


Permit #: 28.0802-06
Effective Date: January 8, 2015
Expiration Date: January 8, 2020

The seal of the State of South Dakota is a large, circular emblem with a serrated outer edge. It features a central landscape scene with a river, trees, and a mountain range. The text "STATE OF SOUTH DAKOTA" is written in a large, serif font around the top inner edge of the seal. Below this, the motto "UNDER GOD THE PEOPLE RULE" is inscribed in a smaller font. At the bottom of the seal, the year "1889" is prominently displayed. The words "GREAT SEAL" are also visible on the left and right sides of the seal's inner border.

**SOUTH DAKOTA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
TITLE V AIR QUALITY OPERATING PERMIT**

A handwritten signature in black ink, appearing to read "S. M. Pirner".

**Steven M. Pirner, P.E., Secretary
Department of Environment and Natural Resources**

**Under the South Dakota Air Pollution
Control Regulations**

Pursuant to Chapter 34A-1-21 of the South Dakota Codified Laws and the Air Pollution Control Regulations of the State of South Dakota and in reliance on statements made by the owner designated below, a permit to construct and operate is hereby issued by the Secretary of the Department of Environment and Natural Resources. This permit authorizes such owner to construct and operate the permitted units at the location designated below and under the listed conditions:

A. Owner

1. Company name and address

Basin Electric Power Cooperative – Deer Creek Station
1717 East Interstate Avenue
Bismarck, North Dakota 58503-0654

2. Actual Source Location and Mailing Address if Different from Above

6 miles southeast of White, South Dakota

Section 25, T111N, R48W, E1/2 of the NW1/4
Brookings County, South Dakota

3. Permit Contact

Erin Fox Dukart, Environmental Compliance Coordinator
(701) 557-5557

4. Facility Contact

Steve Smokey, Environmental Coordinator
(701) 557-5180

5. Responsible Official

John W. Jacobs, Vice President of Operations
(701) 223-0441

B. Permit Revisions or Modifications

Not applicable

C. Type of Operation

Natural gas-fired combined cycle power generating plant

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1.0 Standard Conditions

1.1 Operation of source

In accordance with Administrative Rules of South Dakota (ARSD) 74:36:05:16.01(8), the owner or operator shall operate the units, controls, and processes as described in Table 1-1 in accordance with the statements, representations, and supporting data contained in the complete permit application received April 19, 2013, unless modified by the conditions of this permit. Except as otherwise provided herein, the control equipment shall be operated at all times in accordance with the manufacturer's specification and in a manner that achieves compliance with the conditions of this permit. The application consists of the application forms, supporting data, and supplementary correspondence. If the owner or operator becomes aware it failed to submit any relevant facts in a permit application or submitted incorrect information in an application, such information shall be promptly submitted.

Table 1-1 – Description of Permitted Units, Operations, and Processes

Unit	Description	Operating Rate ¹	Control Device
#1	2009 General Electric/Nooter Eriksen combustion turbine/heat recovery steam generator equipped with a duct burner and low-NO _x burners, Model 7FA, fired with natural gas	Combustion turbine – 1,713 million Btus per hour (Lower Heating Value) heat input	Selective catalytic reduction and catalytic oxidation
		Duct burner – 631 million Btus per hour (Lower Heating Value) heat input	
		300 megawatts	
#2	2010 Caterpillar 3512C emergency generator fueled with ultra-low sulfur distillate oil	1,500 kilowatts	Not applicable
#3	2010 John Deere/Clarke 613HFC48 fire water pump fueled with ultra-low sulfur distillate oil	460 horsepower	Not applicable

¹ – The operating rate is the nominal or manufacturer listed operating rate as given in the application and is descriptive only.

1.2 Duty to comply

In accordance with ARSD 74:36:05:16.01(12), the owner or operator shall comply with the conditions of this permit. An owner or operator who knowingly makes a false statement in any record or report or who falsifies, tampers with, or renders inaccurate, any monitoring device or method is in violation of this permit. A violation of any condition in this permit is grounds for enforcement, reopening this permit, permit termination, or denial of a permit renewal application. The owner or operator, in an enforcement action, cannot use the defense that it would have been necessary to cease or reduce the permitted activity to maintain compliance. The owner or operator shall provide any information requested by the Secretary to determine compliance or whether cause exists for reopening or terminating this permit.

1.3 Property rights or exclusive privileges

In accordance with ARSD 74:36:05:16.01(12), the State's issuance of this permit, adoption of design criteria, and approval of plans and specifications does not convey any property rights of any sort, any exclusive privileges, any authorization to damage, injure or use any private property, any authority to invade personal rights, any authority to violate federal, state or local laws or regulations, or any taking, condemnation or use of eminent domain against any property owned by third parties. The State does not warrant the owner's or operator's compliance with this permit, design criteria, approved plans and specifications, and operation under this permit, will not cause damage, injury or use of private property, an invasion of personal rights, or violation of federal, state or local laws or regulations. The owner or operator is solely and severally liable for all damage, injury or use of private property, invasion of personal rights, infringement of federal, state or local laws and regulations, or taking or condemnation of property owned by third parties, which may result from actions taken under the permit.

1.4 Penalty for violating a permit condition

In accordance with South Dakota Codified Laws (SDCL) 34A-1-39 and 34A-1-47, a violation of a permit condition may subject the owner or operator to civil or criminal prosecution, a state penalty of not more than \$10,000 per day per violation, injunctive action, administrative permit action, and other remedies as provided by law.

1.5 Inspection and entry

In accordance with SDCL 34A-1-41, the owner or operator shall allow the Secretary, upon presentation of credentials, to:

1. Enter the premises where a regulated activity is located or where pertinent records are stored;
2. Have access to and copy any records required under this permit;
3. Inspect operations regulated under this permit; and/or
4. Sample or monitor any substances or parameters for the purpose of assuring compliance.

1.6 Severability

In accordance with ARSD 74:36:05:16.01(11), any portion of this permit that is void or challenged shall not affect the validity of the remaining permit requirements.

1.7 Permit termination, modification, or revocation

In accordance with ARSD 74:36:05:46, the Secretary may recommend the Board of Minerals and Environment terminate, modify, or revoke this permit for violations of SDCL 34A-1 or the federal Clean Air Act or for nonpayment of any outstanding fee or enforcement penalty.

1.8 Credible evidence

In accordance with ARSD 74:36:13:07, credible evidence may be used for the purpose of establishing whether the owner or operator has violated or is in violation of this permit. Credible evidence may consist of the following:

1. Information from the use of the following methods is presumptively credible evidence of whether a violation has occurred:
 - a. A monitoring method approved pursuant to 40 CFR § 70.6(a)(3) and incorporated in this permit; or
 - b. Compliance methods specified in an applicable plan;
2. The following testing, monitoring, or information gathering methods are presumptively credible testing, monitoring, or information-gathering methods:
 - a. Any monitoring or testing methods approved in this permit, including those in 40 CFR Parts 51, 60, 61, and 75; or
 - b. Other testing, monitoring, or information-gathering methods that produce information comparable to that produced by any method in paragraph (1) or (2)(a).

2.0 Permit Fees

2.1 Annual air fee required

In accordance with ARSD 74:36:05:06.01, the owner or operator shall submit an annual administrative fee and an annual fee. The fee is based on actual emissions in accordance with ARSD 74:37.

2.2 Annual operational report

In accordance with ARSD 74:37:01:06, the Secretary will supply the owner or operator with an annual operational report in January of each year. The owner or operator shall complete and submit the operational report to the Secretary by March 1 of each year. The responsible official shall sign the operational report in the presence of a notary public.

2.3 Annual air fee

In accordance with ARSD 74:37:01:08, the Secretary will notify the owner or operator of the required annual air emission fee and administrative fee by June 1 of each year. The fees shall accrue on July 1 and are payable to the Department of Revenue by July 31 of each year.

3.0 Permit Amendments and Modifications

3.1 Permit flexibility

In accordance with ARSD 74:36:05:30, the owner or operator shall have the flexibility to make changes to the source during the term of this permit. The owner or operator shall provide the Secretary written notice at least seven days in advance of the proposed change (NOTE: The Secretary will forward a copy of the written notice to EPA). The written notice shall include a brief description of the change, the date on which the change is to occur, any change in emissions, the proposed changes to the permit, and whether the requested revisions are for an administrative permit amendment, minor permit amendment, or permit modification.

The Secretary will notify the owner or operator whether the change is an administrative permit amendment, a minor permit amendment, or a permit modification. A proposed change that is considered an administrative permit amendment or a minor permit amendment can be completed immediately after the Secretary receives the written notification. The owner or operator must comply with both the applicable requirements governing the change and the proposed permit terms and conditions until the Secretary takes final action on the proposed change.

A proposed change that is considered a modification cannot be implemented until the Secretary takes final action on the proposed change or the owner or operator was issued an air quality construction permit. Permit modifications are subject to the same procedural requirements, including public comment, as the original permit issuance except that the required review shall cover only the proposed changes.

3.2 Administrative permit amendment

In accordance with ARSD 74:36:05:33, the Secretary has 60 days from receipt of a written notice to verify the proposed change is an administrative permit amendment. As provided in ARSD 74:36:01:03, the Secretary considers a proposed change an administrative permit amendment if the proposed change accomplishes one of the following:

1. Corrects typographical errors;
2. Changes the name, address, or phone number of any person identified in this permit or provides a similar minor administrative change;
3. Requires more frequent monitoring or reporting;
4. The ownership or operational control changes and the Secretary determines no other change in this permit is necessary. However, the new owner must submit a certification of applicant form and a written statement specifying the date for transfer of operating permit responsibility, coverage, and liability; or
5. Any other changes the Secretary and the administrator of EPA determines to be similar to those requirements in this condition.

