Permit #: **28.0802-03**

Effective Date: **April 22, 2010**

Expiration Date: **April 22, 2015**

SOUTH DAKOTA DEPARTMENT OF

ENVIRONMENT AND NATURAL RESOURCES

TITLE V AIR QUALITY PERMIT

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 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) at the location designated below and under the listed conditions:

A. Owner

1. Company Name and Address

Basin Electric Power Cooperative
1717 East Interstate Avenue
Bismarck, North Dakota 58503-0564

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

Groton Generating Station
5 miles south of Groton, Brown County, South Dakota
SW ¼ of Section 18, Township 122 North, Range 60 West

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

Mike Fluharty
Vice President of Operations
(701) 233-0441

B. Permit Revisions or Modifications

Not applicable.

C. Type of Operation

An electrical generating facility.

TABLE OF CONTENTS

Page

1.0 STANDARD CONDITIONS 1

1.1 Operation of source 1
1.2 Duty to comply 1
1.3 Property rights or exclusive privileges 1
1.4 Penalty for violating a permit condition 2
1.5 Inspection and entry 2
1.6 Severability 2
1.7 Permit termination, modification, or revocation 2
1.8 Credible evidence 2

2.0 PERMIT FEES 2

2.1 Annual air fee required 3
2.2 Annual operational report 3
2.3 Annual air fee 3

3.0 PERMIT AMENDMENT AND MODIFICATION CONDITIONS 3

3.1 Permit flexibility 3
3.2 Administrative permit amendment 3
3.3 Minor permit amendment 4
3.4 Permit modification 4
3.5 Permit revision 5
3.6 Testing new fuels or raw materials 5

4.0 PERMIT RENEWAL REQUIREMENTS 5

4.1 Permit effective 5
4.2 Permit renewal 6
4.3 Permit expiration 6

5.0 RECORD KEEPING REQUIREMENTS 6

5.1 Record keeping and reporting 6
5.2 Signatory Requirements. 6
5.3 Certification statement 7
5.4 Monitoring nitrogen oxide emissions 7
5.5 Monitoring sulfur content of natural gas 7
5.6 Operational records 7
5.7 Monthly records 7
5.8 Annual records 7
5.9 Quarterly report 8
5.10 Annual compliance certification 9
5.11 Reporting permit violations. 9

6.0 CONTROL OF REGULATED AIR POLLUTANTS 9

6.1 Visibility limit 10

TABLE OF CONTENTS

Page

6.2 Visibility exceedances 10
6.3 Total suspended particulate matter limits 10
6.4 Fuel sulfur content limits 10
6.5 Nitrogen oxide emission limit 10
6.6 Prevention of significant deterioration exemption 10
6.7 Air emission exceedances – emergency conditions 11
6.8 Circumvention not allowed 11
6.9 Minimizing emissions 11
6.10 Ice fog exemption 11
6.11 Water restriction exemption 11

7.0 PERFORMANCE TESTS 12

7.1 Performance test may be required 12
7.2 Test methods and procedures 12
7.3 Representative performance test 12
7.4 Submittal of test plan 12
7.5 Notification of test 12
7.6 Performance test report. 13
7.7 Certification of continuous emission monitoring systems. 13

8.0 MONITORING 13

8.1 Continuous emission monitoring system 13
8.2 Performance specifications and quality assurance. 13
8.3 Re-certification of the continuous emission monitoring system. 14
8.4 Monitoring data. 15
8.5 Determining compliance with continuous emission monitoring data. 15

9.0 ACID RAIN PROGRAM 15

9.1 Operating in accordance with acid rain permit application 15

1.0 STANDARD CONDITIONS

1.1 <u>Operation of source.</u> 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 September 30, 2009, unless modified by the conditions of this permit. Except as otherwise provided herein, the control equipment shall be operated in a 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

Unit	Description	Maximum Operating Rate	Control Device
#1	GE natural gas combustion turbine, model number LMS100. The turbine is fired on natural gas.	787 million Btus per hour heat input	A water injection system and a carbon monoxide reactor
#2	GE natural gas combustion turbine, model number LMS100. The turbine is fired on natural gas.	787 million Btus per hour heat input	A water injection system and a carbon monoxide reactor

1.2 <u>Duty to comply.</u> 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 <u>Property rights or exclusive privileges.</u> 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-1-39 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 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 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, 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 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. 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 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. 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 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 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 record keeping 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 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.

