.
  - (ii) If the selected chemical dust suppressant cannot be applied because the ambient air temperature (as measured at the facility during daylight operating hours) will be less than 35<sup>0</sup> F (1.7<sup>0</sup> C) or conditions due to weather, in combination with the application of the chemical dust suppressant, could create hazardous driving conditions, then the chemical dust suppressant application shall be postponed and applied as soon after the scheduled application date as the conditions preventing the application have abated.
- L. The following conditions are required on the following volume source fugitive emissions at the facility (plant number 78-01-026) for this project in order for these sources of emissions to meet the BACT emission rates:
  - (1) Stacker conveyor:
    - (i) Fugitive emissions shall be controlled by applying a chemical dust suppressant. Applications of the selected chemical dust suppressant and the record keeping requirements described in Condition 15.R. shall begin at the same time as the startup of Boiler 4. A control efficiency of 95% shall be maintained. MidAmerican may elect to use any chemical dust suppressant that is capable of achieving the 95% control efficiency. In the event that the manufacturer or distributor of a chemical dust suppressant recommends different amounts of chemical dust suppressant or MidAmerican chooses to use a different chemical dust suppressant, MidAmerican shall notify DNR of the change in application rates and/or chemical dust suppressant and the manufacturer's/distributor's recommendations.
    - (ii) If the selected chemical dust suppressant cannot be applied because the ambient air temperature (as measured at the facility during operating hours) will be less than 35<sup>0</sup> F (1.7<sup>0</sup> C) or other conditions due to weather cause the chemical dust suppressant to not be applied then the chemical dust suppressant application shall be postponed and applied as soon after the scheduled application date as the conditions preventing the application have abated.
    - (iii) The application of chemical dust suppressant is not required when rail unloading directly from the train to the plant silos without first depositing to a pile.
  - (2) Transfer to active pile:
    - (i) Fugitive emissions shall be controlled by applying a chemical dust suppressant. Applications of the selected chemical dust suppressant and the record keeping requirements described in Condition 15.R. shall begin at the same time as the startup of Boiler 4. A control efficiency of 95% shall be maintained. MidAmerican may elect to use any chemical dust suppressant that is capable of achieving the 95% control efficiency. In the event that the manufacturer or distributor of a chemical dust suppressant recommends different amounts of chemical dust suppressant or MidAmerican chooses to use a different chemical dust suppressant, MidAmerican shall notify DNR of the change in application rates and/or chemical dust suppressant and the manufacturer's/distributor's recommendations.
    - (ii) If the selected chemical dust suppressant cannot be applied because the ambient air temperature (as measured at the facility during operating hours) will be less than 35<sup>0</sup> F (1.7<sup>0</sup> C) or other conditions due to weather cause the chemical dust suppressant to not be applied then the chemical dust suppressant application shall be postponed and applied as soon after the scheduled application date as the conditions preventing the application have abated.

#### 14. Operating Limits (Continued)

- (3) Bucket reclaim:
  - (i) Fugitive emissions shall be controlled by applying a chemical dust suppressant. Applications of the selected chemical dust suppressant and the record keeping requirements described in Condition 15.R. shall begin at the same time as the startup of Boiler 4. A control efficiency of 95% shall be maintained. MidAmerican may elect to use any chemical dust suppressant that is capable of achieving the 95% control efficiency. In the event that the manufacturer or distributor of a chemical dust suppressant recommends different amounts of chemical dust suppressant or MidAmerican chooses to use a different chemical dust suppressant, MidAmerican shall notify DNR of the change in application rates and/or chemical dust suppressant and the manufacturer's/distributor's recommendations.
  - (ii) If the selected chemical dust suppressant cannot be applied because the ambient air temperature (as measured at the facility during operating hours) will be less than 35<sup>0</sup> F (1.7<sup>0</sup> C) or other conditions due to weather cause the chemical dust suppressant to not be applied then the chemical dust suppressant application shall be postponed and applied as soon after the scheduled application date as the conditions preventing the application have abated.
- (4) Rail unloading:
  - (i) Fugitive emissions shall be controlled by applying a chemical dust suppressant. Applications of the selected chemical dust suppressant and the record keeping requirements described in Condition 15.R. shall begin at the same time as the startup of Boiler 4. A control efficiency of 95% shall be maintained. MidAmerican may elect to use any chemical dust suppressant that is capable of achieving the 95% control efficiency. In the event that the manufacturer or distributor of a chemical dust suppressant recommends different amounts of chemical dust suppressant or MidAmerican chooses to use a different chemical dust suppressant, MidAmerican shall notify DNR of the change in application rates and/or chemical dust suppressant and the manufacturer's/distributor's recommendations.
  - (ii) If the selected chemical dust suppressant cannot be applied because the ambient air temperature (as measured at the facility during operating hours) will be less than 35<sup>0</sup> F (1.7<sup>0</sup> C) or other conditions due to weather cause the chemical dust suppressant to not be applied then the chemical dust suppressant application shall be postponed and applied as soon after the scheduled application date as the conditions preventing the application have abated.
  - (iii) The application of chemical dust suppressant is not required when rail unloading is done directly from the train to the plant silos without first depositing to a pile.
- M. The following conditions are required on the following area source fugitive emissions at the facility (plant number 78-01-026) for this project in order for these sources to meet the BACT emission rate:
  - (1) Active coal pile:
    - (i) The size of the active coal pile shall not exceed 311,155 square feet.
    - (ii) Fugitive emissions shall be controlled by applying a chemical dust suppressant. Applications of the selected chemical dust suppressant and the record keeping requirements described in Condition 15.S. shall begin at the same time as the startup of Boiler 4. A control efficiency of 95% shall be maintained. MidAmerican may elect to use any chemical dust suppressant that is capable of achieving the required control efficiencies. In the event that the manufacturer or distributor of a chemical dust suppressant recommends different amounts of chemical dust suppressant or MidAmerican chooses to use a different chemical dust suppressant, MidAmerican shall notify DNR of the change in application rates and/or chemical dust suppressant and the manufacturer's/distributor's recommendations.
    - (iii) If the selected chemical dust suppressant cannot be applied because the ambient air temperature (as measured at the facility during daylight operating hours) will be less than 35<sup>0</sup> F (1.7<sup>0</sup> C) or other conditions due to weather cause the chemical dust suppressant to not be applied then the chemical dust suppressant application shall be postponed and applied as soon after the scheduled application date as the conditions preventing the application have abated.