3.3 Minor permit amendment

In accordance with ARSD 74:36:05:38, the Secretary has 90 days from receipt of a written notice or 15 days after the end of EPA's 45-day review period, whichever is later, to take final action on a minor permit amendment. Final action consists of issuing or denying a minor permit amendment or determining the proposed change is a permit modification. As provided in ARSD 74:36:05:35, the Secretary considers a proposed change to be a minor permit amendment if the proposed change:

1. Does not violate any applicable requirements;
2. Does not involve significant changes to existing monitoring, reporting, or recordkeeping requirements;
3. Does not require or change a case-by-case determination of an emission limit or other standard, a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis; or

4. Does not seek to establish or change a permit term or condition for which the source has assumed to avoid an applicable requirement, a federally enforceable emission cap, or an alternative emission limit. An alternative emission limit is approved pursuant to regulations promulgated under section 112(i)(5) of the federal Clean Air Act.

3.4 Permit modification

In accordance with ARSD 74:36:05:39, an owner or operator may apply for a permit modification. A permit modification is defined in ARSD 74:36:01:10 as a physical change in or change in the operation of a source that results in at least one of the following:

1. An increase in the amount of an air pollutant emitted by the source or results in the emission of an air pollutant not previously emitted;
2. A significant change to existing monitoring, reporting, or recordkeeping requirements in the permit;
3. The change requires or changes a case-by-case determination of an emission limit or other standard, a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis; or
4. The change seeks to establish or change a permit term or condition for which there is a corresponding underlying applicable requirement that the source has assumed to avoid an applicable requirement, a federally enforceable emissions cap assumed to avoid classification as a modification under a provision of the Title I of the Clean Air Act, or an alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the Clean Air Act.

Permit modifications are subject to the same procedural requirements, including public comment, as the original permit issuance except the required review shall cover only the proposed changes.

3.5 Permit revision

In accordance with ARSD 74:36:05:40, the Secretary may reopen and revise this permit to meet requirements of SDCL 34A-1 or the federal Clean Air Act. In accordance with ARSD 74:36:05:41, the Secretary shall notify the owner or operator at least 30 days before reopening this permit. The 30-day period may be less in the case of an emergency.

3.6 Testing new fuels or raw materials

In accordance with ARSD 74:36:11:04, an owner or operator may request permission to test a new fuel or raw material to determine if it is compatible with existing equipment before requesting a permit amendment or modification. A complete test proposal shall consist of the following:

1. A written proposal describing the new fuel or raw material, operating parameters, and parameters that will be monitored and any testing associated with air pollutant emissions during the test;
2. An estimate of the type and amount of regulated air pollutant emissions resulting from the proposed change; and

3. The proposed schedule for conducting the test. In most cases the owner or operator will be allowed to test for a maximum of one week. A request for a test period longer than one week will need additional justification. A test period shall not exceed 180 days.

The Secretary shall approve, conditionally approve, or deny in writing the test proposal within 45 days after receiving a complete proposal. Approval conditions may include changing the test schedule or pollutant sampling and analysis methods. Pollutant sampling and analysis methods may include, but are not limited to performance testing, visible emission evaluation, fuel analysis, dispersion modeling, and monitoring of raw material or fuel rates.

If the Secretary determines the proposed change will result in an increase in the emission of a regulated air pollutant or result in the emission of an additional regulated air pollutant, the Secretary shall give public notice of the proposed test for 30 days. The Secretary shall consider all comments received during the 30-day public comment period before making a final decision on the test.

The Secretary will not approve a test if the test would cause or contribute to a violation of a national ambient air quality standard.

4.0 Permit Renewal

4.1 Permit effective

In accordance with ARSD 74:36:05:07, this permit shall expire five years from date of issuance unless reopened or terminated for cause.

4.2 Permit renewal

In accordance with ARSD 74:36:05:08, the owner or operator shall submit an application for a permit renewal at least 180 days before the date of permit expiration if the owner or operator wishes to continue to operate an activity regulated by this permit. The current permit shall not expire and shall remain in effect until the Secretary takes final action on the timely permit renewal application.

4.3 Permit expiration

In accordance with ARSD 74:36:05:28, permit expiration terminates the owner's or operator's right to operate any unit covered by this permit.

5.0 Recordkeeping and Reporting

5.1 Recordkeeping and reporting

In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall maintain all monitoring data, records, reports, and pertinent information specified by this permit for five years from the date of sample, measurement, report, or application unless otherwise specified in this permit. The records shall be maintained on site for the first two years and may be maintained off site for

the last three years. All records must be made available to the Secretary for inspection. All notifications and reports shall be submitted to the following address:

South Dakota Department of Environment and Natural Resources
PMB 2020, Air Quality Program
523 E. Capitol, Joe Foss Building
Pierre, SD 57501-3182

5.2 Signatory requirements

In accordance with ARSD 74:36:05:12 and 74:36:05:16.01, all applications, reports, or other information submitted to the Secretary shall be signed and certified by a responsible official or a duly authorized representative. A responsible official for a corporation is a responsible corporate officer and for a partnership or sole proprietorship is a general partner or the proprietor, respectively. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described above and submitted to the Secretary; and
2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters.

The duly authorized representative must be designated prior to or together with any reports or information to be signed by a duly authorized representative. The responsible official shall notify the Secretary if an authorization is no longer accurate.

5.3 Certification statement

In accordance with ARSD 74:36:05:16.01(14)(a), all documents required by this permit, including application forms, reports, and compliance certification, must be certified by a responsible official or a duly authorized representative. The certification shall include the following statement:

“I certify that, based on information and belief formed after reasonable inquiry, the statements and information in this document and all attachments are true, accurate, and complete.”

5.4 Monitoring log

In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall maintain a monitoring log. The monitoring log shall contain the following information.

1. The following information shall be recorded for each visible emission reading required in permit condition 8.1 and 8.2:
 - a. Identify the unit and if it operates on a monthly, quarterly, semiannual, or annual basis;
 - b. The date and time the visible emission reading was performed;

- c. If visible emissions were observed;
 - d. Description of maintenance performed to eliminate visible emissions;
 - e. Visible emission evaluation if visible emissions are not eliminated; and
 - f. Signature of person performing visible emission reading and/or visible emission evaluation; and
2. The following information shall be recorded within two days of each emergency exceedance:
 - a. The date of the emergency exceedance and the date the emergency exceedance was reported to the Secretary;
 - b. The cause(s) of the emergency;
 - c. The reasonable steps taken to minimize the emissions during the emergency; and
 - d. A statement the permitted equipment was at the time being properly operated.

5.5 Annual compliance certification

In accordance with ARSD 74:36:05:16.01(14), the owner or operator shall submit an annual compliance certification letter to the Secretary by March 1 of each year this permit is in effect (NOTE: The Secretary will forward a copy of the certification letter to EPA). The certification shall contain the following information:

1. Methods used to determine compliance, including: monitoring, recordkeeping, performance testing and reporting requirements;
2. The source is in compliance and will continue to demonstrate compliance with all applicable requirements;
3. In the event the source is in noncompliance, a compliance plan that indicates how the source has or will be brought into compliance; and
4. Certification statement required in permit condition 5.3.

5.6 Reporting permit violations

In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall report all permit violations. A permit violation should be reported as soon as possible, but no later than the first business day following the day the violation was discovered. The permit violation may be reported by telephone to the South Dakota Department of Environment and Natural Resources at (605) 773-3151 or by FAX at (605) 773-4068.

A written report shall be submitted within five days of discovering the permit violation. Upon prior approval from the Secretary, the submittal deadline for the written report may be extended up to 30 days. The written report shall contain:

1. A description of the permit violation and its cause(s);
2. The duration of the permit violation, including exact dates and times; and
3. The steps taken or planned to reduce, eliminate, and prevent reoccurrence of the permit violation.

6.0 Control of Regulated Air Pollutants

6.1 Visibility limit

In accordance with ARSD 74:36:12:01, the owner or operator may not discharge into the ambient air an air contaminant of a density equal to or greater than that designated as 20 percent opacity from any permitted unit, operation, or process listed in Table 1-1, unless otherwise specified in this permit. This provision does not apply when the presence of uncombined water is the only reason for failure to meet the requirement.

6.2 Visibility exceedances

In accordance with ARSD 74:36:12:02, an exceedance of the opacity limit in permit condition 6.1 is not considered a violation during brief periods of soot blowing, start-up, shutdown, or malfunctions. Malfunction means any sudden and unavoidable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. A failure caused entirely or in part by poor maintenance, careless operation, preventable equipment breakdown, or any other cause within the control of the owner or operator is not a malfunction and is considered a violation.

6.3 Air emission exceedances – emergency conditions

In accordance with ARSD 74:36:05:16.01(18), the Secretary will allow for an unavoidable emission exceedance of a technology-based emission limit if the exceedance is caused by an emergency condition and immediate action is taken by the owner or operator to restore the operations back to normal. An emergency condition is a situation arising from a sudden and reasonably unforeseeable event beyond the control of the owner or operator, including acts of God. An emergency shall not include an emission exceedance to the extent caused by improperly designed equipment, lack of preventive maintenance, careless or improper operation, or operator error. The owner or operator shall notify the Secretary within two working days of the incident and take all steps possible to eliminate the excess emissions. The notification must provide a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken. If the notification is submitted orally, a written report summarizing the information required by the notification shall be submitted and postmarked within 30 days of the oral notification

6.4 Circumvention not allowed

In accordance with ARSD 74:36:07:01, as referenced to 40 CFR § 60.12, the owner or operator may not install, use a device, or use a means that conceals or dilutes an air emission that would otherwise violate this permit. This includes operating a unit or control device that emits air pollutants from an opening other than the designed stack, vent, or equivalent opening.

