

**AIR EMISSION PERMIT NO. 03700003- 001
IS ISSUED TO**

Northern States Power Company

NSP - BLACK DOG
1400 Black Dog Road
Burnsville, Dakota County, Minnesota 55337

The emission units, control equipment and emission stacks at the stationary source authorized in this permit are as described in the following permit application(s):

Permit Type	Application Date
Total Facility Operating Permit/ Acid Rain Permit with NO _x Averaging Plan	November 6, 1995

This permit authorizes the Permittee to operate and construct the stationary source at the address listed above unless otherwise noted in Table A. The Permittee must comply with all the conditions of the permit and with all general conditions listed in Minn. R. 7007.0800, subp. 16, and all standard permit requirements listed in 40 CFR § 70.6(a) which are incorporated by reference. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

Permit Type: Federal ; Part 70/Acid Rain

Issue Date: August 13, 1998

Expiration: August 13, 2003
All Title I Conditions do not expire.

Michael J. Sandusky
Division Manager
Air Quality Division

for Peder A. Larson
Commissioner
Minnesota Pollution Control Agency

DZ:lao

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NOTICE TO THE PERMITTEE:

Your stationary source may be subject to the requirements of the Minnesota Pollution Control Agency's (MPCA) solid waste, hazardous waste, and water quality programs. If you wish to obtain information on these programs, including information on obtaining any required permits, please contact the MPCA general information number at:

Metro Area	(612)296-6300
Outside Metro Area	1-800-657-3864
TTY	(612)282-5332

The rule governing these programs are contained in Minn. R. chs. 7000-7105. Written questions may be sent to: Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, Minnesota 55155-4194.

Questions about this air emission permit or about air quality requirements can also be directed to the telephone numbers and address listed above.

PERMIT SHIELD:

Subject to the limitations in Minn. R. 7007.1800, compliance with the conditions of this permit shall be deemed compliance with the specific provision of the applicable requirement identified in the permit as the basis of each condition. Any requirements which have been determined not to apply are listed in Table A of this permit.

The permit shield, however does not apply to:

1. **Any national ambient air quality standards adopted under section 109 of the Clean Air Act or increment or visibility under Part C of Title I of the Clean Air Act,**
2. **Any state ambient air quality standard under Minn. R. ch. 7009, and**
3. **The state noise pollution control rules, Minn. R. ch. 7030.**

FACILITY DESCRIPTION:

The NSP Black Dog facility has a total plant electrical output rating of 524 MW. Two of the four boilers (Boilers No. 3 and 4) at the facility are wall fired dry bottom coal fired boilers. Boiler one is a tangentially fired coal boiler and Boiler No. 2 is a fluidized bed coal fired boiler. All boilers discharge emissions to the atmosphere through a common 600 foot stack. Boiler No. 1 has a maximum rated heat input capacity of 910 MMBtu/hr, Boiler No. 2 has a maximum rated heat input capacity of 1323 MMBtu/hr, boiler 3 is rated at 1176 MMBtu/hr and Boiler No. 4 is rated at 1892 MMBtu/hr. In addition to the four boilers, the plant also operates and maintains various coal and ash handling and storage facilities. Emissions of particulate matter from the main boilers are control by Electrostatic Precipitators (ESP) which remove particulates from the stack gases. Gaseous emissions from the main boilers are not effectively controlled by any post combustion control device at this time. Particulate emissions from coal handling equipment is controlled through the use of water sprays and baghouses. Fugitive emissions are controlled through the use of water application and operational constraints.

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Table A contains limits and other requirements with which your facility must comply. The limits are located in the first column of the table (What To do). The limits can be emission limits or operational limits. This column also contains the actions that you must take and the records you must keep to show that you are complying with the limits. The second column of Table A (Why to do it) lists the regulatory basis for these limits. Appendices included as conditions of your permit are listed in Table A under total facility requirements.