#### 14. Operating Limits (Continued)

- (2) Inactive coal storage pile:
    - (i) The size of the inactive coal storage pile shall not exceed 1,196,459 square feet.
    - (ii) Fugitive emissions shall be controlled by applying a chemical dust suppressant. Applications of the selected chemical dust suppressant and the record keeping requirements described in Condition 15.S. shall begin at the same time as the startup of Boiler 4. A control efficiency of 99% shall be maintained when the pile is inactive. A chemical dust suppressant shall be used to meet a control efficiency of 95% for maintenance of the inactive pile. MidAmerican may elect to use any chemical dust suppressant that is capable of achieving the required control efficiencies. In the event that the manufacturer or distributor of a chemical dust suppressant recommends different amounts of chemical dust suppressant or MidAmerican chooses to use a different chemical dust suppressant, MidAmerican shall notify DNR of the change in application rates and/or chemical dust suppressant and the manufacturer's/distributor's recommendations.
    - (iii) If the selected chemical dust suppressant cannot be applied because the ambient air temperature (as measured at the facility during daylight operating hours) will be less than 35<sup>0</sup> F (1.7<sup>0</sup> C) or other conditions due to weather cause the chemical dust suppressant to not be applied then the chemical dust suppressant application shall be postponed and applied as soon after the scheduled application date as the conditions preventing the application have abated.
  - (3) Rail unloading coal stockout pile:
    - (i) The size of the active coal storage pile shall not exceed 28,224 square feet.
    - (ii) Fugitive emissions shall be controlled by applying a chemical dust suppressant. Applications of the selected chemical dust suppressant and the record keeping requirements described in Condition 15.S. shall begin at the same time as the startup of Boiler 4. A control efficiency of 95% shall be maintained. MidAmerican may elect to use any chemical dust suppressant that is capable of achieving the 95% control efficiency. In the event that the manufacturer or distributor of a chemical dust suppressant recommends different amounts of chemical dust suppressant or MidAmerican chooses to use a different chemical dust suppressant, MidAmerican shall notify DNR of the change in application rates and/or chemical dust suppressant and the manufacturer's/distributor's recommendations.
    - (iii) If the selected chemical dust suppressant cannot be applied because the ambient air temperature (as measured at the facility during daylight operating hours) will be less than 35<sup>0</sup> F (1.7<sup>0</sup> C) or other conditions due to weather cause the chemical dust suppressant to not be applied then the chemical dust suppressant application shall be postponed and applied as soon after the scheduled application date as the conditions preventing the application have abated.
- N. A bag leak detection system must be installed to meet the following criteria:
- (1) At least one detector must be located in each compartment of the baghouse.
  - (2) The bag leak detection system must be installed, operated, calibrated, and maintained in a manner consistent with the manufacturer's written specifications and recommendations and in accordance with the guidance provided in "Fabric Filter Bag Leak Detection Guidance," EPA-454/R-98-015, September 1997.
  - (3) The bag leak detection system must be certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 10 milligrams per actual cubic meter or less.
  - (4) The bag leak detection system sensor must provide output of relative or absolute particulate matter loadings.
  - (5) The bag leak detection system must be equipped with a device to continuously record the output signal from the sensors.
  - (6) The bag leak detection system must be equipped with an alarm system that will sound automatically when an increase in relative particulate matter emissions over a preset level is detected. The alarm must be located where it is easily heard by plant operating personnel.
  - (7) The system's instrumentation and alarm may be shared among detectors.
  - (8) The system's alarm shall sound no more than 5% of the operating time during a 6-month period.