6.5 Minimizing emissions

In accordance with ARSD 74:36:07:01, as referenced to 40 CFR § 60.11(d), the owner or operator shall at all times, when practicable, maintain and operate all permitted units in a manner that minimizes air pollution emissions

7.0 Performance Tests

7.1 Performance test may be required

In accordance with ARSD 74:36:11:02, the Secretary may request a performance test during the term of this permit. A performance test shall be conducted while operating the unit at or greater than 90 percent of its maximum design capacity, unless otherwise specified by the Secretary. A performance test conducted while operating less than 90 percent of its maximum design capacity will result in the operation being limited to the percent achieved during the performance test. The Secretary has the discretion to extend the deadline for completion of performance test required by the Secretary if circumstances reasonably warrant but will not extend the deadline past a federally required performance test deadline.

7.2 Test methods and procedures

In accordance with ARSD 74:36:11:01, the owner or operator shall conduct the performance test in accordance with 40 CFR Part 60, Appendix A, 40 CFR Part 63, Appendix A, and 40 CFR Part 51, Appendix M. The Secretary may approve an alternative method if a performance test specified in 40 CFR Part 60, Appendix A, 40 CFR Part 63, Appendix A, and 40 CFR Part 51, Appendix M is not federally applicable or federally required.

7.3 Representative performance test

In accordance with ARSD 74:36:07:01, as referenced to 40 CFR § 60.8(c), performance tests shall be conducted under such conditions as the Secretary shall specify to the owner or operator based on the representative performance of the unit being tested. The owner or operator shall make available to the Secretary such records as may be necessary to determine the conditions of the performance tests. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test nor shall emissions in excess of the level of the applicable emission limit during periods of startup, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in this permit.

7.4 Submittal of test plan

In accordance with ARSD 74:36:11:01, the owner or operator shall submit the proposed testing procedures to the Secretary at least 30 days prior to any performance test. The Secretary will notify the owner or operator if the proposed test procedures are approved or denied. If the proposed test procedures are denied, the Secretary will provide written notification outlining what needs to be completed for approval.

7.5 Notification of test

In accordance with ARSD 74:36:07:01, as referenced to 40 CFR § 60.8(d), the owner or operator shall notify the Secretary at least 30 days prior to the start of a performance test to afford the Secretary the opportunity to have an observer present. If there is a delay in conducting the scheduled performance test, the owner or operator shall notify the Secretary as soon as possible of any delay in the original test date, either by providing at least 7 days prior notice of the rescheduled date of the performance test, or by arranging a rescheduled date with the Secretary by mutual agreement.

7.6 Performance test report

In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall submit a performance test report to the Secretary within 60 days after completing the performance test or by a date designated by the Secretary. The performance test report shall contain the following information:

1. A brief description of the process and the air pollution control system being tested;
2. Sampling location description(s);
3. A description of sampling and analytical procedures and any modifications to standard procedures;
4. Test results represented in the same terminology as the permit limits;
5. Quality assurance procedures and results;
6. Records of operating conditions during the test necessary for demonstrating compliance with the permit limits, preparation of standards, and calibration procedures;
7. Raw data sheets for field sampling and field and laboratory analyses;
8. Documentation of calculations;
9. All data recorded and used to establish parameters for compliance monitoring; and
10. Any other information required by the test method.

8.0 Monitoring

8.1 Periodic opacity monitoring for units operating on a monthly or more frequent basis

In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall demonstrate compliance with the opacity limits in Chapter 6.0 on a periodic basis for the units identified in the monthly log required in permit condition 5.4 that operate on a monthly or more frequent basis. Periodic monitoring for units that operate on a monthly or more frequent basis shall be based on the following steps:

Step 1: Periodic monitoring shall consist of a visible emission reading. A visible emission reading shall consist of a visual survey of each unit over a two-minute period to identify if there are visible emissions. The visible emission reading must be conducted while the unit is in operation; but not during periods of startup, shutdown, or malfunctions. Visible emission readings shall be based on the following frequency:

- a. The owner or operator shall conduct a visible emission reading once per calendar month;
- b. If no visible emissions are observed from a unit in six consecutive monthly visible emission readings, the owner or operator may decrease the frequency of readings from monthly to semiannually for that unit; or
- c. If no visible emissions are observed from a unit in two consecutive semiannual visible emission readings, the owner or operator may decrease the frequency of testing of readings from semiannually to annually for that unit.

Step 2: If visible emissions are observed from a unit at any time other than periods of startup, shutdown, or malfunction, periodic monitoring shall consist of a visible emission test to determine if the unit is in compliance with the opacity limit specified in Chapter 6.0. The visible emission test shall be for at least six minutes and conducted in accordance with 40 CFR Part 60, Appendix A, Method 9. The visible emission test must be conducted while the unit is in operation; but not during periods of startup, shutdown, or malfunctions. Visible emission tests shall be based on the following frequency:

- a. The visible emission test must be conducted within one hour of witnessing a visible emission from a unit;
- b. If the visible emission test required in Step 2(a) results in an opacity value less than or equal to 50 percent of the opacity limit for the unit, the owner or operator shall perform a visible emission test once per month;
- c. If the opacity value of a visible emission test in Step 2(b) is less than five percent for three straight monthly tests, the owner or operator may revert back to monthly visible emission readings as required in Step 1;
- d. If the visible emission test required in Step 2(a) results in an opacity value greater than 50 percent of the opacity limit but less than the opacity limit, the owner or operator shall perform a visible emission test once per week; or
- e. If the visible emission test in Step 2(d) results in an opacity value less than or equal to 50 percent of the opacity limit for four straight weekly readings, the owner or operator may revert back to a monthly visible emission test as required in Step 2(b).

The person conducting the visible emission reading does not have to be certified in accordance with 40 CFR Part 60, Appendix A, Method 9. The person conducting the visible emission test must be certified in accordance with 40 CFR Part 60, Appendix A, Method 9. If a visible emission test is required before a person is certified in accordance with permit condition 8.3, the owner or operator shall notify the Secretary within 24 hours of observing the visible emissions to schedule a visible emission test performed by a state inspector.

8.2 Monitoring opacity limits for units operating periodically

In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall demonstrate compliance with the opacity limits in Chapter 6.0 for the units identified in the monthly log required in permit condition 5.4 that operate on a quarterly, semiannual, or annual basis.

Periodic monitoring shall be based on the following steps:

- Step 1:** For units that operate on a quarterly basis, monitoring shall consist of the following:
- a. Monitoring shall consist of a visible emission reading once per quarter. A visible emission reading shall consist of a visual survey of the unit over a two-minute period to identify if there are visible emissions. The visible emission reading must be conducted while the unit is in operation; but not during periods of startup, shutdown, or malfunctions; or
 - b. If visible emissions are observed from a unit at any time other than periods of startup, shutdown, or malfunction, the owner or operator shall conduct a visible emission test on that unit to determine if the unit is in compliance with the opacity

limit specified in Chapter 6.0. The visible emission test must be conducted within one hour of witnessing a visible emission from the unit. The visible emission test shall be for at least six minutes and conducted in accordance with 40 CFR Part 60, Appendix A, Method 9. The visible emission test must be conducted while the unit is in operation; but not during periods of startup, shutdown, or malfunctions.

Step 2: For units that operate on a semiannual or annual basis, monitoring shall consist of the following:

- a. Monitoring shall consist of a visible emission reading once per year. A visible emission reading shall consist of a visual survey of the unit over a two-minute period to identify if there are visible emissions. The visible emission reading must be conducted while the unit is in operation; but not during periods of startup, shutdown, or malfunctions;
- b. If visible emissions are observed from a unit at any time other than periods of startup, shutdown, or malfunction, the owner or operator shall conduct a visible emission test on that unit to determine if the unit is in compliance with the opacity limit specified in Chapter 6.0. The visible emission test must be conducted within one hour of witnessing a visible emission from the unit. The visible emission test shall be for at least six minutes and conducted in accordance with 40 CFR Part 60, Appendix A, Method 9. The visible emission test must be conducted while the unit is in operation; but not during periods of startup, shutdown, or malfunctions.

The person conducting the visible emission reading does not have to be certified in accordance with 40 CFR Part 60, Appendix A, Method 9. The person conducting the visible emission test must be certified in accordance with 40 CFR Part 60, Appendix A, Method 9. If a visible emission test is required before a person is certified in accordance with permit condition 8.3, the owner or operator shall notify the Secretary within 24 hours of observing the visible emissions to schedule a visible emission test performed by a state inspector.

8.3 Certified personnel – visible emission tests

In accordance with ARSD 74:36:13:07, within 180 days after permit issuance the owner or operator shall retain a person that is certified to perform a visible emission test in accordance with 40 CFR Part 60, Appendix A, Method 9. The owner or operator shall retain a certified person throughout the remaining term of this permit.

8.4 Monitoring sulfur content of distillate oil

In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall obtain a fuel supplier certification for each load of distillate oil (diesel) purchased or received. The fuel supplier certification shall include the following information:

1. The name of the oil supplier;
2. A statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil (diesel). Distillate oil (diesel) means fuel oil that complies with the specifications for fuel oil numbers 1 or 2. Residual oil means crude oil and is fuel oil that does not comply with the specifications under the definition of distillate oil and includes all fuel oil

- numbers 4, 5, and 6. Specifications for fuel oils are defined in the American Society for Testing and Materials in ASTM D396-78, "Standards Specifications for Fuel Oils"; and
3. A statement that the sulfur content of the oil does not exceed the sulfur requirement specified in permit condition 10.2.