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 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 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 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 **Monitoring nitrogen oxide emissions.** In accordance with ARSD 74:36:07:18, as referenced to 40 CFR § 60.334(d), the owner or operator shall monitor the nitrogen oxide emissions as outline in permit chapter 8.0.

5.5 **Monitoring sulfur content of natural gas.** In accordance with ARSD 74:36:07:18, as referenced to 40 CFR §§ 60.334(h), (i), and 60.335(b)(10), the owner or operator shall monitor the sulfur content of the fuel being fired in Unit #1 and Unit #2 with one of the following methods:

1. The owner or operator shall monitor the total sulfur content once per unit operating day. A minimum of three fuel samples shall be collected and analyzed with ASTM D1072-80,90 (Reapproved 1994); D3246-81, 92, 96; D4468-85 (Reapproved) 2000; or D6667-01; or
2. The owner or operator shall obtain the gas quality characteristics in a current, valid purchase contract for the natural gas, specifying that the maximum total sulfur content of the fuel is 20 grains per 100 standard cubic feet or less or obtain representative fuel sampling data which show that the sulfur content of the gaseous fuel does not exceed 20 grains per 100 standard cubic feet. At a minimum, the representative fuel sampling data must meet the requirements in 2.3.1.4 or 2.3.2.4 of appendix D to Part 75. –

5.6 **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 and Unit #2:

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

5.7 **Monthly records.** In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall calculate and record the amount of nitrogen oxide and carbon monoxide emissions, in tons, emitted into the ambient air from Unit #1 and Unit #2 and record the number of hours Unit #1 and Unit #2 operated during the month and during the 12-month rolling period for that month.

5.8 **Annual records.** In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall calculate and record the following amounts from January 1 to December 31 of each year:

1. The amount of natural gas burned in Unit #1 and Unit #2; and

2. The number of hours Unit #1 and Unit #2 operated.

The amount of natural gas consumed shall be based on production records, consumption records, purchase records, etc.

5.9 **<u>Quarterly report.</u>** In accordance with ARSD 74:36:05:16.01(9) and 74:36:07:18, as referenced to 40 CFR §§ 60.7(c) and 60.334(j), the owner or operator shall submit a quarterly report related to the operations of Unit #1 and Unit #2. 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. Each period during which an exemption for Unit #1 and Unit #2 are in effect because of ice fog. For each period, the ambient conditions existing during the period, the date and time the water injection system were deactivated, and the date and time the water injection system were reactivated shall be reported;
3. Any period in which the sulfur dioxide (fuel sulfur content) in permit condition 6.4 and the nitrogen oxide concentration (parts per million) in permit condition 6.5 for Unit #1and Unit #2 is exceeded based on the compliance period. 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.

   In the case where no exceedance has occurred, the quarterly report shall state that no exceedance has occurred.
4. Any period in which the nitrogen oxide or carbon monoxide limit in permit condition 6.6 is exceeded based on the 12-month rolling total for Unit #1 and Unit #2. 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.

   In the case where no exceedance has occurred, the quarterly report shall state that no exceedance has occurred.
5. Any period in which the continuous emission monitoring systems for Unit #1 and Unit #2 were inoperable and did not collect a valid one-hour average while the units were operational. The following information shall be submitted:
   a. The date, time and time period of each period during which the continuous monitoring system was inoperative and did not collect a valid one-hour period;
   b. The reason the continuous emission monitoring system is down; and
   c. The measures taken to bring the continuous emission monitoring system on line again and measures taken to prevent the reason the system went down from occurring again.

In the case when there was no time in which the continuous monitoring systems were inoperable and did not collect a valid one-hour period while the units were operational, the quarterly report shall state that the continuous monitoring systems were operational at all times.

6. For any period in which a temporary monitor for Unit #1 or Unit #2 is used. The following information shall be submitted:
   a. The unit which utilized the temporary monitor;
   b. The date and time the temporary monitor was used; and
   c. The number of days the temporary monitor was used during each month of the quarter.

   If a temporary monitor was not used, the quarterly report shall state that no temporary monitor was used during the reporting period.

The quarterly report shall be postmarked no later than the 30 days following the end of each calendar quarter.

5.10 **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; and
4. Certification statement required in permit condition 5.3.