#### 14. Operating Limits (Continued)

- O. Within sixty (60) days of Departmental approval of the last required test results from Condition 12 of this permit for acetaldehyde, benzene, isophorone, and toluene the owner or operator shall submit the following to the Department:
- (1) An analysis for acetaldehyde, benzene, isophorone, and toluene to establish new 112(g) case-by-case MACT limits for those pollutants. This analysis shall include:
    - A summary of each test.
    - The result of each individual run.
    - All outliers in the data set and the methodology used to establish outliers.
    - The average of all runs conducted with the outliers removed.
    - The standard deviation of all runs conducted with the outliers removed.
    - The upper bound 95% confidence level of all runs conducted with the outliers removed. The formula used shall be:
$$95\% = \text{avg} + t \frac{S}{\sqrt{n}}$$
  - (2) An analysis showing the correlation (or lack thereof) between CO and the organic HAPs that were tested.
  - (3) A request to establish the 112(g) case-by-case limits for organic HAP emissions based on the testing conducted and the required analysis.
- P. The waste material collected by the fabric filter and stored in the FGD waste silo system shall be processed through a pug-mill during loadout to increase the material moisture content to a minimum of 20%. The owner or operator shall conduct daily testing of the moisture content of the FGD waste material. Water wagons shall be used to wet the waste material during disposal site grading activities. These requirements do not apply to waste material being sold for beneficial use.
- Q. The owner or operator is allowed, but not required, to add an aqueous calcium bromide chemical and/or an aqueous calcium chloride chemical to the coal prior to combustion for added mercury (Hg) control.
- R. This emission unit is subject to all applicable operating limits set forth in NSPS Subparts A (40 CFR §60.1 – 40 CFR §63.19) and Da (40 CFR §60.40Da – 40 CFR §60.52Da) not specifically listed in this permit.
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#### 15. Operating Condition Monitoring

All records as required by this permit shall be kept on-site for a minimum of two (2) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner. These records shall show the following:

- A. The date and an analysis showing the sulfur content and heat input representative of the coal burned for that day.
- B. Per 40 CFR §60.51Da(a), the performance test data from the initial performance test and from the performance evaluation of the continuous monitors (including the transmissometer) for NO<sub>x</sub>, SO<sub>2</sub>, and PM emissions shall be submitted to the Administrator.
- C. Per 40 CFR §60.51Da(b), the following information for NO<sub>x</sub> and SO<sub>2</sub> shall be reported to the Administrator for each twenty-four (24) hour period:
  - (1) Calendar date,
  - (2) The average sulfur dioxide and nitrogen oxide emission rates (ng/J or lb/million Btu) for each thirty (30) successive boiler operating days, ending with the last thirty (30) day period in the quarter; reasons for non-compliance with the emission standards; and, description of corrective actions taken.
  - (3) Percent reduction of the potential combustion concentration of sulfur dioxide for each thirty (30) successive boiler operating days, ending with the last thirty (30) day period in the quarter; reasons for non-compliance with the standard; and, description of corrective actions taken.

## 15. Operating Condition Monitoring (Continued)

- (4) Identification of the boiler operating days for which pollutant or diluent data have not been obtained by an approved method for at least eighteen (18) hours of operation of the facility; justification for not obtaining sufficient data; and description of corrective actions taken.
  - (5) Identification of the times when emissions data have been excluded from the calculation of average emission rates because of startup, shutdown, malfunction (NO<sub>x</sub> only), emergency conditions (SO<sub>2</sub> only), or other reasons, and justification for excluding data for reasons other than startup, shutdown, malfunction, or emergency conditions.
  - (6) Identification of "F" factor used for calculations, method of determination, and type of fuel combusted.
  - (7) Identification of times when hourly averages have been obtained based on manual sampling methods.
  - (8) Identification of the times when the pollutant concentration exceeded full span of the continuous monitoring system.
  - (9) Description of any modifications to the continuous monitoring system which could affect the ability of the continuous monitoring system to comply with Performance Specifications 2 or 3:
- D. Per 40 CFR §60.51Da(c), if the minimum quantity of emission data as required by 40 CFR §60.49Da is not obtained for any 30 successive boiler operating days, the following information obtained under the requirements of 40 CFR §60.48a(h) shall be reported to the Administrator for that thirty (30) day period:
- (1) The number of hourly averages available for outlet emission rates (no) and inlet emission rates (n<sub>i</sub>) as applicable.
  - (2) The standard deviation of hourly averages for outlet emission rates (s<sub>o</sub>) and inlet emission rates (s<sub>i</sub>) as applicable.
  - (3) The lower confidence limit for the mean outlet emission rate (E<sub>o</sub>\*) and the upper confidence limit for the mean inlet emission rate (E<sub>i</sub>\*) as applicable.
  - (4) The applicable potential combustion concentration.
  - (5) The ratio of the upper confidence limit for the mean outlet emission rate (E<sub>o</sub>\*) and the allowable emission rate (E<sub>std</sub>) as applicable.
- E. Per 40 CFR §60.51Da(d), if any standards under 40 CFR §60.43Da are exceeded during emergency conditions because of control system malfunction, the owner or operator of the affected facility shall submit a signed statement:
- (1) Indicating if emergency conditions existed and requirements under § 60.48Da(d) were met during each period, and
  - (2) Listing the following information:
    - (i) Time periods the emergency condition existed;
    - (ii) Electrical output and demand on the owner or operator's electric utility system and the affected facility;
    - (iii) Amount of power purchased from interconnected neighboring utility companies during the emergency period;
    - (iv) Percent reduction in emissions achieved;
    - (v) Atmospheric emission rate (ng/J) of the pollutant discharged; and
    - (vi) Actions taken to correct control system malfunction
- F. Per 40 CFR §60.51Da(e), if fuel pretreatment credit toward the sulfur dioxide emission standard under 40 CFR §60.43Da is claimed, the owner or operator of the affected facility shall submit a signed statement:
- (1) Indicating what percentage cleaning credit was taken for the calendar quarter, and whether the credit was determined in accordance with the provisions of 40 CFR §60.50Da and Method 19 (appendix A); and
  - (2) Listing the quantity, heat content, and date each pretreated fuel shipment was received during the previous quarter; the name and location of the fuel pretreatment facility; and the total quantity and total heat content of all fuels received at the affected facility during the previous quarter.
- G. Per 40 CFR §60.51Da(f), any periods for which opacity, sulfur dioxide or nitrogen oxides emissions data are not available, the owner or operator of the affected facility shall submit a signed statement indicating if any changes were made in operation of the emission control system during the period of data unavailability. Operations of the control system and affected facility during periods of data unavailability are to be compared with operation of the control system and affected facility before and following the period of data unavailability.