In the case where a fuel supplier certification is not obtained, the owner or operator shall collect a grab sample from the storage tank within 30 days of receiving the shipment of distillate oil (diesel) but before another load is transferred into the storage tank. The grab sample shall be analyzed to determine the sulfur content of the distillate oil (diesel) in the storage tank. A copy of the results of the analysis shall be submitted with the quarterly report required in permit condition 9.16.

9.0 PSD Requirements

9.1 BACT limits for particulate matter

In accordance with ARSD 74:36:09:02, as referenced to 40 CFR § 52.21(j)(3), the owner or operator shall not allow the emissions of particulate matter 10 microns in diameter or less (PM10) in excess of the emission limits specified in Table 9-1 for the appropriate permitted unit, operation, and process.

Table 9-1 – PM10 BACT Emission Limits

Unit	Description	PM10 Emission Limit
#1	Combustion turbine/heat recovery steam generator	0.01 pounds per million Btus ¹ (filterable and condensable)
		18.6 pounds per hour ^{1,2} (filterable and condensable) – Without duct firing
		23.2 pounds per hour ^{1,2} (filterable and condensable) – With duct firing
		80 tons per 12-month rolling period ³
		Natural gas – see permit condition 9.4
#2	Emergency generator	New Source Performance Standard – see permit condition 10.1
#3	Fire water pump	New Source Performance Standard – see permit condition 11.1

¹ – Compliance with the emission limits is based on the average of three test runs based on the performance test procedures and requirements in Chapter 7.0.

² – Compliance with the emission limits during startup and shutdown are based on burning natural gas and implementing the startup, shutdown, and malfunction plan.

³ – Compliance with the emission limit includes all operations including startup and shutdown and is based on record keeping and reporting.

9.2 BACT limits for nitrogen oxide

In accordance with ARSD 74:36:09:02, as referenced to 40 CFR § 52.21(j)(3), the owner or operator shall not allow the emissions of nitrogen oxide in excess of the emission limits specified

in Table 9-2 for the appropriate permitted unit, operation, and process.

Table 9-2 – Nitrogen Oxide BACT Emission Limits

Unit	Description	Nitrogen Oxide Emission Limit
#1	Combustion turbine/heat recovery steam generator	3.0 parts per million by volume dry corrected to 15% oxygen ¹
		25.8 pounds per hour ¹
		328 pounds during a startup or shutdown period ²
		117 tons per 12-month rolling period ³
		Limited hours of operation – see permit condition 9.6
#2	Emergency generator	New Source Performance Standard – see permit condition 10.1
#3	Fire water pump	New Source Performance Standard – see permit condition 11.1

¹ – Compliance with the emission limit is based on a 3-hour average, excluding periods of startup, shutdown, and malfunctions using a continuous emission monitoring system that meets the procedures and requirements specified in permit condition 9-12 ;

² - Compliance with the emission limit is based on startup or shutdown period using a continuous emission monitoring system that meets the procedures and requirements specified in permit condition 9-12; and

³ - Compliance with the emission limit is based on a 12-month rolling period, including periods of startup and shutdown using a continuous emission monitoring system that meets the procedures and requirements specified in permit condition 9-12.

9.3 BACT limits for carbon monoxide

In accordance with ARSD 74:36:09:02, as referenced to 40 CFR § 52.21(j)(3), the owner or operator shall not allow the emissions of carbon monoxide in excess of the emission limits specified in Table 9-3 for the appropriate permitted unit, operation, and process.

Table 9-3 – Carbon Monoxide BACT Emission Limits

Unit	Description	Carbon Monoxide Emission Limit
#1	Combustion turbine/heat recovery steam generator	2.0 parts per million by volume dry corrected to 15% oxygen ¹
		10.5 pounds per hour ¹
		840 pounds during a startup or shutdown period ²
		243 tons per 12-month period ³
		Limited hours of operation – see permit condition 9.6
#2	Emergency generator	New Source Performance Standard – see permit condition 10.1
#3	Fire water pump	New Source Performance Standard – see permit condition 11.3

¹ – Compliance with the emission limit is based on a 3-hour average, excluding periods of startup, shutdown, and malfunctions, using a continuous emission monitoring system that meets the procedures and requirements specified in permit condition 9.13 .

² - Compliance with the emission limit is based on startup or shutdown period using a continuous emission monitoring system that meets the procedures and requirements specified in permit condition 9.13 ; and

³ - Compliance with the emission limit is based on a 12-month rolling period, including periods of startup and shutdown using a continuous emission monitoring system that meets the procedures and requirements specified in permit condition 9.13.

9.4 Pipeline natural gas requirement

In accordance with ARSD 74:36:09:02, as referenced to 40 CFR § 52.21(j)(3), the owner or operator shall not burn natural gas that does not meet the definition for pipeline natural gas as defined in 40 CFR § 72.2. Pipeline natural gas contains 0.5 grains or less of total sulfur per 100 standard cubic feet. Additionally, pipeline natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 950 and 1,100 Btus per standard cubic foot.

9.5 Sulfur content limit for distillate oil

In accordance with ARSD 74:36:09:02, as referenced to 40 CFR § 52.21(j)(3), the owner or operator shall not burn distillate oil with a sulfur content greater than 0.0015 percent sulfur by weight in Unit #2 and #3.

9.6 Combustion turbine startup and shutdown limit

In accordance with ARSD 74:36:09:02, as referenced to ARSD 74:36:05:16.01(8), the owner or operator shall limit the startup and shutdown operation of the combustion turbine/heat recovery steam generator to 708 hours per 12-month rolling period. Startup shall be defined as the first 300 minutes from initial combustion of the fuel in the combustion turbine or the time period from initial combustion of the fuel in the combustion turbine until the combustion turbine reaches Mode 6Q. Shutdown shall be defined as the last 300 minutes of operation of the combustion turbine or the time period from the combustion turbine falling below Mode 6Q until no more fuel is combusted in the combustion turbine, whichever is less.

During periods of startup and shutdown, the owner or operator shall implement the Startup, Shutdown, and Malfunction plan developed in accordance with permit condition 9-11. Nitrogen oxide emissions during startup shall not exceed 328 pounds per startup.

9.7 Emergency generator operational limit

In accordance with ARSD 74:36:09:02, as referenced to ARSD 74:36:05:16.01(8), the owner or operator shall purchase a 2010 model or newer emergency generator. The owner or operator shall limit the operation of the emergency generator to the time period of 11:00 am to 5:00 pm per day and shall not operate the emergency generator outside the time period of 11:00 am to 5:00 pm more than 7 days per 12-month rolling period. In addition, the owner or operator shall limit the operation of the emergency generator to less than 150 hours per 12-month rolling period.

9.8 Fire water pump operational limit

In accordance with ARSD 74:36:09:02, as referenced to ARSD 74:36:05:16.01(8), the owner or operator shall purchase a 2010 model or newer fire water pump. The owner or operator shall limit the operation of the fire water pump to less than 150 hours per 12-month rolling period. Operations during an emergency are not included in the number of hours per 12-month rolling period.

9.9 Compliance with BACT limits during startup, shutdown, and malfunction

In accordance with ARSD 74:36:09:02, as referenced to ARSD 74:36:05:16.01(8), the owner or operator shall utilize good work and maintenance practices and manufacturers' recommendations to minimize emissions during, and the frequency and duration of, startup, shutdown, and malfunction events for those units and pollutants that are not using a continuous emission monitoring system to demonstrate compliance. The owner or operator shall develop, maintain, and implement a Startup, Shutdown, and Malfunction plan for those units and pollutants that are not using a continuous emission monitoring system to demonstrate compliance. The Startup, Shutdown, and Malfunction plan shall describe, in detail, procedures for operating and maintaining those units and pollutants that are not using a continuous emission monitoring system to demonstrate compliance during periods of startup, shutdown, and malfunction; a program of corrective action for malfunctions; and recordkeeping requirements identifying that the procedures and corrective actions were completed.

9.10 Operation, maintenance, and monitoring plan

In accordance with ARSD 74:36:09:02, as referenced to ARSD 74:36:05:16.01(8), the owner or operator shall develop, maintain, and implement a written Operation, Maintenance, and Monitoring plan. Any changes to the plan must be submitted to the Secretary for review and approval. Pending approval by the Secretary of an amended plan, the owner or operator must comply with the provisions of the submitted plan. Each plan must contain the following information:

1. Process and control device parameters to be monitored to determine compliance, along with established operating limits or ranges, as applicable, for each emission unit;
2. A monitoring schedule for each emission unit;
3. Procedures for the proper operation and maintenance of each emission unit and each air pollution control device used to meet the applicable emission limits and operating limit in this permit;
4. Procedures for the proper installation, operation, and maintenance of monitoring devices or systems used to determine compliance including:
 - a. Calibration and certification of the accuracy of each monitoring device;
 - b. Performance and equipment specifications for the sample interface, parametric signal analyzer, and the data collection and reduction systems; and
 - c. Ongoing operation and maintenance procedures in accordance with the following requirements:
 - i. Maintain and operate each continuous emission monitoring system in a manner consistent with good air pollution control practices;
 - ii. Maintain and operate each continuous emission monitoring system as specified in this permit;
 - iii. Maintain the necessary parts for routine repairs of each continuous emission monitoring system;
 - iv. Install, operate, and the data verified prior to or in conjunction with conducting performance tests. The verification shall, at a minimum, include completion of the

- manufacturer's written specifications or recommendations for installation, operation, and calibration of the system; and
- v. Except for system breakdowns, out-of-control periods, repairs, maintenance periods, calibration checks, and zero (low-level) and high-level calibration drift adjustments, all continuous monitoring systems shall be in continuous operation.
5. Procedures for monitoring process and control device parameters;
 6. Corrective actions to be taken when process or operating parameters or add-on control device parameters deviate from the operating limits specified in this permit, including:
 - a. Procedures to determine and record the cause of a deviation or excursion, and the time the deviation or excursion began and ended; and
 - b. Procedures for recording the corrective action taken, the time corrective action was initiated, and the time and date the corrective action was completed; and
 7. A maintenance schedule for each emission unit and control device that is consistent with the manufacturer's instructions and recommendations for routine and long-term maintenance.