Subject Item: Total Facility

What to do	Why to do it
A. OPERATIONAL REQUIREMENTS	hdr
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
Operating practices: Clean up all coal spilled on roads or access areas as soon as practicable using methods that minimize the amount of dust suspended.	Minn. R. 7011.1105 (I)
Access areas, roads, parking facilities: (1) Install asphalt or concrete surfaces or chemical agents on all active truck haul roads of the coal handling facility when the coal throughput by truck is 200,000 tons or greater. All paved roads and areas shall be cleaned to minimize the discharge to the atmosphere of fugitive particulate emissions. Such cleaning shall be accomplished in a manner which minimizes resuspension of particulate matter. Access areas surrounding coal stockpiles and parking facilities which are located within a coal handling facility shall be treated with water, oils, or chemical agents.	Minn. R. 7011.1105 (A)
Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150.	Minn. R. 7011.0150
Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not federally enforceable.	Minn. R. 7030.0010 - 7030.0080
Comply with Fugitive Emission Control Plan: The Permittee shall follow the actions and record keeping specified in the control plan. The plan may be amended by the Permittee with the Commissioner's approval. If the Commissioner determines the Permittee is out of compliance with Minn. R. 7011.0150 or the fugitive control plan, then the Permittee may be required to amend the control plan and/or to install and operate particulate matter ambient monitors as requested by the Commissioner.	Minn. Stat. Section 116.07, subd. 4a and Minn. R. 7007.0800, subp. 2
Inspections: Upon presentation of credentials and other documents as may be required by law, allow the Agency, or its representative, to enter the Permittee's premises, to have access to and copy any records required by this permit, to inspect at reasonable times (which include any time the source is operating) any facilities, equipment, practices or operations, and to sample or monitor any substances or parameters at any location. The permittee may require MPCA staff to be accompanied by NSP staff during any inspection.	Minn. R. 7007.0800, subp. 9(A)
Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted.	Minn. R. 7011.0020
Install: due 180 days after Permit Issuance . Install a fence or other agency approved barrier to limit public access to facility property. The location of barrier shall be determined by latest air dispersion modeling analysis.	Minn. R. 7009.0020
B. POLLUTION CONTROL EQUIPMENT REQUIREMENTS	hdr
Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated, unless otherwise noted in Table A.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
C. TESTING REQUIREMENTS	hdr
Performance Test: Conduct all performance tests in accordance with Minn. R. ch. 7017, unless otherwise noted in Tables A, B, or C.	Minn. R. ch. 7017
Operating and/or production limits will be placed on emission units based on operating conditions during performance testing. Limits set as a result of a performance test (conducted before or after permit issuance) apply until new operating/production limits are set following formal review of a performance test as specified by Minn. R. 7017.2025.	Minn. R. 7017.2025
This requirement does not apply to EU 001, EU 003, and EU 004. For operating limit requirements applicable to EU 001, EU 003, and EU 004, see requirements pertaining to Short Term Emergency and Testing (STET) and Boiler Operating Conditions in EU 001, EU 003, and EU 004.	
D. MONITORING REQUIREMENTS	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Monitoring Activities and Equipment: Where applicable, initialize monitoring activities and install or make needed repairs to monitoring equipment within 60 days of issuance of the permit if monitoring activities are not performed or monitoring equipment is not installed and operational prior to permit issuance.	Minn. R. 7007.0800, subp. 4(D)
Monitoring Activities and Equipment: Unless otherwise noted in Tables A, B, and/or C, monitoring of a process or of control equipment connected to that process, is not required during periods when the process is shutdown, including during system breakdowns, repairs, calibration checks, and zero and span adjustments (as applicable). Where applicable, monitoring records shall reflect any such periods of process shutdown.	Minn. R. 7007.0800, subp. 4(D)
Monitoring Equipment Calibration: Where applicable, annually calibrate all required monitoring equipment other than continuous emission monitors (requirements applying to continuous emission monitors are listed separately in this permit), where applicable.	Minn. R. 7007.0800, subp. 4(D)
E. RECORD KEEPING	hdr
Record keeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007.1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350, subp. 2), including records of the emissions resulting from those changes.	Minn. R. 7007.0800, subp. 5(B)
Record keeping: Retain all records at the stationary source for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).	Minn. R. 7007.0800, subp. 5(C)
Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment.	Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)
F. REPORTING	hdr
Oral or Written (faxed) Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner of any deviation from the permit conditions which could endanger human health or the environment.	Minn. R. 7019.1000, subp. 1
Discovery of Deviations Endangering Human Health or the Environment Report (written): due two working days after discovery of deviation, submit a written description of any deviation endangering human health or the environment to the Commissioner. Include the following information in this written description: cause of the deviation; exact dates of the period of the deviation (if the deviation has not been corrected); whether or not the deviation has been corrected; the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.	Minn. R. 7019.1000, subp. 1
Breakdowns: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any process or control equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. Notification is not required for breakdown of electrostatic precipitator sections in CE 001, CE 002, CE 004, CE 005, CE 006, CE 007, CE 008, and CE 009, if the number of remaining operating sections for each electrostatic precipitator is equal to or greater than the number of operating sections during the most recent performance test during which limits for particulate matter and opacity were met, and, the opacity measured by the COM on SV 001 does not exceed the opacity limit in EU 001, EU 002, EU 003, and EU 004. At the time of notification or as soon as possible thereafter, the permittee shall inform the Commissioner of the cause of the breakdown and the estimated duration. Notify the Commissioner again when the breakdown is over.	Minn. R. 7019.1000, subp. 2
Shutdowns: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any process or control equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. At the time of notification, inform the Commissioner of the cause of the shutdown and the estimated duration. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the commissioner as soon as possible after the shutdown. Notify the Commissioner again when the shutdown is over.	Minn. R. 7019.1000, subp. 3
Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 through Minn. R. 7002.0095
Application for Permit Amendment: If you need a permit amendment, submit application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed.	Minn. R. 7007.1150 through Minn. R. 7007.1500
Extension Requests: The permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H).	Minn. R. 7007.1400, subp. 1(H)

