

Permit #: 28.0805-PSD

Effective Date: Draft



**SOUTH DAKOTA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
PREVENTION OF SIGNIFICANT DETERIORATION
AIR QUALITY PRECONSTRUCTION PERMIT**

**Steven M Pirner, 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

Jerry Menge, Air Quality Program Coordinator
(701) 223-0441

4. Facility Contact

Jerry Menge, Air Quality Program Coordinator
(701) 223-0441

5. Responsible Official

Robert. W. Holzwarth, Vice President of Operations
(701) 223-0441

B. Type of Operation

Natural gas-fired combustion turbine and heat recovery steam generator for electricity production. The facility has a maximum net output of 300 megawatts.

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1.0 STANDARD CONDITIONS

1.1 Construction and operation of source. In accordance with Administrative Rules of South Dakota (ARSD) 74:36:09:02, as referenced to 74:36:05:16.01(8), the owner or operator shall construct and 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 submitted and dated June 1, 2009, and August 3, 2009, unless modified by the conditions of this permit. The application consists of the application forms, supporting data, and supplementary correspondence. If the owner or operator becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in an application, such information shall be promptly submitted. The control equipment shall be operated in a manner that achieves compliance with the conditions of this permit at all times.

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

| Unit | Description | Operating Rate ¹ | Control Device |
|------|--|--|---|
| #1 | Combustion turbine/heat recovery steam generator, F-class (or equivalent), fired with natural gas and equipped with low-NO _x burners. | Combustion turbine – 1,713 million Btus per hour (Lower Heating Value) heat input. | Selective catalytic reduction and catalytic oxidation |
| | | Duct burner – 615.2 million Btus per hour (Lower Heating Value) heat input. | |
| #2 | Emergency generator fueled with ultra low sulfur distillate oil. | 2,000 kilowatts | Not applicable |
| #3 | Fire water pump fueled with ultra low sulfur distillate oil. | 577 horsepower | Not applicable |
| #4 | Inlet air heater fired with natural gas. | 25.0 million Btus per hour heat input | Not applicable |

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

1.2 Duty to comply. In accordance with ARSD 74:36:09:02, as referenced to 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 74:36:09:02, as referenced to 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 that 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 Law (SDCL) 34A-1, 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 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 that are 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 74:36:09:02, as referenced to 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 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 violation of this permit. Credible evidence is as follows:

1. Information from the use of the following methods is presumptively credible evidence of whether a violation has occurred at the source:
 - a. A monitoring method approved for the source 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 section (1) or (2)(a).

2.0 CONSTRUCTION AND OPERATING PERMIT DEADLINES

2.1 Commence construction. In accordance with ARSD 74:36:09:02, as referenced to 40

CFR § 52.21(r)(2), the owner or operator shall commence construction within 18 months of the effective date of this permit. If construction is delayed or interrupted for a period of 18 months or more this permit becomes invalid. The owner or operator may apply to the Secretary for an extension before the end of the 18-month period. The Secretary may grant an extension after the owner or operator satisfactorily demonstrates that an extension is justified.

2.2 Submit operating permit application. In accordance with ARSD 74:36:05:03.01, the owner or operator shall submit a complete permit application for a Title V air quality permit within 12 months after the initial startup of the electrical generating station. For the purpose of this permit condition, commencing operation means the initial startup of the electric generating station, which is the first date that natural gas is fired in the combustion turbine/heat recovery steam generator (Unit #1). A complete permit application shall include all of the requirements specified in 74:36:05:12, including periodic monitoring and compliance assurance monitoring activities necessary to ensure compliance.

2.3 Submit acid rain permit application. In accordance with ARSD 74:36:16:01, the owner or operator shall submit a complete Acid Rain permit application 24 months prior to the initial startup of the combustion turbine/heat recovery steam generator (Unit #1).

2.4 Submit risk management plan. In accordance with 40 CFR Part 68, Subpart G, the owner or operator shall submit a risk management plan to EPA, if the owner or operator is applicable to 40 CFR Part 68, Subpart G.

3.0 RECORDKEEPING AND REPORTING REQUIREMENTS

3.1 Recordkeeping and reporting. In accordance with ARSD 74:36:09:02, as referenced to 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. 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 57501-3181

3.2 Signatory Requirements. In accordance with ARSD 74:36:09:02, as referenced to ARSD 74:36:05:12(17), all applications submitted to the Secretary shall be signed and certified by a responsible official. 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. All reports or other information submitted to the Secretary shall be signed and certified by a responsible official or a duly authorized representative. 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 responsible official shall notify the Secretary if an authorization is no longer accurate. The new duly authorized representative must be designated prior to or together with any reports or information to be signed by a duly authorized representative.

