

**Permit #:** 28.0802-02  
**Effective Date:** January 11, 2008  
**Expiration Date:** January 11, 2013

The seal of the State of South Dakota is a circular emblem with a serrated outer edge. It features a central landscape scene with a river, a windmill, and a plow. Above the scene is a banner with the motto "UNDER GOD THE PEOPLE RULE". The words "STATE OF SOUTH DAKOTA" are written in an arc across the top, and "GREAT SEAL." is written in an arc across the bottom. The year "1889" is prominently displayed at the bottom center of the seal.

**SOUTH DAKOTA DEPARTMENT OF  
ENVIRONMENT AND NATURAL RESOURCES  
TITLE V AIR QUALITY 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 operate is hereby issued by the Secretary of the Department of Environment and Natural Resources. This permit authorizes such owner to operate the unit(s) listed in Table 1-1 under the listed conditions.

### **A. Owner**

#### **1. Company Name and Mailing Address**

Black Hills Corporation  
P.O. Box 1400  
Rapid City, SD 57709-1400

#### **2. Actual Source Location if Different from Above**

2900 Lange Road  
NE ¼, Section 22, T2N, R7E, Pennington County

#### **3. Permit Contact**

Tim Rogers, Environmental Specialist  
(605) 721-2286

#### **4. Facility Contact**

Ron Kocourek, Plant Manager  
(605) 721-2210

#### **5. Responsible Official**

Mark Lux, Vice President of Power Delivery  
(303) 568-3241

### **B. Permit Revisions or Modifications**

Not applicable

### **C. Type of Operation**

Black Hills Corporation operates one simple cycle combustion turbine for production of electricity at its Lange facility.

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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 submitted and dated March 5, 2003, unless modified by the conditions of this permit. The control equipment shall be operated in manner that achieves compliance with the conditions of this permit at all times. 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.

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

<b>Unit</b>	<b>Description</b>	<b>Maximum Operating Rate</b>	<b>Control Device</b>
<b>#1</b>	General Electric, model #LM6000PD, simple cycle combustion turbine equipped with a low NOx burner. The simple cycle combustion turbine is fired with natural gas.	325 million Btus per hour heat input based on the lower heating value of the fuel fired.	Not Applicable
<b>#2</b>	Turbine inlet air heater, model CT-1, equipped with a low NOx burner. The turbine inlet air heater is fired with natural gas.	17.5 million Btus per hour heat input.	Not Applicable
<b>#3</b>	Industrial Cooling Tower	492,000 gallons/hour	Not Applicable

**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 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 Laws (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 74:36:05:16.01(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 that 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 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 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 AMENDMENT AND MODIFICATION CONDITIONS**

**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, and the proposed changes to this permit.

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 can not be constructed until the Secretary takes final action on the proposed change. 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 that the proposed change is an administrative permit amendment. 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 at the source;
3. Requires more frequent monitoring or reporting by the source;
4. The ownership or operational control of a source change and the Secretary determines that 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 that 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 that the proposed change is a permit modification. 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 record keeping 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 any proposed change that meets the definition of a modification in ARSD 74:36:01:10 or is not an administrative amendment or a minor permit amendment. Modification is defined as a physical change or change in operation that increases the amount of air pollutant emitted by the source or results in the emission of an air pollutant not previously emitted. 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.

**3.5 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.

**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 that describes 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 that will result 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 that 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.

**3.7 Changing fuels for Unit #1.** In accordance with ARSD 74:36:07:18, as referenced to 40 CFR § 60.330, Unit #1 shall be fueled with natural gas. The owner or operator shall apply for and obtain approval from the Secretary before other fuels can be used.

## **4.0 PERMIT RENEWAL REQUIREMENTS**

**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 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 RECORD KEEPING AND REPORTING REQUIREMENTS**

**5.1 Record keeping 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. 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 or may be submitted electronically if prior approval is provided by the Secretary:

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 ARSD 74:36:05:16.01, 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.