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: GP 001 Emergency Generators**Associated Items:** EU 024 Emergency Engine Generator EEG-61001

EU 025 Emergency Engine Generator EEG-61002

What to do	Why to do it
Operating Hours: less than or equal to 816 hours/year using 12-month Rolling Sum calculated monthly.	Title I Condition: limit to avoid classification as a major modification under 40 CFR Section 52.21
Calculate and record the monthly and the 12-month rolling sum operating hours for GP 001. Complete the calculation and recording by the end of each month, for the previous month and the previous 12-month period.	Title I Condition: recordkeeping to avoid classification as a major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 5
Nitrogen Oxides: less than or equal to 35.3 tons/year	Title I Condition: limit to avoid classification as a major modification under 40 CFR Section 52.21

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: SV 001

Associated Items: EU 001 Boiler 1
EU 002 Boiler 2
EU 003 Boiler 3
EU 004 Boiler 4
EU 019 Units 1, 3, and 4 fly ash silo vent
MR 003
MR 004
MR 005
MR 006
MR 007

What to do	Why to do it
A. EMISSION LIMITS	hdr
Sulfur Dioxide: less than or equal to 1.2 lbs/million Btu heat input using 1-Hour Average when EU 002 is operating. This is a state only requirement and is not federally enforceable.	40 CFR Section 50.4; Minn. R. 7009.0020
Sulfur Dioxide: less than or equal to 1.3 lbs/million Btu heat input using 1-Hour Average when EU 002 is not operating. This is a state only requirement and is not federally enforceable.	40 CFR Section 50.4; Minn. R. 7009.0020
Sulfur Dioxide: less than or equal to 6759 lbs/hour using 1-Hour Average . This is a state only requirement and is not federally enforceable.	Minn. R. 7009.0020
Particulate Matter < 10 micron: less than or equal to 1246 lbs/hour . This is a state only requirement and is not federally enforceable.	Minn. R. 7009.0020
D. MONITORING REQUIREMENTS	hdr
Emissions Monitoring: The owner or operator shall use a CEMS to measure SO2, NOx, and CO2 emissions and flow rate for each affected unit or group of units in accordance with 40 CFR Section 75.10.	40 CFR pt. 75
Emissions Monitoring: The owner or operator shall use a COMS to measure opacity emissions from SV 001.	Minn. R. 7017.1000, subp. 1
Daily Calibration Error (CE) Test: conduct daily CE testing on all CEMS required by the Acid Rain Program, in accordance with 40 CFR pt. 75, Appendix B.	40 CFR pt. 75, Appendix B, Section 2.1
Linearity and Leak Check Test (Acid Rain Program): due before end of each calendar quarter following CEM Certification Test . Conduct a quarterly linearity test on CEMS required by the Acid Rain Program, in accordance with 40 CFR pt. 75, Appendix B.	40 CFR pt. 75, Appendix B, Section 2.2
CEMS Relative Accuracy Test Audit (RATA): due before end of each calendar half-year following CEM Certification Test . Conduct a RATA on all CEMS required by the Acid Rain Program, in accordance with 40 CFR pt. 75, Appendix B. If the RATA results indicate a relative accuracy of 7.5% or less, the next RATA is not required for twelve months.	40 CFR pt. 75, Appendix B, Section 2.3
CEMS QA/QC: The owner or operator of an affected facility shall operate, calibrate, and maintain each CEM according to the QA/QC procedure in 40 CFR pt. 75, Appendix B as amended.	40 CFR Section 75.21
COMS Continuous Operation: Except for system breakdowns, repairs, calibration checks, and zero and span adjustments, all COMS shall be in continuous operation.	Minn. R. 7007.0800, subp. 2
COMS Daily Calibration Drift (CD) Check: The CD shall be quantified and recorded at zero (low-level) and upscale (high-level) opacity at least once daily. The COMS must be adjusted whenever the calibration drift (CD) exceeds twice the specifications of PS-1 of 40 CFR pt. 60, Appendix B.	Minn. R. 7017.1000; subp. 5
COMS Calibration Error Audit: due before end of each calendar half-year following COMS Certification Test . Conduct audits at least 3 months apart but no greater than 8 months apart.	Minn. R. 7007.0800, subp. 2
COMS Monitoring Data: Owners or operators of all COMS shall reduce all data to one (1) minute averages. Opacity averages shall be calculated from all equally spaced consecutive 10-second (or shorter) data points in the one (1) minute averaging period.	Minn. R. 7007.0800, subp. 2
E. RECORD KEEPING	hdr
Recordkeeping: The owner or operator must retain records of all CEMS monitoring data and support information for a period of five (5) years from the date of the monitoring sample, measurement or report. Records shall be kept at the source.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Record keeping: The permittee shall maintain a log book (or similar record) of all operating times of EU 002.	Minn. R. 7007.0800, subp. 5
Recordkeeping: The owner or operator must retain records of all COMS monitoring data and support information for a period of five (5) years from the date of the monitoring sample, measurement or report. Records shall be kept at the source.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: SV 015**Associated Items:** EU 020 Unit 2 Fly Ash Storage Silo

EU 022 Spent Sorbent Screening

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
Particulate Matter < 10 micron: less than or equal to 2.0 lbs/hour . This is a state only requirement and is not federally enforceable.	Minn. R. 7009.0020; meets requirements of Minn. R. 7011.0715, subp. 1(A)
Check for visible emissions (during daylight hours) from the control equipment (CE 012) once each calendar week during every week of operation.	Minn. R. 7007.0800, subp. 4
Corrective Actions: If visible emissions (VEs) are observed, determine the cause and take corrective actions as soon as possible to eliminate the VEs.	Minn. R. 7007.0800, subp. 2
Recordkeeping: Record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: EU 001 Boiler 1

