

Iowa Department of Natural Resources

Air Quality PSD Construction Permit

Notice of MACT Approval

Permit Holder

Firm: MidAmerican Energy Company

Contact:

Chad A. Teply
Outage Project Manager

(712) 366-5316

Responsible Party:

Jack L. Alexander
Sr. Vice President Supply and Marketing

2115 Navajo Road
Council Bluffs, IA 51501

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Council Bluffs, IA 51501

Permitted Equipment

Emission Unit(s): CBEC 4 Boiler (7,675 MMBTU/hr),
Three (3) Carbon Silos (4,800 ft³ each), and Fugitive Emissions

Control Equipment: Baghouse, Low NO_x Burners, Overfire Air, Selective Catalytic
Reduction, Activated Carbon, and Lime Spray Dryer Flue Gas
Desulfurization

Emission Point: 141

Equipment Location: 2115 Navajo Road
Council Bluffs, IA 51501

Plant Number: 78-01-026

Permit No.	Proj. No.	Description	Date	Testing
03-A-425-P	02-528	Original permit.	6/17/03	Yes

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

PERMIT CONDITIONS

The owner or operator of the facility shall assure that the installation, operation, and maintenance of this equipment is in compliance with all of the following conditions.

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 20-31; 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.

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 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. In such case, a supplemental permit shall be required prior to the initiation of construction of additional control equipment or equipment modifications needed to meet the standards.

This permit is for the construction and operation of the 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 emission unit, control equipment or emission point without the required revisions to this permit.

3. Construction

This permit shall become void if construction on the proposed project has not been initiated within eighteen (18) months after the date of the issuance of this permit and completed within forty-eight (48) months after the date of the issuance of this permit.

It shall be the responsibility of the owner 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. A supplement to this permit shall be obtained if the owner proposes changes to the final submitted plans and specifications.

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 31.

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*".

6. Disposal of Contaminants

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

7. 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.

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;

8. Notification, Reporting and Recordkeeping (Continued)

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 DNR with the following reports:

1. Oral excess emissions reports, in accordance with 567 IAC 24.1;
2. Indicator opacity reports in accordance with Opacity Policy 3-b-08 (See footnote 1, Permit Condition 10);
3. A written compliance demonstration report for each compliance testing event, whether successful or not, postmarked not later than forty-five (45) days 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;
4. 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 addresses:

Mr. David Phelps
Construction Permit Supervisor
Air Quality Bureau
Iowa Department of Natural Resources
7900 Hickman Road, Suite 1
Urbandale, IA 50322
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
Urbandale, Iowa 50322
Telephone: (515) 242-6001
FAX: (515) 242-5127

E. The owner shall send reports and notifications to:

Mr. Chuck Corell Compliance Unit Supervisor Air Quality Bureau Iowa Department of Natural Resources 7900 Hickman Road, Suite 1 Urbandale, IA 50322 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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- 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.
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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 ¹	Additional Limits
State Particulate Matter (PM)	NA	0.027 lb/MMBTU ²
PM ₁₀	NA	0.025 lb/MMBTU ²
Opacity ³	NA	5% ⁴
Sulfur Dioxide (SO ₂) ³	3,362	0.1 lb/MMBTU ⁵
Nitrogen Oxides (NO _x) ³	2,353	0.07 lb/MMBTU ⁵
Volatile Organic Compounds	121	0.0036 lb/MMBTU ²
Carbon Monoxide (CO) ³	5,177	0.154 lb/MMBTU ⁶
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 ₂ SO ₄)	NA	0.00421 lb/MMBTU

¹ Standard is a 12-month rolling total.

² Standard is expressed as the average of 3 runs.

³ Compliance with the emission standards shall be demonstrated through the use of Continuous Emission Monitoring Systems (CEMS).

⁴ Standard is a 1-hr average.

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

⁶ Standard is a 1 calendar day average.

10b. 112g Emission Limits

Pollutant	Lb/MMBTU
Mercury	1.7 X 10 ⁻⁶ (1)
Hydrogen Chloride (HCl)	0.0029 (1)
Total Selected Metals (TSM) ²	1.04 X 10 ⁻⁴ (1)
Federal PM ³	0.018 (1)
CO ⁴	0.154 (5)

¹ Standard is expressed as the average of 3 runs.