## 15. Operating Condition Monitoring (Continued)

- H. Per 40 CFR §60.51Da(h), the owner or operator of the affected facility shall submit a signed statement indicating whether:
- (1) The required continuous monitoring system calibration, span, and drift checks or other periodic audits have or have not been performed as specified.
  - (2) The data used to show compliance was or was not obtained in accordance with approved methods and procedures of this part and is representative of plant performance.
  - (3) The minimum data requirements have or have not been met; or, the minimum data requirements have not been met for errors that were unavoidable.
  - (4) Compliance with the standards has or has not been achieved during the reporting period.
- I. Per 40 CFR §60.51Da(i), for the purposes of the reports required under 40 CFR §60.7, periods of excess emissions are defined as all 6-minute periods during which the average opacity exceeds the applicable opacity standards under 40 CFR §60.42Da(b). Opacity levels in excess of the applicable opacity standard and the date of such excesses are to be submitted to the Administrator each calendar quarter.
- J. Per 40 CFR §60.51Da(j), owner or operator shall submit the written reports required under 40 CFR §60.51Da and 40 CFR 60, Subpart A to the Administrator semiannually for each six (6) month period. All semiannual reports shall be postmarked by the thirtieth day following the end of each six (6) month period.
- K. Per 40 CFR §60.51Da(k), the owner or operator of an affected facility may submit electronic quarterly reports for SO<sub>2</sub> and/or NO<sub>x</sub> and/or opacity in lieu of submitting the written reports required under 40 CFR §60.51Da(b) and 40 CFR §60.51Da(i). The format of each quarterly electronic report shall be coordinated with the permitting authority. The electronic report(s) shall be submitted no later than 30 days after the end of the calendar quarter and shall be accompanied by a certification statement from the owner or operator, indicating whether compliance with the applicable emission standards and minimum data requirements of this subpart was achieved during the reporting period. Before submitting reports in the electronic format, the owner or operator shall coordinate with the permitting authority to obtain their agreement to submit reports in this alternative form.
- L. This emission unit is subject to all applicable recordkeeping and reporting requirements set forth in NSPS Subparts A (40 CFR §60.1 – 40 CFR §63.19) and Da (40 CFR §60.40Da – 40 CFR §60.52Da) not specifically listed in this permit.
- M. The sorbent feed rate of the Flue Gas Desulfurization System (in lb/lb) expressed as a three (3) hour rolling average.
- N. The urea feed rate of the SCR system (in lb/lb) expressed as a thirty (30) day rolling average.
- O. The activated carbon feed rate of the ACI system (in lb/MMft<sup>3</sup>) expressed as a thirty (30) day rolling average.
- P. The following records must be maintained from the bag leak detection system:
- (1) The date, time and duration of each system alarm.
  - (2) The time corrective action was initiated and completed.
  - (3) A brief description of the cause of the alarm and the corrective action.
  - (4) A record of the percent of operating time during each 6-month period that the alarm sounds. In calculating the operating time percentage,
    - (i) if an inspection of the fabric filter demonstrates that no corrective action is required, no alarm time is counted.
    - (ii) if corrective action is required, each alarm shall be counted as a minimum of one (1) hour.
    - (iii) if it takes longer than 1 hour to initiate corrective action, the alarm time shall be counted as the actual amount of time taken to initiate corrective action.
- Q. A log showing the following for haul roads:
- (1) The date and number of trucks associated with Units 1, 2, 3 and 4.
  - (2) Paved roads:
    - (i) Records of either the use of a certified sweeper or the applications shall be maintained and shall include:
      - The dates of each application or use of certified sweeper,
      - The amount of water applied (if applicable),
      - The areas treated or swept by certified sweeper, and
      - The operator's initials.
    - (ii) If water is to be used and is not applied when scheduled then the records should so indicate and provide an explanation.