Associated Items: CE 001 Electrostatic Precipitator - High Efficiency

CE 002 Electrostatic Precipitator - High Efficiency

SV 001

What to do	Why to do it														
A. EMISSION LIMITS	hdr														
Total Particulate Matter: less than or equal to 0.3 lbs/million Btu heat input	Minn. R. 7009.0020; meets requirements of Minn. R. 7011.0510, subp. 1														
Sulfur Dioxide: less than or equal to 1.3 lbs/million Btu heat input using 1-Hour Average	Minn. R. 7009.0020; meets requirements of Minn. R. 7011.0510, subp. 1														
Opacity: less than or equal to 20 percent opacity using 6-minute Average except that a maximum of 60 percent opacity shall be allowable for one six minute period in any 60-minute period.	Minn. R. 7011.0510, subp. 2														
Comply with the applicable Acid Rain emissions limitation of sulfur dioxide.	40 CFR Section 72.9(c)(1)(ii), 40 CFR Section 72.9 (g)(4)														
NOx Averaging Plan Beginning January 1, 2000 either: Maintain an annual average NOx emission rate of 0.81 lbs/MMBtu and limit the annual heat input to less than or equal to 2,094,000 MMBtu per year. OR Maintain an annual average emission rate in lbs/MMBtu, averaged over the units specified in the NOx averaging plan, that is less than or equal to the annual average emission rate averaged over the same units had they been operated during the same period of time in compliance with the applicable emission limitations in 40 CFR Sections 76.5, 76.6, or 76.7. Units covered in the plan are: <table> <tr> <td>Plant</td><td>Boiler ID#</td></tr> <tr> <td>Alan S. King</td><td>1</td></tr> <tr> <td>Black Dog</td><td>1,3,4</td></tr> <tr> <td>High Bridge</td><td>3,4,5,6</td></tr> <tr> <td>Minnesota Valley</td><td>4</td></tr> <tr> <td>Riverside</td><td>6,7,8</td></tr> <tr> <td>Sherburne County</td><td>1,2,3</td></tr> </table>	Plant	Boiler ID#	Alan S. King	1	Black Dog	1,3,4	High Bridge	3,4,5,6	Minnesota Valley	4	Riverside	6,7,8	Sherburne County	1,2,3	40 CFR Section 76.11
Plant	Boiler ID#														
Alan S. King	1														
Black Dog	1,3,4														
High Bridge	3,4,5,6														
Minnesota Valley	4														
Riverside	6,7,8														
Sherburne County	1,2,3														
B. OPERATIONAL REQUIREMENTS	hdr														
Hold allowances, as of the allowance transfer deadline, in the unit's compliance subaccount not less than the total annual emissions of sulfur dioxide for the previous calendar year.	40 CFR Section 72.9(c)(1)(i), 40 CFR Section 72.9 (g)(4)														
Allowed fuel types: bituminous coal, subbituminous coal, petroleum coke, distillate fuel oil, natural gas, used oil, non-hazardous spill cleanup materials, and non-hazardous boiler cleaning agents.	Minn. R. 7007.0800, subp. 2														
Sulfur Content of Fuel: less than or equal to 0.5 percent by weight for distillate fuel oil.	Minn. R. 7007.0800, subp 2; meets SO2 emission limit requirement in Minn. R. 7011.0510, subp. 1														
Combust used oil in accordance with used oil regulations in Minn. R. ch. 7045. Limit used oil combustion to 5% of total fuel mass input on an hourly basis.	Minn. R. 7007.0800, subp. 2; Minn. R. ch. 7045														
Boiler chemical cleaning waste limited to: 8.5 gpm per 100,000 lbs/hr steam flow. Cleaning waste shall be introduced into EU 001 when the boiler is operating at a minimum of 75 percent of rated capacity.	Minn. R. 7007.0800, subp. 2														
C. TESTING REQUIREMENTS	hdr														
Performance Test: due before end of each 60 months starting 12/31/93 to measure particulate matter emissions. The tests shall be conducted at an interval not to exceed 60 months between test dates.	Minn. R. 7017.2020, subp. 1														
Performance Test Pre-test Meeting: due 7 days before end of each 60 months starting 12/31/93 (7 days before each Performance Test)	Minn. R. 7017.2030, subp. 4														