**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 Operational records.** In accordance with ARSD 74:36:07:01, as referenced to 40 CFR § 60.7(b), the owner or operator shall maintain the following records related to the operation of Unit #1:

1. Occurrence and duration of any startup, shutdown, or malfunction; and
2. Any periods during which a continuous emission monitoring system is inoperable.

**5.5 Monitoring log.** In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall maintain a monitoring log. The following information shall be recorded in the monitoring log within two days of each emergency exceedance:

1. The date of the emergency exceedance and the date the emergency exceedance was reported to the Secretary;
2. The cause(s) of the emergency;
3. The reasonable steps taken to minimize the emissions during the emergency; and
4. A statement that the permitted equipment was at the time being properly operated.

**5.6 Semiannual report.** In accordance with ARSD 74:36:09, as referenced to 40 CFR § 52.21 and ARSD 74:36:07:18, as referenced to 40 CFR §§ 60.7(c) and 60.334(j), the owner or operator shall submit a semiannual 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 semiannual report;
2. Any period during which the sulfur content of the fuel being fired in Unit #1 exceeds 0.8 percent by weight. If sampling did not occur during the reporting period or no exceedance occurred, the semiannual report shall state that no sampling and/or exceedance occurred;
3. Any period in which the nitrogen oxide concentration (parts per million) or air emission limit (pounds per hour) in permit condition 6.7 is exceeded based on the compliance period. In the case where no exceedance has occurred, the semiannual report shall state that no exceedance occurred. If an exceedance occurs, the report shall identify the following:
  - a. The date, time, and time period of each exceedance;
  - b. Magnitude of the exceedance;
  - c. Cause of the exceedance; and
  - d. Measures taken to bring the operations back into compliance.
4. The magnitude, date and time period for each period in which the nitrogen oxide emission limit in permit condition 6.6 is exceeded based on the compliance period. 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. In the case where no exceedance has occurred, the semiannual report shall state that no exceedance occurred;

5. The date and time identifying each period during which the continuous emission monitoring system was inoperable and did not collect a valid one-hour average while Unit #1 was operational. Monitoring downtime does not include zero and span checks and the nature of the system repairs and adjustments. In the case when there was no time in which the continuous monitoring system was inoperable and did not collect a valid one-hour period while the unit was operational, the semiannual report shall state that the continuous monitoring system was operational at all times
7. Any three hour average carbon monoxide concentration measured by the carbon monoxide analyzer that indicates an exceedance of the carbon monoxide emission limit in permit condition 6.7.

The semiannual report shall be postmarked no later than the 30<sup>th</sup> day following the end of each 6-month period (i.e. July 30 and January 30).

**5.7 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, record keeping, 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;
4. In accordance with ARSD 74:36:16:01(9) and 40 CFR § 72.9(c)(1), the owner or operator shall include a statement that Black Hills Corporation held sulfur dioxide allowances in an account for Unit #1 and #2 that equaled or exceeded the actual sulfur dioxide emissions from the units for the previous calendar year; and
5. Certification statement required in permit condition 5.3.

**5.8 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) 773-5286.

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. Description of the permit violation and its cause(s);
2. Duration of the permit violation, including exact dates and times; and
3. 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 74:36:09, as referenced to 40 CFR § 52.21, and 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.

**6.2 Visibility exceedances.** In accordance with ARSD 74:36:09, as referenced to 40 CFR § 52.21, and ARSD 74:36:12:02, an exceedance of the operating limit in permit condition 6.1 is not considered a violation during brief periods of 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 of the source is not a malfunction and is considered a violation.

**6.3 Total suspended particulate matter limits.** In accordance with ARSD 74:36:06:02(1), the owner or operator shall not allow the emission of total suspended particulate matter in excess of the emission limit specified in Table 6-1 for the appropriate permitted unit, operation, and process.

**Table 6-1 – Total Suspended Particulate Matter Emission Limit**

<b>Unit</b>	<b>Description</b>	<b>Emission Limit</b>
<b>#1</b>	General Electric, model #LM6000PD, simple cycle combustion turbine.	0.4 pounds per million Btu heat input
<b>#2</b>	Turbine inlet air heater, model CT-1.	0.6 pounds per million Btu heat input

**6.4 Sulfur dioxide limits.** In accordance with ARSD 74:36:06:02(2), the owner or operator shall not allow the emission of sulfur dioxide in excess of the emission limit specified in Table 6-2 for the appropriate permitted unit, operations, and process.