### 15. Operating Condition Monitoring (Continued)

- (3) Unpaved roads:
  - (i) Records of the applications shall be maintained and shall include:
    - The dates of each application,
    - The chemical dust suppressant used,
    - The application intensity (gal/yd<sup>2</sup>),
    - Dilution ratio,
    - The operator's initials, and
    - Documentation of road and weather conditions, if necessary.
  - (ii) If the selected chemical dust suppressant is not applied as planned, then the records should so indicate and provide an explanation.
- R. A log showing the following for the volume sources associated with this project:
  - (1) Stacker conveyor:
    - (i) Records of the applications shall be maintained and shall include:
      - The dates of each application,
      - The chemical dust suppressant used,
      - The application intensity (gal/yd<sup>2</sup>),
      - Dilution ratio,
      - The operator's initials, and
      - Documentation of weather conditions, if necessary.
    - (ii) If the selected chemical dust suppressant is not applied as planned, then the records should so indicate and provide an explanation.
  - (2) Transfer to active pile:
    - (i) Records of the applications shall be maintained and shall include:
      - The dates of each application,
      - The chemical dust suppressant used,
      - The application intensity (gal/yd<sup>2</sup>),
      - Dilution ratio,
      - The operator's initials, and
      - Documentation of weather conditions, if necessary.
    - (ii) If the selected chemical dust suppressant is not applied as planned, then the records should so indicate and provide an explanation.
  - (3) Bucket reclaim:
    - (i) Records of the applications shall be maintained and shall include:
      - The dates of each application,
      - The chemical dust suppressant used,
      - The application intensity (gal/yd<sup>2</sup>),
      - Dilution ratio,
      - The operator's initials, and
      - Documentation of weather conditions, if necessary.
    - (ii) If the selected chemical dust suppressant is not applied as planned, then the records should so indicate and provide an explanation.
  - (4) Rail unloading:
    - (i) Records of the applications shall be maintained and shall include:
      - The dates of each application,
      - The chemical dust suppressant used,
      - The application intensity (gal/yd<sup>2</sup>),
      - Dilution ratio,
      - The operator's initials, and
      - Documentation of weather conditions, if necessary.
    - (ii) If the selected chemical dust suppressant is not applied as planned, then the records should so indicate and provide an explanation.

### 15. Operating Condition Monitoring (Continued)

- S. A log showing the following for the area sources in this project:
- (1) Active coal pile:
    - (i) The date and size of the pile.
    - (ii) Records of the applications shall be maintained and shall include:
      - The dates of each application,
      - The chemical dust suppressant used,
      - The application intensity (gal/yd<sup>2</sup>),
      - Dilution ratio,
      - The operator's initials, and
      - Documentation of weather conditions, if necessary.
    - (iii) If the selected chemical dust suppressant is not applied as planned, then the records should so indicate and provide an explanation.
  - (2) Inactive storage pile:
    - (i) The date and size of the pile.
    - (ii) Records of the applications shall be maintained and shall include:
      - The dates of each application,
      - The chemical dust suppressant used,
      - The application intensity (gal/yd<sup>2</sup>),
      - Dilution ratio,
      - The operator's initials, and
      - Documentation of weather conditions, if necessary.
    - (iii) If the selected chemical dust suppressant is not applied as planned, then the records should so indicate and provide an explanation.
  - (3) Rail unloading coal stockout pile:
    - (i) The date and size of the pile.
    - (ii) Records of the applications shall be maintained and shall include:
      - The dates of each application,
      - The chemical dust suppressant used,
      - The application intensity (gal/yd<sup>2</sup>),
      - Dilution ratio,
      - The operator's initials, and
      - Documentation of weather conditions, if necessary.
    - (iii) If the selected chemical dust suppressant is not applied as planned, then the records should so indicate and provide an explanation.
- T. The results of all FGD waste material moisture content tests.
- U. The date and the average hourly rate of aqueous calcium bromide and/or calcium chloride that is added to the coal.
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## 16. Continuous Emission Monitoring

The following continuous emission monitoring requirements apply to this emission point and its associated emission unit(s) and control equipment:

A. The following monitoring systems are required:

- *Opacity:*

In accordance with 40 CFR §60.49Da(a), the owner or operator shall install, calibrate, maintain, and operate a continuous monitoring system (CEMS) and record the output of the system, for measuring the opacity of emissions discharged to the atmosphere.

If opacity interference due to water droplets exists in the stack (for example, from the use of an FGD system), the opacity is monitored upstream of the interference (at the inlet to the FGD system). If opacity interference is experienced at all locations (both at the inlet and outlet of the sulfur dioxide control system), alternate parameters indicative of the particulate matter control system's performance are monitored (subject to the approval of the Administrator).

The system shall be designed to meet the 40 CFR 60, Appendix B, Performance Specification 1 (PS1).

Per 40 CFR §60.48Da(p), the owner or operator may elect to install, certify, maintain and operate a CEMS measuring PM emissions discharged to the atmosphere and record the output of the system as specified in 40 CFR §60.48Da(p)(1) through 40 CFR §60.48Da(p)(8). If the owner or operator elects to use the PM CEMS in lieu of an opacity monitor to demonstrate compliance with the NSPS, the opacity monitor is still required as the monitor shall also be used to demonstrate compliance with the BACT emission standards in this permit.