² Total Selected Metals (TSM) means the combination of the following metallic HAP: arsenic, beryllium, cadmium, chromium, lead, manganese, nickel, and selenium.

³ The federal particulate matter standard listed is a surrogate to show continual compliance with the total selected metals standard.

⁴ Compliance with the emission standards shall be demonstrated through the use of a CEMS.

⁵ Standard is a 1 calendar day average.

10c. Other Emission Limits

Pollutant	lb/hr	Tons/Yr ¹	Additional Limits	Reference (567 IAC)
Federal PM	NA	NA	13 ng/J heat input ²	23.1(2)"z" ³
PM ₁₀	195.1 ^{4, 5}	NA	NA	NAAQS
Opacity ⁶	NA	NA	20% ⁷	23.1(2)"z" ³
SO ₂ ⁶	921.0 ^{4, 8}	NA	520 ng/J heat input ⁹	23.1(2)"z" ³
NO _x ⁶	614.0 ^{10, 11}	NA	200 ng/J gross energy output ¹²	23.1(2)"z" ³
VOC	NA	NA	NA	NA
CO ⁶	1,966.0 ^{10, 13}	NA	NA	NAAQS
Pb	0.20 ^{5, 10}	NA	NA	NAAQS

¹ Standard is a 12-month rolling total.

² 13 ng/J = 0.03 lb/MMBTU.

³ IAC reference to NSPS Subpart Da (Standards of Performance for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978). See also 40 CFR §60.40a – 40 CFR §60.49a.

⁴ Emission rate used to demonstrate no exceedences of the National Ambient Air Quality Standards (NAAQS) or of the increment.

⁵ Standard is expressed as the average of three (3) runs

⁶ Compliance with the emission standards shall be demonstrated through the use of a CEMS.

⁷ Opacity shall not exceed 20% (6-minute average), except for one (1) 6-minute period per hour of not more than 27% opacity.

⁸ Standard is expressed as a three (3) hour average.

⁹ 520 ng/J = 1.20 lb/MMBTU. Compliance with this standard is determined on a 30-day rolling average basis. See permit Condition 14.E.

¹⁰ Emission rate used to demonstrate no exceedences of the NAAQS.

¹¹ Standard is expressed as a calendar month average.

¹² 200 ng/J = 1.6 lb/megawatt-hour (gross). Compliance with this standard is determined on a 30-day rolling average basis.

¹³ 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)	550
Discharge Style	Unobstructed vertical
Stack Opening, (inches, dia.)	295.8
Exhaust Temperature (°F)	165
Exhaust Flowrate (scfm)	2,256,500

The temperature and flowrate is intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flowrate 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. Initial Performance Testing Requirements

Pollutant	Testing Required	Test Run Time	Test Method
Federal PM	Yes ¹	2 hours	40 CFR 60, Appendix A, Method 5
State PM	Yes	2 hours	Iowa Compliance Sampling Manual
PM ₁₀	Yes	3 hours	40 CFR 51, Appendix M, 201A with 202
Opacity	Yes ^{1,2}	1 hour	40 CFR 60, Appendix A, Method 9
SO ₂	Yes ^{1,2}	1 hour	40 CFR 60, Appendix A, Method 6C
NO _x	Yes ^{1,2}	1 hour	40 CFR 60, Appendix A, Method 7E
VOC	Yes	1 hour	40 CFR 60, Appendix A, Method 25A
CO	Yes ^{2,3}	1 hour	40 CFR 60, Appendix A, Method 10
Pb	Yes	1 hour	40 CFR 60, Appendix A, Method 12
F	Yes	2 hours	40 CFR 60, Appendix A, Method 13A
TRS	Yes	1 hour	40 CFR 60, Appendix A, Method 16B
H ₂ SO ₄	Yes	1 hour	40 CFR 60, Appendix A, Method 8
Mercury	Yes	1 hour	Draft ASTM Z65907
HCl	Yes	1 hour	40 CFR 60, Appendix A, Method 26
TSM ⁴	Yes	1 hour	40 CFR 60, Appendix A, Method 29

¹ See NSPS Subpart Da (40 CFR §60.40a – 40 CFR §60.49a) for initial performance testing requirements.