3.3 Certification statement. In accordance with ARSD 74:36:09:02, as referenced to ARSD 74:36:05:16.01(14) (a), all documents required by this permit, including reports, 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.”

3.4 Construction date notification. In accordance with ARSD 74:36:09:02, as referenced to ARSD 74:36:05:16.01(9), the owner or operator shall notify the Secretary of the date construction commences on the permanent structures for the electrical generating station. The notification shall be postmarked within 15 days after the date construction commenced.

3.5 Initial startup notification. In accordance with ARSD 74:36:09:02, as referenced to ARSD 74:36:05:16.01(9), the owner or operator shall notify the Secretary of the actual date of the initial startup of the combustion turbine/heat recovery steam generator (Unit #1). The notification shall be postmarked within 15 days after the date of initial startup. Initial startup is the first date that natural gas is fired in the combustion turbine/heat recovery steam generator.

3.6 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 the emergency generator (Unit #2) and fire water pump (Unit #3) operated. The hours of operation shall be identified as emergency and non-emergency operation; and
4. The number of hours the inlet air heater (Unit #4) operated.

3.7 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 must 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.

3.8 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 that 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 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 first quarterly report shall be submitted at the end of the calendar quarter that the initial startup of the electrical generating station occurred. All other 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).

4.0 BEST AVAILABLE CONTROL TECHNOLOGY (BACT) LIMITS

4.1 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 4-1 for the appropriate permitted unit, operation, and process.

Table 4-1 – 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) – |

| Unit | Description | PM10 Emission Limit |
|------|---------------------|--|
| | | 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 4.4 |
| #2 | Emergency generator | New Source Performance Standard – see permit condition 6.2 |
| #3 | Fire water pump | New Source Performance Standard – see permit condition 6.2 |
| #4 | Inlet air heater | Natural gas and limited hours of operation – see permit condition 1.1, 4.4 and 5.4 |

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 8.0.

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.

4.2 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 4-2 for the appropriate permitted unit, operation, and process.

Table 4-2 – 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 |
| | | 220 pounds during a startup or shutdown period ² |
| | | 117 tons per 12-month rolling period ³ |
| | | Limited hours of operation – see permit condition 5.1 |
| #2 | Emergency generator | New Source Performance Standard – see permit condition 6.2 |
| #3 | Fire water pump | New Source Performance Standard – see permit condition 6.2 |
| #4 | Inlet air heater | Good combustion and limited hours of operation – see permit condition 5.4 |

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 9.1;

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 9.1; 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 9.1.

4.3 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 4-3 for the appropriate permitted unit, operation, and process.

Table 4-3 – 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 5.1 |
| #2 | Emergency generator | New Source Performance Standard – see permit condition 6.2 |
| #3 | Fire water pump | New Source Performance Standard – see permit condition 6.2 |
| #4 | Inlet air heater | Good combustion and limited hours of operation – see permit condition 5.4 |

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 9.2.

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 9.2; 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 9.2.

4.4 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 1100 Btu per standard cubic foot.

4.5 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.

4.6 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 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. The Startup, Shutdown, and Malfunction plan shall be submitted to and approved by the Secretary at least 90 days prior to the initial startup of the combustion turbine/heat recovery steam generator.

5.0 OPERATIONAL LIMITS

5.1 Combustion turbine startup and shutdown limitation . 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 200 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 50% of load, which ever is less. Shutdown shall be defined as the last 200 minutes of operation of the combustion turbine or the time period from the combustion turbine falling below 50% of load until no more fuel is combusted in the combustion turbine, which ever 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 5.5

5.2 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 less than 7 days per 12-month rolling period. Operations during an emergency are not included in the number of days per 12-month rolling period.

5.3 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.

5.4 Inlet air heater 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 limit the operation of the of the inlet air heater to less than 150 hours per 12-month rolling period.

5.5 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. The Operation, Maintenance, and Monitoring plan shall be submitted to the Secretary within 60 days prior to initial startup of the combustion turbine/heat recovery steam generator. Any subsequent changes to the plan must be submitted to the Secretary for review and approval. Pending approval by the Secretary of an

initial or 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.