- *SO<sub>2</sub>:*

In accordance with 40 CFR §60.49Da(b), the owner or operator shall install, calibrate, maintain, and operate a continuous monitoring system (CEMS) and record the output of the system, for measuring sulfur dioxide (SO<sub>2</sub>) emissions, except where natural gas is the only fuel combusted, as follows:

- (1) Install, calibrate, maintain, and operate a CEMS and record the output of the system, for measuring sulfur dioxide (SO<sub>2</sub>) emissions discharged to the atmosphere or
- (2) If the owner or operator has installed and certified a SO<sub>2</sub> CEMS according to the requirements of 40 CFR §75.21 and 40 CFR 75, Appendix B, that CEMS may be used to meet the SO<sub>2</sub> monitoring requirements provided:
  - (i) A CO<sub>2</sub> or O<sub>2</sub> continuous monitoring system is installed, calibrated, maintained and operated at the same location in accordance with 40 CFR §60.49Da(d); and
  - (ii) For sources subject to an SO<sub>2</sub> emission limit in lb/MMBTU under §60.43Da:
    - (a) When relative accuracy testing is conducted, the SO<sub>2</sub> concentration data and the CO<sub>2</sub> (or O<sub>2</sub>) data are collected simultaneously; and
    - (b) In addition to meeting the applicable SO<sub>2</sub> and CO<sub>2</sub> (or O<sub>2</sub>) relative accuracy specifications in Figure 2 of 40 CFR 75 Appendix B, the relative accuracy (RA) standard in 40 CFR 60, Appendix B, Performance Specification 2 (PS2), Section 13.2 is met when the RA is calculated on a lb/MMBTU basis and
  - (iii) The reporting requirements of 40 CFR §60.51Da are met. The SO<sub>2</sub> and CO<sub>2</sub> (or O<sub>2</sub>) data reported to meet the requirements of 40 CFR §60.51Da shall not include substitute data values derived from the missing data procedures in 40 CFR 75, Subpart D, nor shall the SO<sub>2</sub> data have been bias adjusted according to the procedures of 40 CFR 75.

## 16. Continuous Emission Monitoring (Continued)

The system shall be designed to meet the 40 CFR 60, Appendix B, Performance Specification 2 (PS2) and Performance Specification 6 (PS6) requirements. The specifications of 40 CFR 60, Appendix F (Quality Assurance/Quality Control) shall apply. Appendix F requirements shall be supplemented with a quarterly notice to the Department with the dates of the quarterly cylinder gas audits and annual relative accuracy test audit.

This monitor shall also be used to demonstrate compliance with the non-NSPS emission standards in this permit.

- *NO<sub>x</sub>*:

In accordance with 40 CFR §60.49Da(c), the owner or operator shall either:

- (1) Install, calibrate, maintain, and operate a CEMS and record the output of the system, for measuring nitrogen oxides (NO<sub>x</sub>) emissions discharged to the atmosphere; or
- (2) If the owner or operator has installed a NO<sub>x</sub> emission rate CEMS to meet the requirements of 40 CFR 75 and is continuing to meet the ongoing requirements of 40 CFR 75, that CEMS may be used to meet the requirements of 40 CFR §60.49Da(c), except that the owner or operator shall also meet the requirements of 40 CFR §60.51Da. Data reported to meet the requirements of 40 CFR §60.51Da shall not include data substituted using the missing data procedures in 40 CFR 75, Subpart D, nor shall the data have been bias adjusted according to the procedures of 40 CFR 75.

The system shall be designed to meet the 40 CFR 60, Appendix B, Performance Specification 2 (PS2) and Performance Specification 6 (PS6) requirements. The specifications of 40 CFR Appendix F (Quality Assurance/Quality Control) shall apply. Appendix F requirements shall be supplemented with a quarterly notice to the Department with the dates of the quarterly cylinder gas audits and annual relative accuracy test audit.

This monitor shall also be used to demonstrate compliance with the non-NSPS emission standards in this permit.

- *O<sub>2</sub> or CO<sub>2</sub>*:

In accordance with 40 CFR §60.49Da(d), the owner or operator shall install, calibrate, maintain, and operate a CEMS and record the output of the system, for measuring the oxygen (O<sub>2</sub>) or carbon dioxide (CO<sub>2</sub>) content of the flue gases at each location where SO<sub>2</sub> or NO<sub>x</sub> emissions are monitored.

- *CO*:

Compliance with the carbon monoxide (CO) emission limits of this permit shall be continuously demonstrated by the owner or operator through the use of a CEMS. Therefore, the owner or operator shall install, calibrate, maintain, and operate a CEMS for measuring CO emissions discharged to the atmosphere and record the output of the system.

The system shall be designed to meet the 40 CFR 60, Appendix B, Performance Specification 4A (PS4A) and Performance Specification 6 (PS6) requirements. The specifications of 40 CFR 60, Appendix F (Quality Assurance/Quality Control) shall apply. Appendix F requirements shall be supplemented with a quarterly notice to the Department with the dates of the quarterly cylinder gas audits and annual relative accuracy test audit.

## 16. Continuous Emission Monitoring (Continued)

- *Hg:*

Within one hundred twenty (120) days after final EPA approval of a mercury CEMS certification process the owner or operator shall continuously demonstrate compliance with the mercury (Hg) emission limits in this permit through the use of a combination of CEMS and stack testing as detailed in Condition 12, footnote 6 of the first table. Therefore, the owner or operator shall install, calibrate, maintain, and operate a CEMS for measuring Hg emissions discharged to the atmosphere and record the output of the system. Prior to final approval of the mercury CEMS certification process the owner or operator shall conduct quarterly Hg testing per the requirements of Condition 12.