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

³ The CO compliance tests shall be conducted under the same operating and combustion conditions as the NO_x compliance tests. Compliance with the NO_x BACT emission limit shall take preference if difficulties are encountered in achieving simultaneous compliance with these BACT emission limits. If such difficulties are encountered, the owner may subsequently request a revision of the CO BACT limit.

⁴ Total Selected Metals (TSM) means the combination of the following metallic HAP: arsenic, beryllium, cadmium, chromium, lead, manganese, nickel, and selenium.

If specified above, 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. 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 DNR. Unless otherwise specified by the DNR, each test shall consist of three separate runs. The arithmetic mean of three acceptable test runs shall apply for compliance, unless otherwise indicated by the DNR. The test methods and run times to be used are those stated above unless otherwise approved by the DNR.

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 DNR 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 DNR shall reserve the right to impose additional, different, or more detailed testing requirements.

13. NSPS, NESHAP, and Acid Rain 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 §60.40a – 40 CFR §60.49a) 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 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). CBEC Boiler 4 will be subject to the SO₂ allowance allocation, NO_x emission limitations, and monitoring provisions of the federal acid rain program.

14. Operating Limits

Operating limits for this permit shall be:

- A. CBEC Boiler 4 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 §60.42a(a)(2), particulate matter (federal) emissions shall not exceed 1% of the potential combustion concentration (99% reduction) when combusting coal.
- D. Per 40 CFR §60.43a(a)(1) and 40 CFR §60.43a(a)(2), sulfur dioxide emissions shall not exceed
 - (1) 520 ng/J (0.60 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.
- E. Per 40 CFR §60.46a(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

14. Operating Limits (Continued)

- (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 1.0 lbs of lime/lb of inlet SO₂ based on 90% available CaO in the lime.
- H. The minimum ammonia feed rate of the Selective Catalytic Reduction (SCR) system shall be 0.43 lbs of urea/lb of inlet SCR NO_x.
- I. The minimum activated carbon feed rate shall be 10 pounds per million cubic feet of exhaust gas or a rate specified for one of the trials of the optimization study required under condition M of this section. Deviation from the minimum 10 pounds per million cubic feet of exhaust gas shall only occur for the duration of a given trial. At the end of each trial, the injection rate must be returned to a minimum of 10 pounds per million cubic feet.
- J. 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 8.2 g/m². The silt content shall be tested once per month for the first year of operation of Unit 4. After the first year of testing the data shall be analyzed to determine whether or not further testing is required.
 - (3) The maximum number of trucks per day associated with Unit 4 shall not exceed 46 trucks per day.
 - (4) In order to protect the NAAQS the maximum number of trucks associated with Units 1, 2, and 3 shall not exceed 18 trucks per day.
 - (5) For paved roads:
 - (i) Fugitive emissions of paved haul roads shall be controlled to an effective control efficiency of 80% by water flushing followed by sweeping. Water flushing followed by sweeping and the record keeping requirements described Condition 15.T. shall begin at the same time as the startup of Boiler 4. The control efficiency of 80% shall be achieved 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 35⁰ F (1.7⁰ 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.

14. Operating Limits (Continued)

- (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.
 - (6) 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.T. 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 35⁰ F (1.7⁰ 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.
 - K. 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) Stack 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.U. 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 35⁰ F (1.7⁰ 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) 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.U. 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^o F (1.7^o 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) 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.U. 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^o F (1.7^o 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.U. 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^o F (1.7^o 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)