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

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<p>Boiler Alternative Operating Conditions for Performance Testing:</p> <p>Alternative Operating Conditions during testing are defined as 90% to 100% of the boiler's maximum normal (continuous) operating load or the maximum permitted operating rate, whichever is lower. The basis for this number must be included in the test plan. If testing is conducted at the alternative operating condition established, an operating limit will not be established as a result of performance testing.</p> <p>In no case will the new operating rate limit be higher than allowed by an existing permit condition.</p>	Minn. R. 7007.0800, subp. 2.
<p>Boiler Operating Conditions Not Meeting the Alternative Operating Conditions During Performance Testing:</p> <p>If performance testing is not conducted at or above the established alternative operating condition, then the boiler operating rate will be limited on an 8-hour block average based on the following:</p> <p>(1) If the results of the performance test are greater than 90% of any applicable emission limit for which emissions are measured, then boiler operation will be limited to the tested operating rate.</p> <p>(2) If results are less than or equal to 90% of all applicable emission limits for which emissions are measured, boiler operation will be limited to 110% of the tested operating rate.</p> <p>In no case will the new operating rate limit be higher than allowed by an existing permit condition.</p>	Minn. R. 7007.0800, subp. 2.
<p>STET (Short Term Emergency and Testing) Operating hours limit:</p> <p>The boiler may operate up to 40 hours per year to demonstrate the Uniform Rating of Generating Equipment (URGE) capacity and to meet emergency energy supply needs. Documentation of all STET operation shall be maintained. The boiler must meet emission limits during STET operation</p>	Minn. R. 7007.0800, subp. 2.
<p>STET Operation Definition that applies to Boilers that Meet or do Not Meet the Alternative Operating Condition for Performance Testing:</p> <p>If performance test results measure emissions at 90% or less of any applicable emission limits for any tested pollutant, STET operation is defined as operation beyond 110% of the average operating rate achieved during that performance test.</p> <p>If performance test results measure emissions at greater than 90% any applicable emission limit for any tested pollutant, STET operation is defined as operation beyond 100% of the average operating rate achieved during that performance test.</p> <p>In no case will STET operation be higher than allowed by an existing permit condition.</p>	Minn. R. 7007.0800, subp. 2.
<p>The results of a performance test are not final until issuance of a review letter by MPCA, unless specified otherwise by Minn. R. 7017.2001 - 7017.2060.</p>	Minn. R. 7017.2020, subp. 4
<p>D. RECORD KEEPING</p>	hdr
<p>Record keeping of Boiler Cleaning Agent incineration: the permittee shall keep records for all cleaning agent incineration including date of incineration, quantity (gallons), origin of cleaning agent, cleaning agent feed rate (in gallons per hour), and operating capacity of the boiler during incineration in lbs. of steam per hour.</p>	Minn. R. 7007.0800, subp. 5
<p>Keep on site at the source each of the following documents for a period of 5 years from the date the document was created: The certificate of representation, all emissions monitoring information, copies of all reports, compliance certifications, and other submissions or records made under the Acid Rain Program, copies of all documents used to complete an acid rain permit application.</p>	40 CFR Section 72.9(f)(1)
<p>E. REPORTING</p>	hdr
<p>Each submission under the Acid Rain Program shall be submitted, signed, and certified by the designated representative for all sources on behalf of which the submission is made in accordance with 40 CFR Section 72.21.</p>	40 CFR Section 72.21
<p>If the unit has excess emissions, the designated representative shall submit a proposed offset plan in accordance with 40 CFR ' 72.9(e).</p>	40 CFR Section 72.9(e)

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: EU 002 Boiler 2

Associated Items: CE 003 Centrifugal Collector - High Efficiency
CE 004 Electrostatic Precipitator - High Efficiency
CE 005 Electrostatic Precipitator - High Efficiency
MR 001
MR 002
MR 008
MR 009
SV 001