5.11 **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 74:36:12:01, 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. 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 operating 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 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) and/or ARSD 74:36:06:03(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

Unit	Description	Emission Limit
#1	Combustion turbine	0.3 pounds per million Btu heat input
#2	Combustion turbine	0.3 pounds per million Btu heat input

6.4 **Fuel sulfur content limits.** In accordance with ARSD 74:36:07:18, as referenced to 40 CFR § 60.333(b), no owner or operator shall burn any fuel in Unit #1 or Unit #2, which contains sulfur in excess of 0.8 percent by weight.

6.5 **Nitrogen oxide emission limit.** In accordance with ARSD 74:36:07:18, as referenced to 40 CFR § 60.332 (a)(1) and (b), no owner or operator shall emit nitrogen oxide from Unit #1 and Unit #2 in excess of 75 parts per million at 15 percent oxygen on a dry basis. In accordance with ARSD 74:36:07:01, as referenced to 40 CFR § 60.8, air emissions in excess of the levels specified in this permit conditions during periods of startup, shutdown, and malfunction shall not be considered a violation.

6.6 **Prevention of significant deterioration exemption.** The owner or operator is exempt from a prevention of significant deterioration review for nitrogen oxides and carbon monoxide for Unit #1 and Unit #2. The exemption is based on the long term emission limits noted in Table 6-3. The first month of the 12-month rolling total for Unit #2 shall begin after a reasonable shakedown period. A reasonable shakedown period for Unit #2 shall not exceed 180 days from initial startup of Unit #2. The emissions from Unit #1 will continue to count against the 12-month rolling total. Any relaxation in those limits may require a full prevention of significant deterioration review as though construction had not commenced on Unit #1 or Unit #2.

Table 6-3 - Air Emission Limits for Unit #1 and Unit #2

Sir Pollutant	Long Term Emission Limit [1]
Nitrogen Oxide [2]	238 tons per 12-month rolling period
Carbon Monoxide [2]	238 tons per 12-month rolling period

[1] - Compliance with the long term limit shall be based on a 12-month rolling period. Each monthly emission rate shall be added to the 11 previous monthly emission rates. The result shall be compared to the long term emission limit.
[2] - The 12-month rolling period shall be based on the continuous emission monitoring data. The emissions from startup, shutdown, and malfunctions shall be included in the 12-month rolling period.

6.7 <u>Air emission exceedances – emergency conditions.</u> 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

6.8 <u>Circumvention not allowed.</u> 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.

6.9 <u>Minimizing emissions.</u> 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.

6.10 <u>Ice fog exemption.</u> In accordance with ARSD 74:36:07:18, as referenced to 40 CFR § 60.332(f), Unit #1 and Unit #2 are exempt from the nitrogen oxide emission limit in permit condition 6.5 when ice fog is deemed a traffic hazard by the owner or operator. "Ice fog" means an atmospheric suspension of highly reflective ice crystals.

6.11 <u>Water restriction exemption.</u> In accordance with ARSD 74:36:07:18, as referenced to 40 CFR § 60.332(i), Unit #1 and Unit #2 are exempt from the nitrogen oxide emission limit in permit condition 6.5 if the Secretary determines that mandatory water restrictions are required by

other governmental agencies because of drought conditions. This exemption will be allowed only while the mandatory water restrictions are in effect.

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 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 Certification of continuous emission monitoring systems. In accordance with ARSD 74:36:13:02, as referenced to 40 CFR § 60.13 and ARSD 74:36:16:04, as referenced to 40 CFR § 75.4(b), the owner or operator shall certify the nitrogen oxide and carbon monoxide continuous emission monitoring systems installed on Unit #2 no later than 90 days after initial startup of Unit #2.

8.0 MONITORING

8.1 Continuous emission monitoring system. In accordance with ARSD 74:36:13:01, the owner or operator shall install, certify, operate, and maintain a nitrogen oxide and a carbon monoxide monitoring system on Unit #1 and Unit #2. The continuous emission monitoring systems 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 adjustments, and at other time periods at the discretion of the Secretary.

8.2 Performance specifications and quality assurance. In accordance with ARSD 74:36:13:02, as referenced to 40 CFR § 60.13(a), the carbon monoxide continuous emission monitoring system on Unit #1 and Unit #2 shall meet the performance specifications in 40 CFR Part 60, Appendix B (Performance Specifications 4 or 4A for carbon monoxide). In addition, the continuous emission monitoring systems shall meet the quality assurance requirements in 40 CFR Part 60 Appendix F.