- L. 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.V. 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° F (1.7° 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.
 - (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.V. 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° F (1.7° 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) Rail unloading coal stockout pile:
 - (i) The size of the inactive 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.V. 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° F (1.7° 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.
- M. Optimization studies are required for the control of SO₂, NO_x, and Hg. These studies shall evaluate the affects of increased activated carbon injection, increased injection of slurry in the spray dryer absorber, and the optimization of the operation of the SCR unit. The following conditions shall be met for the studies:
 - (1) Prior to the initiation of the studies, a protocol for each study shall be developed and approved by the Department.
 - (2) During each trial, the emissions of the individual pollutant shall be measured.
 - (3) For the mercury study the following shall be collected:
 - (i) Data concerning the mercury content of the coal.
 - (ii) Data on the coal consumption rate.
 - (iii) The mercury content of the bottom ash.
 - (iv) The generation rate of the bottom ash shall be collected.
 - (4) The emission data during the trials shall be collected using either three (3) stack test runs or CEMS required by Condition 16 of this permit. All stack testing done for this optimization study shall be coordinated with the Department.
 - (5) The studies shall be conducted in a manner to collect a minimum amount of data representative of the variability of coal used by the facility. The studies shall be completed within nine (9) months of the completion of all initial compliance tests.
 - (6) A report summarizing the results of individual study shall be submitted to the Department within forty-five (45) days after the completion of the individual optimization study. This report shall include all data necessary to confirm the emission rates measured during each trial. This permit shall be reopened and the permit limits adjusted if the information in the report shows an amendment is necessary.
 - (7) Exceedances of any emission limit that occur during a trial of this optimization study is not a violation of the emission limit set forth in this permit as long as the owner or operator maintains and operates the equipment and control equipment at all times in a manner consistent with good practice for minimizing emissions. While not conducting a trial of this optimization study, the control equipment must be operated in a manner consistent with the operational limits outlined in this permit.

14. Operating Limits (Continued)

- N. The facility (plant number 78-01-026) shall conduct preconstruction ambient monitoring for PM₁₀. The following conditions shall apply to these preconstruction monitoring requirements:
- (1) The facility (plant number 78-01-026) shall submit to the Department a protocol for preconstruction monitoring for each PM₁₀ ninety (90) days after the issuance of this permit. The protocols shall include:
 - (i) Monitor locations.
 - (ii) Number of monitors.
 - (iii) Duration of monitoring.
 - (iv) Other data collection specific considerations.All of these requirements shall meet EPA's Ambient Monitoring Guidelines for Prevention of Significant Deterioration (PSD).
 - (2) Preconstruction monitoring for PM₁₀ shall start within ninety (90) days of the Department's acceptance of the protocol.
 - (3) Preconstruction monitoring for PM₁₀ shall be conducted for a minimum of one (1) year.
- O. The facility (plant number 78-01-026) shall conduct post construction ambient monitoring for PM₁₀ and SO₂. The following conditions shall apply to these post construction monitoring requirements:
- (4) The facility (plant number 78-01-026) shall submit to the Department a protocol for post construction monitoring for each pollutant (PM₁₀ & SO₂) ninety (90) days prior to the completion of construction for CBEC Boiler 4. The protocols shall include:
 - (v) Monitor locations.
 - (vi) Number of monitors.
 - (vii) Duration of monitoring.
 - (viii) Other data collection specific considerations.All of these requirements shall meet EPA's Ambient Monitoring Guidelines for Prevention of Significant Deterioration (PSD).
 - (5) Post construction monitoring for both pollutants shall start within ninety (90) days of CBEC Boiler 4 reaching maximum capacity.
 - (6) Post construction monitoring for both pollutants shall be conducted for a minimum of one (1) year.
- P. A compliance test for mercury must be conducted once annually.
- (1) Stack test must be performed according to method outlined in section 12 of this permit.
 - (2) A test report must be submitted to the Department according to the schedule outlined in section 8 of this permit.
 - (3) Testing must be completed once every calendar year with a minimum of nine months between each test.