What to do	Why to do it
A. EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.04 lbs/million Btu heat input	Title I Condition: to avoid being a major modification under 40 CFR Section 52.21; to avoid requirements of 40 CFR pt. 60 subp. Da; Minn. R. 7009.0020; meets requirements of Minn. R. 7011.0510, subp. 1
Sulfur Dioxide: less than or equal to 1.2 lbs/million Btu heat input using 1-Hour Average	Minn. R. 7009.0020; meets requirements of Minn. R. 7011.0510, subp. 1
Opacity: less than or equal to 20 percent opacity using 6-minute Average except that a maximum of 60 percent opacity shall be allowable for one six minute period in any 60-minute period.	Minn. R. 7011.0510, subp. 2
Comply with the applicable Acid Rain emissions limitation of sulfur dioxide.	40 CFR Section 72.9(c)(1)(ii), 40 CFR Section 72.9 (g)(4)
B. OPERATIONAL REQUIREMENTS	hdr
Hold allowances, as of the allowance transfer deadline, in the unit's compliance subaccount not less than the total annual emissions of sulfur dioxide for the previous calendar year.	40 CFR Section 72.9(c)(1)(i), 40 CFR Section 72.9 (g)(4)
Allowed fuel types: bituminous coal, subbituminous coal, petroleum coke, distillate fuel oil, natural gas, used oil, non-hazardous spill cleanup materials. Other fuels may be allowed to be burned after regulatory approval.	Minn. R. 7007.0800, subp. 2
Sulfur Content of Fuel: less than or equal to 0.5 percent by weight for distillate fuel oil.	Minn. R. 7007.0800, subp 2; meets SO2 emission limit requirement in Minn. R. 7011.0510, subp. 1
Combust used oil in accordance with used oil regulations in Minn. R. ch. 7045. Limit to 5% of total fuel mass on an hourly basis.	Minn. R. 7007.0800, subp. 2; Minn. R. ch. 7045
C. TESTING REQUIREMENTS	hdr
Performance Test: due before end of each year starting 05/31/97 to measure particulate matter emissions. A year is defined as 12 months. The tests shall be conducted at an interval not to exceed 12 months between test dates.	Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before end of each year starting 05/31/97 (7 days before each Performance Test)	Minn. R. 7017.2030, subp. 4
The results of a performance test are not final until issuance of a review letter by MPCA, unless specified otherwise by Minn. R. 7017.2001 - 7017.2060.	Minn. R. 7017.2020, subp. 4
D. RECORD KEEPING	hdr
Keep on site at the source each of the following documents for a period of 5 years from the date of permit issuance: The certificate of representation, all emissions monitoring information, copies of all reports, compliance certifications, and other submissions or records made under the Acid Rain Program, copies of all documents used to complete an acid rain permit application.	40 CFR Section 72.9(f)(1)
E. REPORTING	hdr
The designated representative shall submit within 60 days after the end of the calendar year, an annual compliance certification report for the unit in accordance with 40 CFR Section 72.90(a). The report shall include all information required by 40 CFR Section 72.90(b) and (c).	40 CFR Section 72.90
Each submission under the Acid Rain Program shall be submitted, signed, and certified by the designated representative for all sources on behalf of which the submission is made in accordance with 40 CFR Section 72.21.	40 CFR Section 72.21
The designated representative shall submit a complete Acid Rain permit application for each source with an affected unit at least 6 months prior to the expiration of an existing Acid Rain Permit in accordance with 40 CFR Section 72.30(c).	40 CFR Section 72.30(c)
If the unit has excess emissions, the designated representative shall submit a proposed offset plan in accordance with 40 CFR ' 72.9(e).	40 CFR Section 72.9(e)