In accordance with ARSD 74:36:16:04, as referenced to 40 CFR § 75.1 the nitrogen oxide continuous emission monitoring system on Unit #1 and Unit #2 shall meet the performance specifications in 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.

8.3 **<u>Re-certification of the continuous emission monitoring system.</u>** In accordance with ARSD 74:36:13:01 and 74:36:16:04, the owner or operator shall notify the Secretary in writing prior to making any planned changes to the continuous emission monitoring systems that invalidates its certification. If the change was unforeseen, the owner or operator shall notify the Secretary in writing within five working days after making the change.

Changes that invalidate the certification status are the replacement of an analyzer, change in location or orientation of the sampling probe or site, modification to the flue gas handling system which changes its flow characteristics, or a change that in the Secretary's judgment significantly affects the ability of the system to measure or record the pollutant concentration and volumetric gas flow.

The following changes to a continuous emission monitoring system do not invalidate the certification:

1. Routine or normal corrective maintenance;
2. Replacement of parts on the manufacturer's recommended spare parts list;
3. Software modifications in the automated data acquisition and handling system, where the modification is only for the purpose of generating additional or modified reports; or
4. Temporary replacement of an analyzer with a similar analyzer.
   a. A calibration gas audit on the carbon monoxide continuous emission monitoring system on Unit #1 and Unit #2 shall be conducted in accordance with 40 CFR, Part 60, Appendix F § 5.1.2 within 24 hours of installing a temporary replacement analyzer. A two point calibration check shall be performed daily, thereafter, until the temporary replacement analyzer has been replaced with the original analyzer or the temporary replacement analyzer has been certified. A temporary replacement analyzer that is used on a unit for more than 30 operating days in a calendar year shall be certified. If the temporary analyzer is used for one hour or more during the day, that constitutes one operating day. The certification test shall be performed within 60 days of exceeding the 30 operating day limit. The results of the certification test shall be submitted to the Secretary within 60 days after completing the test.
   b. A temporary "like kind" replacement analyzer, meeting 40 CFR Part 75 Appendix B criteria, shall be used if the nitrogen oxide continuous emission monitoring system on Unit #1 or Unit #2 needs service. If the temporary replacement analyzer is to be certified, the results of the RATA shall be submitted to the Secretary within 60 days after completing the test.

In accordance with ARSD 74:36:13:02, as referenced to 40 CFR § 60.13(c), the owner or operator of the carbon monoxide continuous monitoring system on Unit #1 and Unity #2 shall re-certify the continuous emission monitoring system within 90 days of completing any change which invalidates the monitor's certification status. A calibration gas audit shall be conducted in accordance with 40 CFR, Part 60, Appendix F § 5.1.2 within 24 hours of making a change that

invalidates the monitor's certification status. A two point calibration check shall be performed daily, thereafter, until the re-certification test is completed. The results of the re-certification test shall be submitted to the Secretary within 60 days after completing the test.

In accordance with ARSD 74:36:16:04, as referenced to 40 CFR § 75.20, the owner or operator shall re-certify the nitrogen oxide continuous emission monitoring system on Unit #1 and Unit #2 in accordance with 40 CFR, Part 75, Appendix A. The results of the re-certification test shall be submitted to the Secretary within 60 days after completing the test.

8.4 Monitoring data. In accordance with ARSD 74:36:13:02, the continuous emission monitoring systems for Unit #1 and Unit #2 shall monitor carbon monoxide concentrations in parts per million by volume on a dry basis and the emission rate in pounds per hour. The carbon monoxide concentrations and emission rates shall be based on one-hour averages computed from four or more data points equally spaced over each one-hour period. A one-hour period starts at the beginning of the hour and ends at the beginning of the following hour. Data recorded during monitor downtime or when Unit #1 and Unit #2 are not operating shall be considered invalid data points and not included in the data averages. For one-hour periods during monitor calibrations, quality control audits or other required maintenance, a minimum of two data points at least 15 minutes apart must be collected to consider the one-hour average valid. For one hour periods in which Unit #1 and/or Unit #2 operated for 15 consecutive minutes or less, a minimum of one data point must be collected to consider the one-hour average valid. A data acquisition and handling system shall perform all necessary calculations.