14. Operating Limits (Continued)

- Q. A compliance test for hydrogen chloride must be conducted once annually.
- (1) Stack test must be performed according to method outlined in section 12 of this permit.
 - (2) A test report must be submitted to the Department according to the schedule outlined in section 8 of this permit.
 - (3) Testing must be completed once every calendar year with a minimum of nine months between each test.
 - (4) During each compliance test, the sorbent injection rate to the spray dryer must be recorded every 15 minutes during the entire period of the three-run test.
 - (5) The average spray dryer sorbent injection rate for each of the three-run test must be computed by averaging all of the 15-minute readings taken during the test run.
- R. A compliance test for federal particulate matter must be conducted once annually.
- (1) Stack test must be performed according to method outlined in section 12 of this permit.
 - (2) A test report must be submitted to the Department according to the schedule outlined in section 8 of this permit.
 - (3) Testing must be completed once every calendar year with a minimum of nine months between each test.
- S. The 3-hour block average spray dryer sorbent injection rate must be maintained at or above the 3-hour average observed during the most recent hydrogen chloride compliance test.
- T. A bag leak detection system must be installed to meet the following criteria:
- (1) At least one detector must be located in 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.
- U. The facility (plant number 78-01-026) shall submit all final plans and specifications for this emission unit and its respective control equipment to the Department within thirty (30) days of the start of construction. These final plans and specifications will be made available in the Records Center of the Air Quality Bureau.
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15. Operating Condition Monitoring

All records as required by this permit shall be kept for a minimum of five (5) years. The most recent two (2) years shall be maintained on-site and shall be available for inspection by the DNR. The remaining three (3) years, the records may be maintained off site. 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 §60.49a(a), the performance test data from the initial performance test and from the performance evaluation of the continuous monitors (including the transmissometer) for NO_x, SO₂, and PM emissions shall be submitted to the Administrator.
- C. Per 40 CFR §60.49a(b), the following information for NO_x and SO₂ shall be reported to the Administrator for each 24-hr period:
 - (1) Calendar date.
 - (2) The average sulfur dioxide and nitrogen oxide emission rates (ng/J or lb/million Btu) for each 30 successive boiler operating days, ending with the last 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 30 successive boiler operating days, ending with the last 30-day period in the quarter; reasons for non-compliance with the standard; and, description of corrective actions taken.
 - (4) Identification of the boiler operating days for which pollutant or diluent data have not been obtained by an approved method for at least 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_x only), emergency conditions (SO₂ 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. If the minimum quantity of emission data as required by 40 CFR §60.47a is not obtained for any 30 successive boiler operating days, the following information obtained under the requirements of 40 CFR §60.46a(h) shall be reported to the Administrator for that 30-day period:
 - (1) The number of hourly averages available for outlet emission rates (n_o) and inlet emission rates (n_i) as applicable.
 - (2) The standard deviation of hourly averages for outlet emission rates (s_o) and inlet emission rates (s_i) as applicable.
 - (3) The lower confidence limit for the mean outlet emission rate (E_o^*) and the upper confidence limit for the mean inlet emission rate (E_i^*) as applicable.
 - (4) The applicable potential combustion concentration.
 - (5) The ratio of the upper confidence limit for the mean outlet emission rate (E_o^*) and the allowable emission rate (E_{std}) as applicable.

15. Operating Condition Monitoring (Continued)

- E. If any standards under 40 CFR §60.43a 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 § 60.46a(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. If fuel pretreatment credit toward the sulfur dioxide emission standard under 40 CFR §60.43a 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 §60.48a 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. For 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.
- 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. 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 §60.42a(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.