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: EU 003 Boiler 3

Associated Items: CE 006 Electrostatic Precipitator - High Efficiency

CE 007 Electrostatic Precipitator - High Efficiency

SV 001

What to do	Why to do it														
A. EMISSION LIMITS	hdr														
Total Particulate Matter: less than or equal to 0.3 lbs/million Btu heat input	Minn. R. 7009.0020; meets requirements of Minn. R. 7011.0510, subp. 1														
Sulfur Dioxide: less than or equal to 1.3 lbs/million Btu heat input using 1-Hour Average	Minn. R. 7009.0020; meets requirements of Minn. R. 7011.0510, subp. 1														
Opacity: less than or equal to 20 percent opacity using 6-minute Average except that a maximum of 60 percent opacity shall be allowable for one six minute period in any 60-minute period.	Minn. R. 7011.0510, subp. 2														
Comply with the applicable Acid Rain emissions limitation of sulfur dioxide.	40 CFR Section 72.9(c)(1)(ii), 40 CFR Section 72.9 (g)(4)														
NOx Averaging Plan Beginning January 1, 2000 either: Maintain an annual average NOx emission rate of 0.81 lbs/MMBtu and limit the annual heat input to less than or equal to 2,094,000 MMBtu per year. OR Maintain an annual average emission rate in lbs/MMBtu, averaged over the units specified in the NOx averaging plan, that is less than or equal to the annual average emission rate averaged over the same units had they been operated during the same period of time in compliance with the applicable emission limitations in 40 CFR Sections 76.5, 76.6, or 76.7. Units covered in the plan are: <table> <tr> <td>Plant</td><td>Boiler ID#</td></tr> <tr> <td>Alan S. King</td><td>1</td></tr> <tr> <td>Black Dog</td><td>1,3,4</td></tr> <tr> <td>High Bridge</td><td>3,4,5,6</td></tr> <tr> <td>Minnesota Valley</td><td>4</td></tr> <tr> <td>Riverside</td><td>6,7,8</td></tr> <tr> <td>Sherburne County</td><td>1,2,3</td></tr> </table>	Plant	Boiler ID#	Alan S. King	1	Black Dog	1,3,4	High Bridge	3,4,5,6	Minnesota Valley	4	Riverside	6,7,8	Sherburne County	1,2,3	40 CFR Section 76.11
Plant	Boiler ID#														
Alan S. King	1														
Black Dog	1,3,4														
High Bridge	3,4,5,6														
Minnesota Valley	4														
Riverside	6,7,8														
Sherburne County	1,2,3														
B. OPERATIONAL REQUIREMENTS	hdr														
Hold allowances, as of the allowance transfer deadline, in the unit's compliance subaccount not less than the total annual emissions of sulfur dioxide for the previous calendar year.	40 CFR Section 72.9(c)(1)(i), 40 CFR Section 72.9 (g)(4)														
Allowed fuel types: bituminous coal, subbituminous coal, petroleum coke, distillate fuel oil, natural gas, used oil, non-hazardous spill cleanup materials, and non-hazardous boiler cleaning agents.	Minn. R. 7007.0800, subp. 2														
Sulfur Content of Fuel: less than or equal to 0.5 percent by weight for distillate fuel oil.	Minn. R. 7007.0800, subp 2; meets SO2 emission limit requirement in Minn. R. 7011.0510, subp. 1														
Combust used oil in accordance with used oil regulations in Minn. R. ch. 7045. Limit to 5% of total fuel mass on an hourly basis.	Minn. R. 7007.0800, subp. 2; Minn. R. ch. 7045														