9.11 Startup, shutdown, and malfunction plan

In accordance with ARSD 74:36:09:02, as referenced to ARSD 74:36:05:16.01(8), the owner or operator shall develop a written Startup, Shutdown, and Malfunction plan that describes in detail the procedures for operating and maintaining the units identified in Table 1-1 during periods of startup, shutdown, and malfunctions. In addition, the plan shall identify a program of corrective action for a malfunction of the process, air pollution control, and monitoring equipment used to comply with the relevant standard. The Startup, Shutdown, and Malfunction plan does not need to address any scenario that would not cause an exceedance of an applicable emission limit. The Startup, Shutdown, and Malfunction plan shall:

1. Ensure at all times the owner or operator operates and maintains the units identified in Table 1-1 and the associated air pollution control and monitoring equipment, in a manner which satisfies the general duty to minimize emissions;
2. Ensure that the owner or operator is prepared to correct malfunctions as soon as practicable after their occurrence in order to minimize excess emissions; and
3. Reduce the reporting burden associated with periods of startup, shutdown, and malfunction (including corrective action taken to restore malfunctioning process and air pollution control equipment to its normal or usual manner of operation).

To satisfy this requirement, the owner or operator may use its standard operating procedures manual, an Occupational Safety and Health Administration (OSHA) plan, or another plan, provided the alternative plans meet all the requirements of this permit condition and are made available for inspection or submitted when requested by the Secretary.

The owner or operator shall make revisions to the Startup, Shutdown, and Malfunction plan, if it is determined that the plan does not address a startup, shutdown, or malfunction event that has occurred; fails to provide for the operation of a unit (including associated air pollution control and monitoring equipment) during a startup, shutdown, or malfunction event in a manner consistent with the general duty to minimize emissions; or does not provide adequate procedures

for correcting malfunctioning process and/or air pollution control and monitoring equipment as quickly as practicable. Revisions to the Startup, Shutdown, and Malfunction plan are not considered a permit revision.

9.12 Nitrogen oxide continuous emission monitoring system

In accordance with ARSD 74:36:07, ARSD 74:36:09 and ARSD 74:36:13, the owner or operator shall install, calibrate, maintain, and operate a continuous emission monitoring system for nitrogen oxide on Unit #1. The continuous emission monitoring system shall report the emission rates in pounds per million Btus and pounds per hour. The continuous emission monitoring system shall measure and record the emissions at all times, including periods of startup, shutdown, malfunctions or emergency conditions. Monitor downtime is allowed for system breakdowns, repairs, calibration checks, zero and span adjustments, and when Unit #1 is not in operation. The continuous emission monitoring system shall meet the performance specifications in 40 CFR Part 75, Appendix A, and the quality assurance requirements in 40 CFR Part 75, Appendix B.

9.13 Carbon monoxide continuous emission monitoring system

In accordance with ARSD 74:36:07, ARSD 74:36:09 and ARSD 74:36:13, the owner or operator shall install, calibrate, maintain, and operate a continuous emission monitoring system for carbon monoxide on Unit #1. The continuous emission monitoring system shall measure and record the emissions at all times, including periods of startup, shutdown, malfunctions or emergency conditions. Monitor downtime is allowed for system breakdowns, repairs, calibration checks, zero and span adjustments, and when Unit #1 is not in operation. The continuous emission monitoring system shall meet the performance specifications in 40 CFR Part 60, Appendix B and the quality assurance requirements in 40 CFR Part 60, Appendix F.

9.14 Daily log

In accordance with ARSD 74:36:09:02, as referenced to ARSD 74:36:05:16.01(9), the owner or operator must maintain a daily log. The daily log shall contain the following information:

1. Maintenance schedule for the air pollution control equipment specified in Table 1-1. At a minimum, the maintenance schedule shall meet the manufacturer's recommended schedule for maintenance. The following information shall be recorded for any maintenance performed:
 - a. Identify the unit;
 - b. The date and time maintenance was performed;
 - c. Description of the type of maintenance;
 - d. Reason for performing maintenance; and
 - e. Signature of person performing maintenance;
2. The amount of natural gas burned in the combustion turbine/heat recovery steam generator and the number of hours the unit operated with and without duct firing;
3. The number of hours and the time period(s) the emergency generator (Unit #2) operated. The hours of operation shall be identified as emergency and non-emergency operation; and
4. The number of hours the fire water pump (Unit #3) operated.

9.15 Startup, shutdown, and malfunction plan recordkeeping

In accordance with ARSD 74:36:09:02, as referenced to ARSD 74:36:05:16.01(8), the owner or operator shall maintain a copy of the current Startup, Shutdown, and Malfunction plan at the site and make the plan available upon request for inspection and copying by the Secretary. In addition, if the Startup, Shutdown, and Malfunction plan is subsequently revised, the owner or operator must maintain at the site each previous (i.e., superseded) version of the Startup, Shutdown, and Malfunction plan, and must make each previous version available for inspection and copying by the Secretary for a period of five years after revision of the plan. If at any time after adoption of a Startup, Shutdown, and Malfunction plan the owner or operator ceases operation or is otherwise no longer subject to this permit condition, the owner or operator must retain a copy of the most recent plan for five years from the date the owner or operator ceases operation or is no longer subject to this permit condition and must make the plan available upon request for inspection and copying by the Secretary. The owner or operator must maintain the following records during a startup, shutdown, or malfunction occurrence:

1. The occurrence and duration of each startup or shutdown;
2. The occurrence and duration of each malfunction of operation (e.g. process equipment), the required air pollution control, or the monitoring equipment;
3. Actions taken during periods of startup or shutdown when the actions taken are different from the procedures specified in the Startup, Shutdown, and Malfunction plan;
4. Actions taken during periods of a malfunction when the actions taken are different from the procedures specified in the Startup, Shutdown, and Malfunction plan; and
5. All information necessary, including actions taken, to demonstrate conformance with the Startup, Shutdown, and Malfunction plan.

9.16 PSD quarterly reports

In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall submit a quarterly report. The report shall contain the following information:

1. Name of the facility, permit number, reference to this permit condition, and identify the submittal as a quarterly report;
2. Calendar dates covered in the quarterly report;
3. A summary of the excess emissions as determined by the continuous emission monitoring systems:
 - a. The magnitude of the emissions that were greater than identified emission limit;
 - b. The date and duration of the excess emissions;
 - c. The causes of the excess emissions (startup/shutdown, control equipment problems, process problems, other known causes, or unknown causes); and
 - d. The percentage of time the excess emissions occurred during operation of the permitted unit;
4. The amount of time a continuous emission monitoring system was down due to monitoring equipment malfunction, non-monitoring malfunction, quality assurance calibrations, other known causes, or unknown causes;
5. The percentage of time a monitoring system was down while the permitted unit was in operation;

6. A summary of the amount of natural gas consumed in the combustion turbine/heat recovery steam generator and the number of hours the combustion turbine/heat recovery steam generator was operated with and without duct firing;
7. A statement that only pipeline natural gas is being burned in the combustion turbine/heat recovery steam generator and the inlet air heater and only ultra-low sulfur distillate oil is being burned in the emergency generator and fire water pump;
8. A summary of the number of days and the time period(s) of operation for each day the emergency generator operated during the month and the 12-month rolling total for each month in the reporting period;
9. A summary of the number of hours the fire water pump and inlet air heater operated during the month and the 12-month rolling total for each month in the reporting period; and
10. A statement that the owner or operator followed the procedures specified in the Startup, Shutdown, and Malfunction plan during a startup, shutdown or malfunction during the reporting period. If an action taken by the owner or operator during a startup, shutdown, or malfunction (including an action taken to correct a malfunction) is not consistent with the procedures specified in the Startup, Shutdown, and Malfunction plan, the following information shall be included in the quarterly report:
 - a. An explanation of the circumstances of the event;
 - b. The reasons for not following the Startup, Shutdown, and Malfunction plan;
 - c. A description of all excess emissions and/or parameter monitoring exceedances which are believed to have occurred or could have occurred in the case of malfunctions; and
 - d. Actions taken to minimize emissions.

The quarterly reports shall be postmarked no later than the 30th day following the end of each calendar quarter (i.e. January 30th, April 30th, July 30th, and October 30th).

10.0 NSPS Requirements – Emergency Engine

10.1 Emergency engine emission limits

In accordance with ARSD 74:36:07:88, as referenced to 40 CFR §§ 60.4205(b) and 60.4206, the owner or operator shall operate and maintain the emergency engine that achieves the emission limits in Table 10-1 over the entire life of the emergency engine.

Table 10-1 – Emission Limits for Emergency Engines (grams per kilowatt-hour)

Unit	Nonmethane Hydrocarbon + Nitrogen Oxide	Carbon Monoxide	Particulate Matter
#2	6.4	3.5	0.20

In addition, the exhaust gases from the emergency engine, except single-cylinder engines and constant-speed engines, shall not exceed the following opacity levels:

1. 20 percent during the acceleration mode;
2. 15 percent during the lugging mode; and

3. 50 percent during the peaks in either the acceleration or lugging modes.