15. Operating Condition Monitoring (Continued)

- J. The owner or operator of an affected facility may submit electronic quarterly reports for SO₂ and/or NO_x and/or opacity in lieu of submitting the written reports required under 40 CFR §60.49a(b) and 40 CFR §60.49a(h). The format of each quarterly electronic report shall be coordinated with the permitting authority. The electronic report(s) shall be submitted no later than 30 days after the end of the calendar quarter and shall be accompanied by a certification statement from the owner or operator, indicating whether compliance with the applicable emission standards and minimum data requirements of this subpart was achieved during the reporting period. Before submitting reports in the electronic format, the owner or operator shall coordinate with the permitting authority to obtain their agreement to submit reports in this alternative format.
- K. The sorbent feed rate of the Flue Gas Desulfurization System (in lb/hr).
- L. The urea feed rate of the SCR system (in lb/hr)
- M. The following information must be kept concerning the activated carbon injection system.
 - 1. A continuous record of the activated carbon feed rate in pounds per million cubic feet of exhaust gas.
 - 2. A copy of the approved optimization protocol.
 - 3. A record of the time each trial of the optimization study begins and ends and enough information to identify which trial is being undertaken during that period.
- N. A copy of the final test results for each compliance test for hydrogen chloride shall be maintained.
- O. A copy of the final test results for each compliance test for federal particulate matter shall be maintained.
- P. A copy of the final test results for each compliance test for mercury shall be maintained.
- Q. All correspondence from the Department accepting the test results for hydrogen chloride, federal particulate matter and/or mercury shall be maintained.
- R. 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.
- S. At the end of each 3-hour block of time, the average spray dryer sorbent injection rate over the previous 3 hours shall be recorded.

15. Operating Condition Monitoring (Continued)

- T. A log showing the following for haul roads:
- (1) The silt content of the roads.
 - (2) The date and number of trucks associated with Unit 4.
 - (3) The date and number of trucks associated with Units 1, 2, and 3.
 - (4) Paved roads:
 - (i) Records of 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.
 - (ii) If water is not applied when scheduled then the records should so indicate and provide and explanation.
 - (5) 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/yd²),
 - 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.
- U. A log showing the following for the volume sources in 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/yd²),
 - 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)

(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/yd²),
- 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/yd²),
- 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/yd²),
- 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)

V. 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/yd²),
- 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/yd²),
- 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/yd²),
- 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.

16. Continuous Emission Monitoring

In accordance with 40 CFR §60.47a(a), the facility (plant number 78-01-026) shall install, calibrate, maintain, and operate a continuous monitoring system (CEMS) on EP 141, 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).

In accordance with 40 CFR §60.47a(b), the facility (plant number 78-01-026) shall install, calibrate, maintain, and operate a continuous monitoring system (CEMS) on EP 141, and record the output of the system, for measuring sulfur dioxide (SO₂) emissions, except where natural gas is the only fuel combusted, as follows:

- (1) SO₂ emissions are monitored at both the inlet and outlet of the SO₂ control device.
- (2) For a facility, which qualifies under the provisions of 40 CFR §60.43a(d), SO₂ emissions are only monitored as discharged to the atmosphere.
- (3) An "as fired" fuel monitoring system (upstream of coal pulverizers) meeting the requirements of Method 19 may be used to determine potential SO₂ emissions in place of a continuous SO₂ emission monitor at the inlet to the SO₂ control device as required under number (1) above.

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.

In accordance with 40 CFR §60.47a(c), the facility (plant number 78-01-026) shall install, calibrate, maintain, and operate a CEMS on EP 141, and record the output of the system, for measuring nitrogen oxides (NO_x) emissions discharged to the atmosphere. Or if the owner or operator has installed a NO_x emission rate CEMS to meet the requirements of 40 CFR 75 and is continuing to meet the ongoing requirements of Part 75, that CEMS may be used to meet the requirements of 40 CFR §60.47a(c), except that the owner or operator shall also meet the requirements of 40 CFR §60.49a. Data reported to meet the requirements of 40 CFR §60.49a shall not include data substituted using the missing data procedures in subpart D of Part 75, nor shall the data have been bias adjusted according to the procedures of Part 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.

In accordance with 40 CFR §60.47a(d), the facility (plant number 78-01-026) shall install, calibrate, maintain, and operate a CEMS on EP 141, and record the output of the system, for measuring the oxygen (O₂) or carbon dioxide (CO₂) content of the flue gases at each location where SO₂ or NO_x emissions are monitored.