5.6 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 that 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.

6.0 NEW SOURCE PERFORMANCE STANDARDS

6.1 New source performance standard – Subpart A. In accordance with ARSD 74:36:07:01, as referenced to 40 CFR Part 60, Subpart A, the owner or operator shall comply with all applicable notification, recordkeeping, performance testing, compliance with standards and maintenance requirements, monitoring, general control device requirements, general notice and reporting requirements, and other general provisions for the new source performance standards.

6.2 New source performance standard – Subpart IIII. In accordance with ARSD 74:36:07:88, as referenced to 40 CFR Part 60, Subpart IIII, the owner or operator shall comply with all applicable standards, fuel requirements, monitoring, compliance, testing, notification, reporting, and recordkeeping requirements in the standards of performance for stationary compression ignition internal combustion engines. This permit condition is applicable to Unit #2 and #3.

6.3 New source performance standard – Subpart KKKK. In accordance with ARSD 74:36:07:89, as referenced to 40 CFR Part 60, Subpart KKKK, the owner or operator shall

comply with all applicable limits, compliance, monitoring, reporting, and testing requirements in the standards of performance for stationary combustion turbines. This permit condition is applicable to Unit #1.

7.0 OTHER APPLICABLE LIMITS

7.1 State opacity 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. This provision does not apply when the presence of uncombined water is the only reason for failure to meet the requirement. An exceedance of the opacity limit is not considered a violation during brief periods of soot blowing, startup, shutdown, or malfunction. 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 of the source is not a malfunction and is considered a violation.

8.0 PERFORMANCE TESTS

8.1 Performance test may be required. In accordance with ARSD 74:36:11:02, the Secretary may request a performance test. 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 that is conducted while the unit is operating at 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.

8.2 Test methods and procedures. 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.

8.3 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.

8.4 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 that outlines what needs to be completed for approval.

8.5 Notification of test. In accordance with ARSD 74:36:11:03, the owner or operator shall notify the Secretary at least 10 days prior to the start of a performance test to arrange for an agreeable test date when the Secretary may observe the test. The Secretary may extend the deadline for the performance test in order to accommodate schedules in arranging an agreeable test date.

8.6 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;
5. Quality assurance procedures and results;
6. Records of operating conditions during the test, 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.

8.7 Initial particulate performance test. In accordance with ARSD 74:36:11:02, the owner or operator shall conduct an initial performance test on Unit #1. The initial performance test shall be conducted to determine emission rates of particulate matter 10 microns in diameter or less (filterable and condensable). The initial performance test shall be conducted within 180 days after initial startup of the unit. The length of the test is based on the compliance averaging period.

8.8 Initial test of sulfur content of distillate oil and natural gas. In accordance with ARSD 74:36:11:02, the owner or operator shall obtain an initial fuel supplier certification for the first load of ultra low sulfur distillate oil 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. Distillate oil means fuel oil that complies with the specifications for fuel oil

numbers 1 or 2. Residual oil means crude oil, fuel oil that does not comply with the specifications under the definition of distillate oil, and 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 0.0015 weight percent sulfur.

In the case where a fuel supplier certification is not obtained, the owner or operator shall collect a grab sample from the distillate oil storage tank. The grab sample shall be analyzed to determine the sulfur content of the distillate oil in the storage tank prior to burning the distillate oil.

The owner or operator shall obtain an initial fuel supplier certification certifying that the natural gas purchased or received is classified as pipeline quality natural gas as defined in 40 CFR § 72.2.

8.9 Initial certification of continuous emission monitoring system. In accordance with ARSD 74:36:11:02, the owner or operator shall conduct the initial certification of each continuous emission monitoring system required in chapter 9.0 of this permit within 60 days of achieving maximum production or within 180 days after initial startup of the electric generating station, whichever comes first.

9.0 CONTINUOUS EMISSION MONITORING SYSTEMS

9.1 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 Btu 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 the unit 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.

9.2 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 the unit 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.

10.0 RECOMMENDATION

A review of this facility indicates it can operate in compliance with South Dakota's Air Pollution Control rules and the federal Clean Air Act. The Secretary, therefore, recommends that the Board of Minerals and Environment issue this permit with conditions to ensure compliance with SDCL 34A-1 and the federal Clean Air Act. Any questions pertaining to the Secretary's recommendation should be directed to Marlys Heidt, Natural Resources Project Engineer, at (605) 773-3151.