**Table 6-2 – Sulfur Dioxide Emission Limit**

<b>Unit</b>	<b>Description</b>	<b>Emission Limit</b>
<b>#1</b>	General Electric, model #LM6000PD, simple cycle combustion turbine.	3.0 pounds per million Btu heat input
<b>#2</b>	Turbine inlet air heater, model CT-1.	3.0 pounds per million Btu heat input

Compliance with the sulfur dioxide emission limit is based on a three-hour rolling average, which is the arithmetic average of three contiguous one-hour periods.

**6.5 Fuel sulfur content limit.** In accordance with ARSD 74:36:07:18, as referenced to 40 CFR § 60.333(b), no owner or operator shall burn natural gas in Unit #1, which contains sulfur in excess of 0.8 percent by weight.

**6.6 Nitrogen oxide emission limit.** In accordance with ARSD 74:36:07:18, as referenced to 40 CFR § 60.332(a)(1) and (b), the owner or operator shall limit the nitrogen oxide concentration in the exhaust gases from Unit #1 to less than 130 parts per million by volume on a dry basis at 15 percent oxygen. In accordance with ARSD 74:36:07:18, as referenced to 40 CFR § 60.334(c), compliance with this nitrogen oxide emission limit will be based on continuous emission monitoring system readings unless the owner or operator obtains prior approval from the Secretary. In accordance with ARSD 74:36:07:18, as referenced to 40 CFR § 60.8(c), emissions in excess of 130 parts per million by volume on a dry basis at 15 percent oxygen during periods of startup, shutdown, and malfunctions shall not constitute a violation. An hour of excess emissions shall be any unit operating hour in which the 4-hour rolling average nitrogen oxide concentration exceeds the applicable emission limit in §60.332(a)(1) or (2).

**6.7 PSD emission limit.** In accordance with ARSD 74:36:09, as referenced to 40 CFR § 52.21, the owner or operator shall limit the air emissions from Unit #1 to less than or equal to the applicable limit in Table 6-3.

**Table 6-3 – PSD Emission Limits**

<b>Air Pollutant</b>	<b>Unit #1 <sup>1</sup></b>	
	<b>ppmvd <sup>2</sup></b>	<b>pounds/hour</b>
PM <sub>10</sub>		6.0 <sup>3</sup>
Nitrogen Oxide	25.0 <sup>4</sup>	33.0 <sup>4</sup>
Carbon Monoxide	25.0 <sup>3</sup>	21.0 <sup>3</sup>
Volatile Organic Compounds		8.0 <sup>3</sup>

<sup>1</sup> – Unit #1 must comply with the ppmvd and pounds per hour emission limit;

<sup>2</sup> – Parts per million by volume on a dry basis at 15 percent oxygen;

<sup>3</sup> – Compliance with the particulate matter, carbon monoxide, and volatile organic compound limits will be based on stack performance tests; and

<sup>4</sup> – The nitrogen oxide limit is based on a 24-hour rolling average during normal operating conditions. Startups, shutdowns, malfunctions, and periods in which the turbine is not operating shall be excluded from determining the 24-hour rolling average.

**6.8 Restriction on water treatment chemicals for cooling towers.** In accordance with ARSD 74:36:08:11, as referenced to 40 C.F.R. §§ 63.402 and 63.404(b), no owner or operator shall use chromium based water treatment chemicals in an industrial process cooling tower. A cooling water sample residual hexavalent chromium concentration in excess of 0.5 parts per million by weight shall be considered a violation.

**6.9 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 source, 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.

**6.10 Circumvention not allowed.** In accordance with ARSD 74:36:05:47.01, 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.

**6.11 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.** 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 that outlines what needs to be completed for approval.