In accordance with ARSD 74:36:16:04, as referenced to 40 CFR § 75.10(a)(2), the nitrogen oxide continuous emission monitoring system on Unit #1 and Unit #2 shall measure and record nitrogen oxide emissions in parts per million and pounds per million Btu. The data acquisition and handling system shall perform all necessary calculations to report nitrogen oxide emission rates.

8.5 Determining compliance with continuous emission monitoring data. In accordance with ARSD 74:36:13:05, the Secretary may take enforcement action based on the information obtained from the nitrogen oxide and carbon monoxide continuous emission monitoring systems. Compliance with the nitrogen oxide and carbon monoxide limits in Table #3 shall be based on a 12-month rolling sum.

9.0 ACID RAIN PROGRAM

9.1 Operating in accordance with acid rain permit application. The owner or operator shall operate each applicable unit in accordance with the standard requirements set forth in the phase II acid rain permit application submitted December 10, 2004 (see Attachment A).

Appendix A

Acid Rain Permit Application

United States
Environmental Protection Agency
Acid Rain Program

OMB No. 2060-0258

ACID RAIN PERMIT APPLICATION

For more information, see instructions and refer to 40 CFR 72.30 and 72.31

This submission is: ☒ New ☐ Revised

STEP 1

Identify the source by plant name, State, and ORIS code.

Plant Name	State	ORIS Code
Groton Generating Station Unit 2	**SD**	**56238**

STEP 2

Enter the unit ID# for every affected unit at the affected source in column "a." For new units, enter the requested information in columns "c" and "d."

a	b	c	d
Unit ID#	Unit Will Hold Allowances in Accordance with 40 CFR 72.9(c)(1)	New Units Commence Operation Date	New Units Monitor Certification Deadline
CT002	Yes	June 1, 2008	August 1, 2008
	Yes		
	Yes		
	Yes		
	Yes		
	Yes		
	Yes		
	Yes		
	Yes		
	Yes		
	Yes		
	Yes		
	Yes		
	Yes		
	Yes		
	Yes		
	Yes		

Step 3, Cont'd.

Liability, Cont'd.

(5) Any provision of the Acid Rain Program that applies to an affected source (including a provision applicable to the designated representative of an affected source) shall also apply to the owners and operators of such source and of the affected units at the source.
(6) Any provision of the Acid Rain Program that applies to an affected unit (including a provision applicable to the designated representative of an affected unit) shall also apply to the owners and operators of such unit. Except as provided under 40 CFR 72.44 (Phase II repowering extension plans) and 40 CFR 76.11 (NOx averaging plans), and except with regard to the requirements applicable to units with a common stack under 40 CFR part 75 (including 40 CFR 75.16, 75.17, and 75.18), the owners and operators and the designated representative of one affected unit shall not be liable for any violation by any other affected unit of which they are not owners or operators or the designated representative and that is located at a source of which they are not owners or operators or the designated representative.
(7) Each violation of a provision of 40 CFR parts 72, 73, 74, 75, 76, 77, and 78 by an affected source or affected unit, or by an owner or operator or designated representative of such source or unit, shall be a separate violation of the Act.

Effect on Other Authorities

No provision of the Acid Rain Program, an Acid Rain permit application, an Acid Rain permit, or an exemption under 40 CFR 72.7 or 72.8 shall be construed as:
(1) Except as expressly provided in title IV of the Act, exempting or excluding the owners and operators and, to the extent applicable, the designated representative of an affected source or affected unit from compliance with any other provision of the Act, including the provisions of title I of the Act relating to applicable National Ambient Air Quality Standards or State Implementation Plans;
(2) Limiting the number of allowances a unit can hold; provided, that the number of allowances held by the unit shall not affect the source's obligation to comply with any other provisions of the Act;
(3) Requiring a change of any kind in any State law regulating electric utility rates and charges, affecting any State law regarding such State regulation, or limiting such State regulation, including any prudence review requirements under such State law;
(4) Modifying the Federal Power Act or affecting the authority of the Federal Energy Regulatory Commission under the Federal Power Act; or,
(5) Interfering with or impairing any program for competitive bidding for power supply in a State in which such program is established.

Certification

STEP 4

Read the certification statement, sign, and date

I am authorized to make this submission on behalf of the owners and operators of the affected source or affected units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.

Name: Vernon R. Laning	
Signature Vernon R. Laning	Date 11-28-06