In accordance with 40 CFR §60.47a(e), the CEMS required for SO₂, NO_x, and either O₂ or CO₂ shall be operated and 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)

In accordance with 40 CFR §60.47a(f), the facility (plant number 78-01-026) shall obtain emission data for at least 18 hours in at least 22 out of 30 successive boiler operating days. If this minimum data requirement cannot be met with a CEMS, the owner or operator shall supplement emission data with other monitoring systems approved by the Administrator or the reference methods and procedures as described in 40 CFR §60.47a(h). When it becomes necessary to supplement continuous monitoring data requirements, the owner or operator shall use the following reference methods and procedures:

- (1) Method 6 shall be used to determine the SO₂ concentration at the same location as the SO₂ 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) Method 7 shall be used to determine the NO_x concentration at the same location as the NO_x 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 Method 3B shall be used to determine the O₂ or CO₂ concentration at the same location as the O₂ or CO₂ monitor. Samples shall be taken for at least 30 minutes in each hour. Each sample represents a 1-hour average.
- (4) The procedures in Method 19 shall be used to compute each 1-hour average concentration in ng/J (1b/million Btu) heat input.

The owner or operator may use the following as alternatives to the reference methods and procedures specified:

- (1) For Method 6, Method 6A or 6B (whenever Methods 6 and 3 or 3B data are used) or 6C may be used. Each Method 6B sample obtained over 24 hours represents 24 1-hour averages.
- (2) For 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 Method 3, Method 3A or 3B may be used if the sampling time is 1 hour.
- (4) For Method 3B, Method 3A may be used.

The 1-hour averages required under 40 CFR §60.13(h) are expressed in ng/J (lb/million Btu) heat input and used to calculate the average emission rates under 40 CFR §60.46a. The 1-hour averages are calculated using the data points required under 40 CFR §60.13(b). At least two data points must be used to calculate the 1-hour averages.

Per 40 CFR §60.47(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 O₂, SO₂, and NO_x concentrations, respectively.
- (2) SO₂ or NO_x (NO), as applicable, shall be used for preparing the calibration gas mixtures (in N₂, as applicable) under Performance Specification 2 of appendix B of Part 60.
- (3) For CBEC Boiler 4, the span value for a continuous monitoring system for measuring opacity is between 60 and 80 percent and for a continuous monitoring system measuring NO_x is 1,000 ppm.
- (4) The span value of the sulfur dioxide continuous monitoring system at the inlet to the sulfur dioxide control device is 125 percent of the maximum estimated hourly potential emissions of the fuel fired, and the outlet of the sulfur dioxide control device is 50 percent of maximum estimated hourly potential emissions of the fuel fired.

16. Continuous Emission Monitoring (Continued)

Acceptable alternative methods and procedures are:

- (1) For Method 6, Method 6A or 6B (whenever Methods 6 and 3 or 3B data are used) or 6C may be used. Each Method 6B sample obtained over 24 hours represents 24 1-hour averages. If Method 6A or 6B is used under 40 CFR §60.47a(i), the conditions under 40 CFR §60.46(d)(1) apply; these conditions do not apply under 40 CFR §60.47a(h).
- (2) For 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 Method 3, Method 3A or 3B may be used if the sampling time is 1 hour.
- (4) For Method 3B, Method 3A may be used.

Per 40 CFR §60.47a(k), 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 §60.44a(d)(1).

Per 40 CFR §60.47a(l), the owner or operator demonstrating compliance with the output-based standard under 40 CFR §60.44a(d)(1) shall install, certify, operate, and maintain a continuous flow monitoring system meeting the requirements of Performance Specification 6 of Appendix B and Procedure 1 of Appendix F. In addition, the owner or operator shall record the output of the system, for measuring the flow of exhaust gases discharged to the atmosphere. Alternatively, data from a continuous flow monitoring system certified according to the requirements of 40 CFR §75.20, meeting the applicable quality control and quality assurance requirements of 40 CFR §75.21, and validated according to 40 CFR §75.23, may be used.

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 (plant number 78-01-026) shall install, calibrate, maintain, and operate a CEMS on EP 141 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.