**7.5 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.

**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;
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.

**7.7 Additional carbon monoxide and nitrogen oxide performance tests.** In accordance with ARSD 74:36:09, as referenced to 40 CFR § 52.21 and ARSD 74:36:11:02, the owner or operator shall conduct a performance test on Unit #1 where the carbon monoxide analyzer indicates that the carbon monoxide emission limit in permit condition 6.7 may be exceeded. This would be demonstrated by the average of three consecutive one-hour readings exceeding the carbon monoxide emission limit in permit condition 6.7. The performance test shall be performed within 60 days of the occurrence.

In addition, a performance test shall be conducted on Unit #1 where the continuous emission monitor indicates that the nitrogen oxide emission limit in permit condition 6.6 may be exceeded. This would be demonstrated by the average of four consecutive one-hour readings exceeding the nitrogen oxide emission limit in permit condition 6.6. The performance test shall be performed within 60 days of the occurrence.

## **8.0 MONITORING**

**8.1 Monitoring sulfur content of natural gas.** In accordance with ARSD 74:36:09, as referenced to 40 CFR § 52.21 and ARSD 74:36:07:18, as referenced to 40 CFR § 60.334(h)(1) and (3), the owner or operator shall monitor the sulfur content of the natural gas being fired in Unit #1 under one of the following methods:

1. The owner or operator shall monitor the total sulfur content of the fuel being fired in the turbine. The sulfur content of the fuel must be determined using total sulfur methods described in 40 CFR § 60.335(b)(10). Alternatively, if the total sulfur content of the gaseous fuel during the most recent performance test was less than 0.4 weight percent (4,000 parts per million by weight), ASTM D4084–82, 94, D5504–01, D6228–98, or Gas Processors Association Standard 2377–86, which measure the major sulfur compounds may be used; or
2. The owner or operator may elect not to monitor the total sulfur content of the gaseous fuel combusted in the turbine, if the gaseous fuel is demonstrated to meet the definition of natural gas in 40 CFR § 60.331(u). The owner or operator shall use one of the following sources of information to make the required demonstration:
  - a. The gas quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the gaseous fuel, specifying that the maximum total sulfur content of the fuel is 20.0 grains per 100 standard cubic foot or less; or
  - b. Representative fuel sampling data which show that the sulfur content of the gaseous fuel does not exceed 20 grains per 100 standard cubic foot. At a minimum, the amount of fuel sampling data specified in section 2.3.1.4 or 2.3.2.4 of appendix D to 40 CFR Part 75 is required.

**8.2 Sulfur dioxide emission data.** In accordance with ARSD 74:36:09, as referenced to 40 CFR § 52.21 and ARSD 74:36:13:01, the owner or operator shall measure and record sulfur dioxide emissions from Unit #1 based on methods contained in 40 CFR Part 75.

**8.3 Continuous emission monitoring system.** In accordance with ARSD 74:36:13:01, ARSD 74:36:16, as referenced to 40 CFR § 75.12(a), and ARSD 74:36:07:18, as referenced to 40 CFR § 60.334(c), the owner or operator shall install, certify, operate, and maintain a nitrogen oxide continuous emission monitoring system on Unit #1. The continuous emission monitoring system shall measure and record the emissions at all times, including periods of startup, shutdown, and malfunctions. Monitor downtime is allowed for system breakdowns, repairs, calibration checks, quality assurance audits and span adjustment, and at other time periods at the discretion of the Secretary. In accordance with ARSD 74:36:16, in accordance with 40 CFR § 75.40(a) and ARSD 74:36:07:18, as referenced to 40 CFR § 60.334(c), the owner or operator may apply to the Secretary for approval of an alternative monitoring system to determine average hourly emission data for nitrogen oxide instead of using the continuous emission monitoring system.

**8.4 Performance specifications and quality assurance.** In accordance with ARSD 74:36:16:04, as referenced to 40 CFR § 75.10(b), the nitrogen oxide continuous emission monitoring system on Unit #1 shall meet the performance specifications in 40 CFR Part 60, Appendix B (Performance Specifications 2 and 3), except the 7-day calibration drift is based on the unit operating days, not calendar days, and 40 CFR Part 75, Appendix A. In addition, the nitrogen oxide continuous emission monitoring system shall meet the quality assurance requirements in 40 CFR Part 75, Appendix B.