10.2 Fuel requirements for emergency engines

In accordance with ARSD 74:36:07:88, as referenced to 40 CFR § 60.4207(b), the owner or operator shall only combust diesel fuel in the emergency engine that meets the following per gallon standards:

1. Maximum sulfur content of 15 parts per million; and
2. Minimum cetane index of 40; or
3. Maximum aromatic content of 35 volume percent.

The owner or operator may use any existing diesel fuel purchased (or otherwise obtained) prior to October 1, 2010, until depleted.

10.3 Operating requirements for emergency engines

In accordance with ARSD 74:36:07:88, as referenced to 40 CFR § 60.4211(a), the owner or operator shall comply with the following, except as specified in permit condition 10.6:

1. Operate and maintain the engine according to the manufacturer's emission-related written instructions;
2. Change only those emission-related settings permitted by the manufacturer; and
3. Meet the applicable requirements in 40 CFR Part 89, 94, and/or 1068.

10.4 Compliance with emergency engine emission limits

In accordance with ARSD 74:36:07:88, as referenced to 40 CFR § 60.4211(c), the owner or operator shall demonstrate compliance with the emission limits in permit condition 10.1 by purchasing an engine certified to meet the emission limits in permit condition 10.1 and install and configure the engine according to the manufacturer's emission-related specifications, except as permitted in permit condition 10.6.

10.5 Annual operation of emergency engine

In accordance with ARSD 74:36:07:88, as referenced to 40 CFR § 60.4211(f), the owner or operator shall operate the emergency engine as follows:

1. There is no time limit on the use of emergency engine in emergency situations;
2. The owner or operator may operate the emergency engine for any combination of the following purposes for a maximum of 100 hours per calendar year:
 - a. Emergency engines may be operated for maintenance checks and readiness testing, provided the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Secretary for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating federal,

- state, or local standards require maintenance and testing of the emergency engine beyond 100 hours per calendar year;
- b. Emergency engines may be operated for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies, or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3; and
 - c. Emergency engines may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency;
3. Emergency engines may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year provided in paragraph (2) of this permit condition. The 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for the owner or operator to an electric grid or otherwise supply power as part of a financial arrangement with another entity, except if all of the following are met:
- a. The engine is dispatched by the local balancing authority or local transmission and distribution system operator;
 - b. The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region;
 - c. The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines;
 - d. The power is provided only to the owner or operator itself or to support the local transmission and distribution system; and
 - e. The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the owner or operator.

10.6 Alternative requirements for emergency engines

In accordance with ARSD 74:36:07:88, as referenced to 40 CFR § 60.4211(g), if the owner or operator does not install, configure, operate, and maintain the emergency engine according to the manufacturer's emission-related written instructions or changes the emission-related settings in a way that is not permitted by the manufacturer, the owner or operator shall demonstrate compliance as follows:

1. Maintain a maintenance plan and records of conducted maintenance;
2. To the extent practicable, maintain and operate the generator in a manner consistent with good air pollution control practice for minimizing emissions;
3. Conduct an initial performance test to demonstrate compliance with the emission limits in Table 10-1 within 1 year of initial startup or within 1 year of such action; and

4. If the emergency engine is greater than 500 horsepower, the owner or operator shall conduct subsequent performance testing every 8,760 hours of engine operation or 3 years, whichever comes first, thereafter to demonstrate compliance with the applicable limits in Table 10-1.

10.7 Performance test requirements for emergency engines

In accordance with ARSD 74:36:07:88, as referenced to 40 CFR § 60.4212(a) and (c), if the owner or operator conducts a performance test to demonstrate compliance with Table 10-1, the following procedures shall be followed:

1. The performance test must be conducted according to the in-use testing procedures in 40 CFR Part 1039, Subpart F for emergency engines with a displacement of less than 10 liters per cylinder and according to 40 CFR Part 1042, Subpart F, for emergency engines with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder; and
2. Exhaust emissions from the emergency engine shall not exceed the “NTE” numerical requirements, rounded to the same number of decimal places as the applicable emission limit in Table 10-1 and determined by Equation 10-1.

Equation 10-1 – NTE formula

$$NTE = 1.25 \times STD$$

Where:

- NTE = Numerical requirement for each pollutant identified in Table 10-1; and
- STD = Emission limit for each pollutant identified in Table 10-1

10.8 Non-resettable hour meter

In accordance with ARSD 74:36:07:88, as referenced to 40 CFR § 60.4209(a) and ARSD 74:36:05:16.01(9), the owner or operator shall install, maintain, and operate a non-resettable hour meter on the emergency engine prior to initial startup.

10.9 Annual reporting for emergency engines greater than 100 horsepower

In accordance with ARSD 74:36:07:88, as referenced to 40 CFR § 60.4214(d), if the owner or operator operates an emergency engine with a maximum engine power of more than 100 horsepower that operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in subparagraph (2)(b) and (c) in permit condition 10.5 or that operates for the purposes specified in paragraph (3) of permit condition 10.5, the owner or operator shall submit an annual report. The annual report shall contain the following:

1. Company name and address where the engine is located;
2. Date of the report and beginning and ending dates of the reporting period;
3. Engine site rating and model year;
4. Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place;
5. Hours operated for the purposes specified in subparagraph (2)(b) and (c) in permit condition 10.5, including the date, start time, and end time;

6. Number of hours the engine is contractually obligated to be available for the purposes specified in subparagraph (2)(b) and (c) in permit condition 10.5, if applicable; and
7. Hours spent for operation for the purposes specified in paragraph (3) of permit condition 10.5, including the date, start time, and end time. The report must also identify the entity that dispatched the engine and the situation that necessitated the dispatch of the engine.

The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year. The annual report must be submitted electronically using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). However, if the reporting form specific to this subpart is not available in CEDRI at the time the report is due, the written report must be submitted to the Secretary.

11.0 NSPS Requirements – Fire Pump

11.1 Fire pump engine emission limits

In accordance with ARSD 74:36:07:88, as referenced to 40 CFR §§ 60.4205(c) and 60.4206, the owner or operator shall operate and maintain the fire pump engine that achieves the emission limits in Table 11-1 over the entire life of the fire pump engine.

Table 11-1 – Emission limits for fire pumps ²

Unit	NMHC+NO_x ¹	Particulate Matter
#3	4.0 (3.0)	0.20 (0.15)

¹ – NMHC + NO_x means non methane hydrocarbon plus nitrogen oxide; and

² – The emission limits are in grams per kilowatt-hour (grams per horsepower-hour).

11.2 Fuel requirements for fire pump engine

In accordance with ARSD 74:36:07:88, as referenced to 40 CFR § 60.4207(b), the owner or operator shall only combust diesel fuel in the fire pump engine that meets the following per gallon standards:

1. Maximum sulfur content of 15 parts per million; and
2. Minimum cetane index of 40; or
3. Maximum aromatic content of 35 volume percent.

The owner or operator may use any existing diesel fuel purchased (or otherwise obtained) prior to October 1, 2010, until depleted.

11.3 Operating requirements for fire pump engine

In accordance with ARSD 74:36:07:88, as referenced to 40 CFR § 60.4211(a), the owner or operator shall comply with the following, except as specified in permit condition 11.6:

1. Operate and maintain the fire pump engine according to the manufacturer's emission-related written instructions;
2. Change only those emission-related settings permitted by the manufacturer; and
3. Meet the applicable requirements in 40 CFR Part 89, 94, and/or 1068.

11.4 Compliance with fire pump engine emission limits

In accordance with ARSD 74:36:07:88, as referenced to 40 CFR § 60.4211(c), the owner or operator shall demonstrate compliance with the emission limits in permit condition 11.1 by purchasing an engine certified to meet the emission limits in permit condition 11.1 and install and configure the engine according to the manufacturer's emission-related specifications, except as permitted in permit condition 11.6.

11.5 Operational restrictions for fire pump engine

In accordance with ARSD 74:36:07:88, as referenced to 40 CFR § 60.4211(f), the owner or operator may operate the fire pump engine for the purpose of maintenance checks and readiness testing, provided the tests are recommended by federal, state or local government, the manufacturer, the vendor, or the insurance company associated with the fire pump engine. Maintenance checks and readiness testing of fire pump engine is limited to 100 hours per year. There is no time limit on the use of fire pump engine in emergency situations. The owner or operator may operate the fire pump engine up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours per year provided for maintenance and testing.

11.6 Exemption from operating requirements for fire pump engine

In accordance with ARSD 74:36:07:88, as referenced to 40 CFR § 60.4211(g)(3), if the owner or operator does not install, configure, operate, and maintain the fire pump engine according to the manufacturer's emission-related written instructions or changes the emission-related settings in a way that is not permitted by the manufacturer, the owner or operator must demonstrate compliance as follows:

1. Maintain a maintenance plan and records of conducted maintenance;
2. To the extent practicable, maintain and operate the generator in a manner consistent with good air pollution control practice for minimizing emissions;
3. Conduct an initial performance test to demonstrate compliance with the emission limits in Table 11-1 within 1 year of initial startup or within 1 year of such action; and
4. If the emergency engine is greater than 500 horsepower, the owner or operator shall conduct subsequent performance testing every 8,760 hours of engine operation or 3 years, whichever comes first, thereafter to demonstrate compliance with the applicable limits in Table 11-1.