The system shall be designed to meet the final EPA approved mercury monitoring specification. The specifications of 40 CFR 60, Appendix F (Quality Assurance/Quality Control) shall apply. Appendix F requirements shall be supplemented with a quarterly notice to the Department with the dates of the quarterly cylinder gas audits and annual relative accuracy test audit.

- *Wattmeter:*

Per 40 CFR §60.49Da(k)(1), the owner or operator shall install, calibrate, maintain, and operate a wattmeter; measure gross electrical output in megawatt-hour on a continuous basis; and record the output of the monitor for demonstrating compliance with the output-based standard under 40 CFR §60.44Da(d)(1).

- *Flowmeter:*

Per 40 CFR §60.49Da(l), the owner or operator demonstrating compliance with the output-based standard under 40 CFR §60.42Da, 40 CFR §60.43Da, 40 CFR §60.44Da, or 40 CFR §60.45Da shall install, certify, operate, and maintain a continuous flow monitoring system meeting the requirements of 40 CFR 60, Appendix B, Performance Specification 6 and 40 CFR 60, Appendix F, Procedure 1. In addition, the owner or operator shall record the output of the system, for measuring the volumetric flow of exhaust gases discharged to the atmosphere or

Alternatively, per 40 CFR §60.49Da(m), data from a continuous flow monitoring system certified according to the requirements of 40 CFR §75.20(c) and 40 CFR 75, Appendix A, and continuing to meet the applicable quality control and quality assurance requirements of 40 CFR §75.21 and 40 CFR 75, Appendix B, may be used.

Flow rate data reported to meet the requirements of 40 CFR §60.51Da shall not include substitute data values derived from the missing data procedures of 40 CFR 75.

- B. In accordance with 40 CFR §60.49Da(e), the CEMS required in Condition 16.A. for SO<sub>2</sub>, NO<sub>x</sub>, and either O<sub>2</sub> or CO<sub>2</sub> shall be operated and the data recorded during all periods of operation including periods of startup, shutdown, malfunction or emergency conditions, except for CEMS breakdowns, repairs, calibration checks, and zero and span adjustments.

## 16. Continuous Emission Monitoring (Continued)

- C. In accordance with 40 CFR §60.49Da(f)(1), the owner or operator shall obtain emission data for at least eighteen (18) hours in at least twenty-two (22) out of thirty (30) successive boiler operating days. If this minimum data cannot be met with a CEMS, the owner or operator shall supplement the emission data with other monitoring systems approved by the Administrator or the following reference methods and procedures:
- (1) 40 CFR 60, Method 6 shall be used to determine the SO<sub>2</sub> concentration at the same location as the SO<sub>2</sub> monitor. Samples shall be taken at 60-minute intervals. The sampling time and sample volume for each sample shall be at least 20 minutes and 0.020 dscm (0.71 dscf). Each sample represents a 1-hour average.
  - (2) 40 CFR 60, Method 7 shall be used to determine the NO<sub>x</sub> concentration at the same location as the NO<sub>x</sub> monitor. Samples shall be taken at 30-minute intervals. The arithmetic average of two consecutive samples represents a 1-hour average.
  - (3) The emission rate correction factor, integrated bag sampling and analysis procedure of 40 CFR 60, Appendix A, Method 3B shall be used to determine the O<sub>2</sub> or CO<sub>2</sub> concentration at the same location as the O<sub>2</sub> or CO<sub>2</sub> monitor. Samples shall be taken for at least 30 minutes in each hour. Each sample represents a 1-hour average.
  - (4) The procedures in 40 CFR 60, Appendix A, Method 19 shall be used to compute each 1-hour average concentration in ng/J (1b/million Btu) heat input.

Acceptable alternative methods and procedures are given in Condition 16.F.

- D. The 1-hour averages required under 40 CFR §60.13(h) are expressed in ng/J (1b/million Btu) heat input and used to calculate the average emission rates under 40 CFR §60.48Da. The 1-hour averages are calculated using the data points required under 40 CFR §60.13(h)(2).
- E. Per 40 CFR §60.49Da(i), the owner or operator shall use the following methods and procedures to conduct monitoring system performance evaluations under 40 CFR §60.13(c) and calibration checks under 40 CFR §60.13(d):
- (1) Methods 3B, 6, and 7 shall be used to determine O<sub>2</sub>, SO<sub>2</sub>, and NO<sub>x</sub> concentrations, respectively.
  - (2) SO<sub>2</sub> or NO<sub>x</sub> (NO), as applicable, shall be used for preparing the calibration gas mixtures (in N<sub>2</sub>, as applicable) under 40 CFR 60, Appendix B, Performance Specification 2.
  - (3) The span value for a continuous monitoring system for measuring opacity is between 60 and 80 percent.
  - (4) The span value for a continuous monitoring system measuring NO<sub>x</sub> is either:
    - (a) 1,000 ppm or
    - (b) The owner or operator may elect to use the NO<sub>x</sub> span values determined according to Section 2.1.2 in 40 CFR 75, Appendix A.
  - (5) The span value of the sulfur dioxide continuous monitoring system is either:
    - (a) 125 percent of the maximum estimated hourly potential emissions of the fuel fired at the inlet to the sulfur dioxide control device and 50 percent of maximum estimated hourly potential emissions of the fuel fired at the outlet of the sulfur dioxide control device or
    - (b) The owner or operator may elect to use the SO<sub>2</sub> span values determined according to Section 2.1.1 in 40 CFR 75, Appendix A.