**8.5 Determining compliance with continuous monitoring data.** In accordance with ARSD 74:36:13:05, the Secretary may take enforcement action based on the information obtained from the continuous emission monitoring system for nitrogen oxide. Compliance with the nitrogen oxide concentration and hourly emission rate in permit condition 6.7 will be based on a 24-hour rolling average. Compliance with the carbon monoxide concentration and hourly emission rate in permit condition 6.7 will be based on the average of three consecutive one-hour readings. The continuous emission monitoring system(s) shall be used as an indicator to determine if a stack performance test for nitrogen oxide or carbon monoxide is necessary to determine compliance with permit condition 6.7.

**8.6 Carbon monoxide analyzer.** In accordance with ARSD 74:36:05:16.01(9) and 74:36:09:02, as referenced to 40 CFR § 52.21, the owner or operator shall use an analyzer to measure the carbon monoxide concentration, in parts per million, being emitted from Unit #1. At a minimum, the carbon monoxide concentration shall be measured and recorded once per month. If the concentration is in excess of the carbon monoxide emission limit in permit condition 6.7, the concentration shall be measured and recorded within 60 minutes and 120 minutes of the initial reading. The carbon monoxide analyzer shall be calibrated and used in accordance with the manufacturers' specifications. The carbon monoxide analyzer shall be used

as an indicator to determine if a stack performance test for carbon monoxide is necessary to determine compliance with permit condition 6.7.

## **9.0 ACID RAIN PROGRAM**

**9.1 Operating in accordance with acid rain permit application.** The owner or operator shall operate Unit #1 in accordance with the standard requirements set forth in the phase II acid rain permit application submitted April 27, 2000 (see Appendix A).

**9.2 Reporting sulfur dioxide allowances.** In accordance with ARSD 74:36:16:01(9) and 40 CFR § 72.9(c)(1), starting in calendar year 2001, and each year thereafter, the annual compliance certification report required in permit condition 5.8 shall include a statement that the owner or operator held sulfur dioxide allowances in the account for Unit #1 that equaled or exceeded the actual sulfur dioxide emissions from the unit for the previous calendar year.

## **10.0 RAPID CITY NEAP – State Only**

**10.1 Unpaved roads and parking areas.** In accordance with ARSD 74:36:09, as referenced to 40 CFR § 52.21 and ARSD 74:36:05:16.01(8), the owner or operator shall implement one of the following particulate emission control measures to all unpaved roads and parking areas owned by Black Hills Corporation that go in and out of the Lange facility:

1. Apply a chemical stabilizer or water to all secondary roads in sufficient quantity and frequency to suppress particulate matter generation. Compliance shall be determined by visible emissions to the ambient air of a density less than 20 percent opacity for a series of two minute averages with at least six minutes of readings. The Tennessee Visual Emissions Method 1 will be used to determine the opacity reading; or
2. Pave the secondary roads with tack seal, asphalt, recycled asphalt or concrete.

**10.2 Opacity readings.** In accordance with ARSD 74:36:09, as referenced to 40 CFR § 52.21 and ARSD 74:36:05:16.01(8), the owner or operator may exceed the opacity limit in permit condition 10.1 and 10.2 two times before the Secretary takes any action. In the event of a third exceedance, the Secretary will re-evaluate the Best Available Control Measure for the appropriate road. The Secretary shall notify the owner or operator in writing if a new Best Available Control Measure is required. The owner or operator will have 60 days from receiving the notification that requires a new Best Available Control Measure to develop and submit the new Best Available Control Measure to the Secretary. The Secretary shall approve the new Best Available Control Measure before the owner or operator implements new Best Available Control Measure.

An opacity reading taken during a high wind advisory event is not valid. A high wind advisory event occurs when the following weather conditions occur:

1. Peak wind gusts greater than 40 miles per hour; and
2. Average hourly wind speeds greater than 20 miles per hour.