11.7 Performance test requirements for fire pump engines

In accordance with ARSD 74:36:07:88, as referenced to 40 CFR § 60.4212(a), if the owner or operator conducts a performance test to demonstrate compliance with Table 11-1, the performance test must be conducted according to the in-use testing procedures in 40 CFR Part 1039, Subpart F for emergency engines with a displacement of less than 10 liters per cylinder

and according to 40 CFR Part 1042, Subpart F, for emergency engines with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder.

11.8 Non-resettable clock requirements

In accordance with ARSD 74:36:07:88, as referenced to 40 CFR §§ 60.4209(a), the owner or operator shall install and maintain a non-resettable hour meter on the fire pump engine prior to startup of the fire pump engine.

12.0 NSPS Requirements - Stationary Combustion Turbines

12.1 Emission limits for nitrogen oxides

In accordance with ARSD 74:36:07:89, as referenced to 40 CFR § 60.4320, the owner or operator shall not cause to be discharged from Unit #1 nitrogen oxide emissions greater than 15 parts per million by volume at 15 percent oxygen or 54 nanograms per Joule of useful output (0.43 pounds per megawatt-hour).

12.2 Emission limits for sulfur dioxide

In accordance with ARSD 74:36:07:89, as referenced to 40 CFR § 60.4330, the owner or operator shall meet one of the following:

1. The owner or operator shall not cause to be discharged into the atmosphere from Unit #1 any gases which contain sulfur dioxide in excess of 110 nanograms per Joule or 0.90 pounds per megawatt-hour gross output; or
2. The owner or operator shall not burn in Unit #1 any fuel which contains total potential sulfur emissions in excess of 26 nanograms of sulfur dioxide per Joule or 0.060 pounds of sulfur dioxide per million Btus heat input.

12.3 General requirements for compliance

In accordance with ARSD 74:36:07:89, as referenced to 40 CFR § 60.4333, the owner or operator shall operate and maintain Unit #1 and associated air pollution control equipment and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction.

12.4 Demonstrating continuous compliance for nitrogen oxides

In accordance with ARSD 74:36:07:89, as referenced to 40 CFR §§ 60.4335(b) and 60.4340, the owner or operator shall install, calibrate, maintain and operate a continuous monitoring system for nitrogen oxide that meets the following requirements:

1. Install, certify, maintain, and operate a continuous emission monitoring system consisting of a nitrogen oxide monitor and a diluent gas (oxygen or carbon dioxide) monitor to determine the hourly nitrogen oxide emission rate in parts per million or pounds per million Btus; and

2. If complying with the output-based standard, install, calibrate, maintain, and operate a fuel flow meter to continuously measure the heat input to Unit #1; and
3. If complying with the output-based standard, install, calibrate, maintain, and operate a watt meter to continuously measure the gross electrical output of the unit in megawatts-hours; and
4. For combined heat and power units complying with the output-based standard, install, calibrate, maintain, and operate meters for useful recovered energy flow rate, temperature, and pressure, to continuously measure the total thermal energy output in Btus per hour.

12.5 Requirements for continuous emissions monitoring system

In accordance with ARSD 74:36:07:89, as referenced to 40 CFR § 60.4345, the continuous emission monitoring system in permit condition 12.4 shall meet the following requirements:

1. Each nitrogen oxide diluent continuous emission monitoring system shall be installed and certified according to Performance Specification 2 in 40 CFR Part 60, Appendix B, except the 7-day calibration drift is based on the unit operating days, not calendar days. Alternatively, the nitrogen oxide diluent continuous emissions monitoring system may be installed and certified according to 40 CFR Part 75, Appendix A. The relative accuracy test audit of the continuous emissions monitoring system shall be performed on a pounds per million Btus basis;
2. During each full unit operating hour, both the nitrogen oxide monitor and the diluent monitor must complete a minimum of one cycle of operation (i.e., sampling, analyzing, and data recording) for each 15-minute quadrant of the hour, to validate the hour. For partial unit operating hours, at least one valid data point must be obtained with each monitor for each quadrant of the hour in which the unit operates. For unit operating hours in which required quality assurance and maintenance activities are performed on the continuous emissions monitoring system a minimum of two valid data points (one in each of two quadrants) are required for each monitor to validate the nitrogen oxide emission rate for the hour;
3. Each fuel flow meter shall be installed, calibrated, maintained, and operated according to the manufacturer's instructions. Alternatively, a fuel flow meter may meet the installation, certification, and quality assurance requirements of 40 CFR Part 75, Appendix D;
4. Each watt meter, steam flow meter, and each pressure or temperature measurement device shall be installed, calibrated, maintained, and operated according to manufacturer's instructions; and
5. The owner or operator shall develop and maintain on-site a quality assurance plan for all of the continuous monitoring equipment described in paragraphs (1), (3), and (4) of this permit condition.

12.6 Identifying excess emissions using continuous emission monitoring data.

In accordance with ARSD 74:36:07:89, as referenced to 40 CFR §§ 60.13(h) and 60.4350, the following shall be used for the purpose of identifying excess emissions:

1. For each unit operating hour in which a valid hourly average, as described in permit condition 12.5, is obtained for both nitrogen oxides and diluent monitors, the data acquisition and handling system shall calculate and record the hourly nitrogen oxides emission rate in units of parts per million or pounds per million Btus, using the appropriate equation from 40 CFR Part 60, Appendix A, Method 19. For any hour in which the hourly average oxygen concentration exceeds 19.0 percent oxygen or the hourly average carbon dioxide concentration is less than 1.0 percent carbon dioxide, a diluent cap value of 19.0 percent oxygen or 1.0 percent carbon dioxide (as appropriate) may be used in the emission calculations;
2. Correction of measured nitrogen oxides concentrations to 15 percent oxygen is not allowed;
3. If the owner or operator installed and certified the nitrogen oxide diluent continuous emission monitoring system to meet the requirements in 40 CFR Part 75, only quality assured data from the continuous emission monitoring system shall be used to identify excess emissions. Periods where the missing data substitution procedures in 40 CFR Part 75, Subpart D are applied are to be reported as monitor downtime in the excess emissions and monitoring performance report required in permit condition 12.10;
4. All required fuel flow rate, steam flow rate, temperature, pressure, and megawatt data shall be reduced to hourly averages;
5. Calculate the hourly average nitrogen oxides emission rates, in units of the emission standards in permit condition 12.1, using either parts per million for units complying with the concentration limit or Equation 12-1 for units complying with the output based standard, except the gross energy output is calculated as the sum of the total electrical generated by the combustion turbine, the additional electrical (if any) generated by the steam turbine following the heat recovery steam generator, and 100 percent of the total useful thermal energy output that is not used to generate additional electricity, expressed in equivalent megawatts, as determined in Equation 12-2 and 12-3.

Equation 12-1 – Output based standard

$$E = \frac{(NOx)_h \times (HI)_h}{P}$$

Where:

- E = hourly nitrogen oxides emission rate, in pounds per megawatt-hour;
- $(NO_x)_h$ = hourly nitrogen oxides emission rate, in pounds per million Btus;
- $(HI)_h$ = hourly heat input rate to the unit, in million Btus per hour, measured using the fuel flow meter(s), and
- P = gross energy output of the combustion turbine, in megawatts.

Equation 12-2 – Gross energy output

$$P = (Pe)_t + (Pe)_c + Ps + Po$$

Where:

- P = gross energy output of the stationary combustion turbine system, in megawatts;
- $(Pe)_t$ = electrical output of the combustion turbine, in megawatts;
- $(Pe)_c$ = electrical output (if any) of the steam turbine, in megawatts; and

- P_o = other useful heat recovery, measured relative to ISO conditions, not used for steam generation or performance enhancement of the combustion turbine.

Equation 12-3 – Useful thermal energy

$$P_s = \frac{Q \times H}{3.413 \times 10^6 \text{ Btus/megawatt} - \text{hour}}$$

Where:

- P_s = useful thermal energy of the steam, measured relative to ISO conditions, not used to generate additional electric, in megawatts;
 - Q = measured steam flow rate, in pounds per hour;
 - H = enthalpy of the steam at measured temperature and pressure relative to ISO conditions, in Btus per pound; and
 - 3.413×10^6 = conversion from Btus per hour to megawatt.
6. Use the calculated hourly average emission rates to assess excess emissions on a 30 unit operating day rolling average basis, as described in permit condition 12.11.

12.7 Determining total sulfur content

In accordance with ARSD 74:36:07:89, as referenced to 40 CFR § 60.4360, the owner or operator shall monitor the total sulfur content of the fuel being fired in Unit #1, except as provided in permit condition 12.8. The sulfur content of the fuel shall be determined using total sulfur methods described in permit condition 12.13. Alternatively, if the total sulfur content of the gaseous fuel during the most recent performance test was less than half the applicable limit, ASTM D4084, D4810, D5504, or D6228, or Gas Processors Association Standard 2377 may be used.

12.8 Exemption from monitoring sulfur content

In accordance with ARSD 74:36:07:89, as referenced to 40 CFR § 60.4365, the owner or operator may elect not to monitor the total sulfur content of the fuel combusted in Unit #1, if the fuel is demonstrated not to exceed potential sulfur emissions of 26 nanograms of sulfur dioxide per Joule (0.060 pounds of sulfur dioxide per million Btus) heat input. The owner or operator shall use one of the following sources of information to make the required demonstration:

1. The fuel quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the fuel, specifying the maximum total sulfur content for natural gas is 20 grains of sulfur or less per 100 standard cubic feet; or
2. Representative fuel sampling data which show the sulfur content of the fuel does not exceed 26 nanograms of sulfur dioxide per Joule (0.060 pounds of sulfur dioxide per million Btus) heat input. At a minimum, the amount of fuel sampling data specified in 40 CFR Part 75, Appendix D, Section 2.3.1.4 or 2.3.2.4 is required.