Acceptable alternative methods and procedures are given in Condition 16.F.

## 16. Continuous Emission Monitoring (Continued)

- F. The owner or operator may use the following as alternatives to the reference methods and procedures specified:
- (1) For 40 CFR 60, Appendix A: 40 CFR 60, Appendix A, Method 6, Method 6A or Method 6B (whenever 40 CFR 60, Appendix A, Method 6 and Method 3 or Method 3B data are used) or 40 CFR 60, Appendix A, Method 6C may be used. Each Method 6B sample obtained over 24 hours represents 24 1-hour averages. If either 40 CFR 60, Appendix A, Method 6A or 40 CFR 60, Appendix A, Method 6B is used under 40 CFR §60.49Da(i), the conditions under 40 CFR §60.49Da(d)(1) apply. These conditions do not apply under 40 CFR §60.49Da(h).
  - (2) For 40 CFR 60, Appendix A: 40 CFR 60, Appendix A, Method 7, Method 7A, 7C, 7D, or 7E may be used. If Method 7C, 7D, or 7E is used, the sampling time for each run shall be 1 hour.
  - (3) For 40 CFR 60, Appendix A, Method 3: 40 CFR 60, Appendix A, Method 3A or 3B may be used if the sampling time is 1 hour.
  - (4) For 40 CFR 60, Appendix A, Method 3B: 40 CFR 60, Appendix A, Method 3A may be used.
- G. The following data requirements shall apply to all CEMS for non-NSPS emission standards in this permit:
- (1) The CEMS required by this permit shall be operated and data recorded during all periods of operation of the emission unit except for CEM breakdowns and repairs. Data is recorded during calibration checks, and zero and span adjustments.
  - (2) The 1-hour average PM, Hg, SO<sub>2</sub>, NO<sub>x</sub>, and CO emission rates measured by the CEMS required by this permit shall be used to calculate compliance with the emission standards of this permit. At least 2 data points must be used to calculate each 1-hour average.
  - (3) For each hour of missing emission data (Hg, NO<sub>x</sub>, SO<sub>2</sub>, or CO), the owner or operator shall substitute data by:
    - (i) If the monitor data availability is equal to or greater than 95.0%, the owner or operator shall calculate substitute data by means of the automated data acquisition and handling system for each hour of each missing data period according to the following procedures:
      - (a) For the missing data period less than or equal to 24 hours, substitute the average of the hourly concentrations recorded by a pollutant concentration monitor for the hour before and the hour after the missing data period.
      - (b) For a missing data period greater than 24 hours, substitute the greater of:
        - The 90<sup>th</sup> percentile hourly concentration recorded by a pollutant concentration monitor during the previous 720 quality-assured monitor operating hours; or
        - The average of the hourly concentrations recorded by a pollutant concentration monitor for the hour before and the hour after the missing data period.
    - (ii) If the monitor data availability is at least 90.0% but less than 95.0%, the owner or operator shall calculate substitute data by means of the automated data acquisition and handling system for each hour of each missing data period according to the following procedures:
      - (a) For a missing data period of less than or equal to 8 hours, substitute the average of the hourly concentrations recorded by a pollutant concentration monitor for the hour before and the hour after the missing data period.
      - (b) For the missing data period of more than 8 hours, substitute the greater of:
        - The 95<sup>th</sup> percentile hourly pollutant concentration recorded by a pollutant concentration monitor during the previous 720 quality-assured monitor operating hours; or
        - The average of the hourly concentrations recorded by a pollutant concentration monitor for the hour before and the hour after the missing data period.
    - (iii) If the monitor data availability is less than 90.0%, the owner or operator shall obtain actual emission data by an alternate testing or monitoring method approved by the Department.
- H. If requested by the Department, the owner/operator shall coordinate the quarterly cylinder gas audits with the Department to afford the Department the opportunity to observe these audits. The relative accuracy test audits shall be coordinated with the Department.
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## 17. Description of Terms and Acronyms

acfm	Actual cubic feet per minute
Applicant	The owner, company official or authorized agent
CFR	Code of Federal Regulations
Department	Iowa Department of Natural Resources
DNR	Iowa Department of Natural Resources
gr/dscf	Grains per dry standard cubic foot
HAP	Hazardous Air Pollutant(s)
IAC	Iowa Administrative Code
Lb/bhp-hr	Pounds per brake horsepower hour
Lb/MWh (gross)	Pounds per gross megawatt hour
MMBTU	One million British thermal units
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NO <sub>x</sub>	Nitrogen Oxides
Owner	The owner or authorized representative
Permit	This document including permit conditions and all submitted application materials
PM <sub>10</sub>	Particulate Matter equal to or less than 10 microns in aerodynamic diameter
scfm	Standard cubic feet per minute
SIP	State Implementation Plan
SO <sub>2</sub>	Sulfur Dioxide
VOC	Volatile Organic Compound

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**END OF PERMIT CONDITIONS**