Compliance with the non-NSPS opacity, SO₂, and NO_x emission standards of this permit shall be demonstrated through the use of the monitors required by NSPS Subpart Da. The following conditions shall apply to all CEMS for non-NSPS opacity, SO₂, NO_x, and CO emission standards:

- (1) The CEMS required by this permit shall be operated and data recorded during all periods of operation of CBEC Boiler 4 except for CEM breakdowns and repairs. Data is recorded during calibration checks, and zero and span adjustments.
- (2) The 1-hour average SO₂, NO_x, 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 (NO_x, SO₂, or CO), the owner or operator shall substitute data by:
 - A. 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:
 - i) For the missing data period less than or equal to 24 hours, substitute the average of the hourly concentrations recorded by an pollutant concentration monitor for the hour before and the hour after the missing data period.
 - ii) For a missing data period greater than 24 hours, substitute the greater of:
 - (a) The 90th percentile hourly concentration recorded by a pollutant concentration monitor during the previous 720 quality-assured monitor operating hours; or
 - (b) The average of the hourly concentrations recorded by a pollutant concentration monitor for the hour before and the hour after the missing data period.

16. Continuous Emission Monitoring (Continued)

- B. 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:
- i) 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.
 - ii) For the missing data period of more than 8 hours, substitute the greater of:
 - (a) The 95th percentile hourly pollutant concentration recorded by a pollutant concentration monitor during the previous 720 quality-assured monitor operating hours; or
 - (b) The average of the hourly concentrations recorded by a pollutant concentration monitor for the hour before and the hour after the missing data period.
- C. 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.

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.

17. Notice of MACT Approval Information

Equipment Location:
2115 Navajo Road
Council Bluffs, IA 51501

Latitude - Longitude:
41° 10' 50" North
95° 50' 16" West

Description of project:
This project consists of the construction of a new electric utility steam-generating unit and the ancillary equipment including coal handling equipment, an auxiliary boiler, an emergency generator, and a fire pump.

Affected sources and source category:
CBEC Unit #4 - Electric Utility Steam Generating Unit
Auxiliary Boiler - Industrial/Commercial/Institutional Boilers and Process Heaters
Emergency Generator - Reciprocating Internal Combustion Engine
Fire Pump - Reciprocating Internal Combustion Engine

Sources not affected - rationale for exclusion
CBEC Unit #1 - existing unit, no reconstruction
CBEC Unit #2 - existing unit, no reconstruction
CBEC Unit #3 - existing unit, no reconstruction

Expected commencement date for construction:
June 2003

Expected completion date for construction:
October 2006

Anticipated date of start-up for constructed equipment:
October 2006

17. Notice of MACT Approval Information (Continued)

Hazardous Air Pollutants potentially emitted from this source:

Acid Gases:

Hydrogen chloride
Hydrogen Fluoride

Metals compounds:

Antimony compounds
Arsenic compounds
Beryllium compounds
Cadmium compounds
Chromium compounds
Cobalt compounds
Lead compounds
Mercury compounds
Manganese compounds
Nickel compounds
Selenium compounds

Organic HAP:

Acetaldehyde
Acetophenone
Acrolein
Benzene
Benzyl chloride
Bis(2-ethylhexyl)phthalate (DEHP)
Bromoform
Carbon disulfide
2-Chloroacetophenone
Chlorobenzene

Organic HAP (continued):

Chloroform
Cumene
Cyanide
2,4-Dinitrotoluene
Dimethyl sulfate
Ethyl benzene
Ethyl chloride
Ethylene dichloride
Ethylene dibromide
Formaldehyde
Hexane
Isophorone

Methyl bromide

Methyl chloride
Methyl ethyl ketone
Methyl hydrazine
Methyl methacrylate
Methyl tert butyl ether
Methylene chloride
Phenol
Propionaldehyde
Tetrachloroethylene
Toluene
1,1,1 trichloroethane
Styrene
Xylene
Vinyl acetate
Dioxans/furans

18. Descriptions 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
MMBtu	One million British thermal units
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NO _x	Nitrogen Oxides
Owner	The owner or authorized representative
Permit	This document including permit conditions and all submitted application materials
PM ₁₀	Particulate Matter equal to or less than 10 microns in aerodynamic diameter
scfm	Standard cubic feet per minute
SIP	State Implementation Plan
SO ₂	Sulfur Dioxide
VOC	Volatile Organic Compound

END OF PERMIT CONDITIONS