12.9 Frequency to determine the sulfur content

In accordance with ARSD 74:36:07:89, as referenced to 40 CFR § 60.4370, if the owner or operator elects not to demonstrate sulfur content using the options in permit condition 12.8, and

the fuel is supplied without intermediate bulk storage, the sulfur content value of the gaseous fuel shall be determined and recorded once per unit operating day. Alternatively, the owner or operator or fuel vendors may develop custom schedules for determination of the total sulfur content of gaseous fuels, based on the design and operation of Unit #1 and the characteristics of the fuel supply. Custom schedules shall be substantiated with data and approved by the Secretary before they can be used to comply with permit condition 12.2, except the following two custom sulfur monitoring schedules are acceptable without prior Secretary approval:

1. The owner or operator shall obtain daily total sulfur content measurements for 30 consecutive unit operating days, using the applicable methods specified in this chapter. Based on the results of the 30 daily samples, the required frequency for subsequent monitoring of the fuel's total sulfur content shall be as follows:
 - a. If none of the 30 daily measurements of the fuel's total sulfur content exceeds half the applicable standard, subsequent sulfur content monitoring may be performed at 12-month intervals. If any of the samples taken at 12-month intervals has a total sulfur content greater than half but less than the applicable limit, follow the procedures in subparagraph (1)(b) of this permit condition. If any measurement exceeds the applicable limit, follow the procedures in subparagraph (1)(c) of this permit condition;
 - b. If at least one of the 30 daily measurements of the fuel's total sulfur content is greater than half but less than the applicable limit, but none exceeds the applicable limit, then:
 - i. Collect and analyze a sample every 30 days for 3 months. If any sulfur content measurement exceeds the applicable limit, follow the procedures in subparagraph (1)(c) of this permit condition. Otherwise, follow the procedures in subparagraph (1)(b)(ii) of this permit condition;
 - ii. Begin monitoring at 6-month intervals for 12 months. If any sulfur content measurement exceeds the applicable limit, follow the procedures in subparagraph (1)(c) of this permit condition. Otherwise, follow the procedures in subparagraph (1)(b)(iii) of this permit condition;
 - iii. Begin monitoring at 12-month intervals. If any sulfur content measurement exceeds the applicable limit, follow the procedures in subparagraph (1)(c) of this permit condition. Otherwise, continue to monitor at this frequency.
 - c. If a sulfur content measurement exceeds the applicable limit, immediately begin daily monitoring according to paragraph (1) of this permit condition. Daily monitoring shall continue until 30 consecutive daily samples, each having a sulfur content no greater than the applicable limit, are obtained. At that point, the applicable procedures of subparagraph (1)(a) or (b) of this permit condition shall be followed.
2. The owner or operator may use the data collected from the 720-hour sulfur sampling demonstration described in 40 CFR Part 75, Appendix D, section 2.3.6 to determine a custom sulfur sampling schedule, as follows:
 - a. If the maximum fuel sulfur content obtained from the 720 hourly samples does not exceed 20 grains per 100 standard cubic foot, no additional monitoring of the sulfur content of the gas is required, for the purposes of this chapter;

- b. If the maximum fuel sulfur content obtained from any of the 720 hourly samples exceeds 20 grains per 100 standard cubic foot, but none of the sulfur content values (when converted to weight percent sulfur) exceeds half the applicable limit, then the minimum required sampling frequency shall be one sample at 12 month intervals;
- c. If any sample result exceeds half the applicable limit, but none exceeds the applicable limit, follow the provisions of subparagraph (1)(b) of this permit condition; and
- d. If the sulfur content of any of the 720 hourly samples exceeds the applicable limit, follow the provisions of subparagraph (1)(c) of this permit condition.

12.10 Semiannual excess emissions and monitoring downtime report

In accordance with ARSD 74:36:07:89, as referenced to 40 CFR §§ 60.7(c), 60.4375(a), and 60.4395, the owner or operator shall submit a semiannual excess emissions and monitor downtime report for all periods of unit operation, including startup, shutdown, and malfunctions. The semiannual report shall include the following:

1. The magnitude of excess emissions computed in accordance with permit condition 12.6, any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period;
2. Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of Unit #1. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted;
3. The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments; and
4. When no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report.

The semiannual report shall be postmarked by the 30th day following the end of the semiannual period (i.e., July 30th and January 30th). The report shall include the following:

12.11 Defining excess emissions and monitor downtime for nitrogen oxide

In accordance with ARSD 74:36:07:89, as referenced to 40 CFR § 60.4380, periods of excess emissions and monitor downtime are defined as follows:

1. An excess emission is any unit operating period in which the 4-hour or 30-day rolling average nitrogen oxide emission rate exceeds the applicable emission limit in permit condition 12.1. A “4-hour rolling average emission rate” is the arithmetic average of the average nitrogen oxide emission rate in parts per million or nanograms per Joule (pounds per megawatt-hour) measured by the continuous emission monitoring equipment for a given hour and the three unit operating hour average nitrogen oxide emission rates immediately preceding that unit operating hour. Calculate the rolling average if a valid nitrogen oxide emission rate is obtained for at least 3 of the 4 hours. A “30-day rolling average emission rate” is the arithmetic average of all hourly nitrogen oxide emission data in parts per million or nanograms per Joule (pounds per megawatt-hour) measured

by the continuous emission monitoring equipment for a given day and the twenty-nine unit operating days immediately preceding that unit operating day. A new 30-day average is calculated each unit operating day as the average of all hourly nitrogen oxide emissions rates for the preceding 30 unit operating days if a valid nitrogen oxide emission rate is obtained for at least 75 percent of all operating hours; and

2. A period of monitor downtime is any unit operating hour in which the data for any of the following parameters are either missing or invalid: nitrogen oxide concentration, carbon dioxide or oxygen concentration, fuel flow rate, steam flow rate, steam temperature, steam pressure, or megawatts. The steam flow rate, steam temperature, and steam pressure are only required if the owner or operator uses this information for compliance purposes.

12.12 Defining excess emissions and monitoring downtime for sulfur dioxide

In accordance with ARSD 74:36:07:89, as referenced to 40 CFR § 60.4385, if the owner or operator chooses the option to monitor the sulfur content of the fuel, excess emissions and monitoring downtime are defined as follows:

1. For samples of gaseous fuel obtained using daily sampling, flow proportional sampling, or sampling from the unit's storage tank, an excess emission occurs each unit operating hour included in the period beginning on the date and hour of any sample for which the sulfur content of the fuel being fired in the combustion turbine exceeds the applicable limit and ending on the date and hour that a subsequent sample is taken that demonstrates compliance with the sulfur limit; and
2. A period of monitor downtime begins when a required sample is not taken by its due date. A period of monitor downtime also begins on the date and hour of a required sample, if invalid results are obtained. The period of monitor downtime ends on the date and hour of the next valid sample.

12.13 Conducting subsequent performance tests for sulfur

In accordance with ARSD 74:36:07:89, as referenced to 40 CFR § 60.4415, the owner or operator shall conduct sulfur dioxide performance tests on an annual basis (no more than 14 calendar months following the previous performance test). The three methodologies that may be used to conduct the performance tests are as follows:

1. To periodically determine the sulfur content of the fuel combusted in Unit #1, a representative fuel sample shall be collected following ASTM D5287 for natural gas. The fuel analyses of this section may be performed either by the owner or operator, a service contractor, the fuel vendor, or any other qualified agency using ASTM D1072, D3246, D4084, D4468, D4810, D6228, D6667, or Gas Processors Association Standard 2377;
2. Measure the sulfur dioxide concentration, in parts per million, using EPA's Methods 6, 6C, 8, or 20 in 40 CFR Part 60, Appendix A. In addition, the American Society of Mechanical Engineers (ASME) standard, ASME PTC 19-10-1981-Part 10, "Flue and Exhaust Gas Analyses," manual methods for sulfur dioxide can be used instead of Methods 6 or 20. For units complying with the output based standard, concurrently measure the stack gas flow rate, using EPA's Methods 1 and 2 in 40 CFR Part 60,

Appendix A, and measure and record the electrical and thermal output from the unit. Then use Equation 12-4 to calculate the sulfur dioxide emission rate; or

Equation 12-4 – Sulfur dioxide emission rate

$$E = \frac{1.664 \times 10^{-7} \times (SO_2)_c \times Q_{std}}{P}$$

Where:

- E = Sulfur dioxide emission rate, in pounds per megawatt-hour;
 - 1.664×10^{-7} = conversion constant, in pounds per dry standard cubic foot-parts per million;
 - $(SO_2)_c$ = average sulfur dioxide concentration for the run, in parts per million;
 - Q_{std} = stack gas volumetric flow rate, in dry standard cubic foot per hour; and
 - P = the sum of all electrical output from Unit #1 plus all useful recovered thermal output not used for additional electric generation, in megawatt, calculated according to permit condition 12.6.
3. Measure the sulfur dioxide and diluent gas concentrations, using EPA's Methods 6, 6C, or 8 and 3A, or 20 in 40 CFR Part 60, Appendix A. In addition, the manual methods for sulfur dioxide ASME PTC 19-10-1981-Part 10 may be used. Concurrently measure the heat input to the unit, using a fuel flow meter or flow meters, and measure the electrical and thermal output of the unit. Use EPA's Method 19 in 40 CFR Part 60, Appendix A to calculate the sulfur dioxide emission rate in pounds per million Btus. Then, use Equation 12-2 and 12-3 to calculate the sulfur dioxide emission rate in pounds per megawatt-hour.