Boiler chemical cleaning waste limited to: 8.5 gpm per 100,000 lbs/hr steam flow. Cleaning waste shall be introduced into EU 003 when the boiler is operating at a minimum of 75 percent of rated capacity.	Minn. R. 7007.0800, subp. 2														
C. TESTING REQUIREMENTS	hdr														
Performance Test: due before end of each 60 months starting 12/31/93 to measure particulate matter emissions. The tests shall be conducted at an interval not to exceed 60 months between test dates.	Minn. R. 7017.2020, subp. 1														
Performance Test Pre-test Meeting: due 7 days before end of each 60 months starting 12/31/93 (7 days before each Performance Test)	Minn. R. 7017.2030, subp. 4														

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

<p>Boiler Alternative Operating Conditions for Performance Testing:</p> <p>Alternative Operating Conditions during testing are defined as 90% to 100% of the boiler's maximum normal (continuous) operating load or the maximum permitted operating rate, whichever is lower. The basis for this number must be included in the test plan. If testing is conducted at the alternative operating condition established, an operating limit will not be established as a result of performance testing.</p> <p>In no case will the new operating rate limit be higher than allowed by an existing permit condition.</p>	Minn. R. 7007.0800, subp. 2.
<p>Boiler Operating Conditions Not Meeting the Alternative Operating Conditions During Performance Testing:</p> <p>If performance testing is not conducted at or above the established alternative operating condition, then the boiler operating rate will be limited on an 8-hour block average based on the following:</p> <p>(1) If the results of the performance test are greater than 90% of any applicable emission limit for which emissions are measured, then boiler operation will be limited to the tested operating rate.</p> <p>(2) If results are less than or equal to 90% of all applicable emission limits for which emissions are measured, boiler operation will be limited to 110% of the tested operating rate.</p> <p>In no case will the new operating rate limit be higher than allowed by an existing permit condition.</p>	Minn. R. 7007.0800, subp. 2.
<p>STET (Short Term Emergency and Testing) Operating hours limit:</p> <p>The boiler may operate up to 40 hours per year to demonstrate the Uniform Rating of Generating Equipment (URGE) capacity and to meet emergency energy supply needs. Documentation of all STET operation shall be maintained. The boiler must meet emission limits during STET operation</p>	Minn. R. 7007.0800, subp. 2.
<p>STET Operation Definition that applies to Boilers that Meet or do Not Meet the Alternative Operating Condition for Performance Testing:</p> <p>If performance test results measure emissions at 90% or less of any applicable emission limits for any tested pollutant, STET operation is defined as operation beyond 110% of the average operating rate achieved during that performance test.</p> <p>If performance test results measure emissions at greater than 90% any applicable emission limit for any tested pollutant, STET operation is defined as operation beyond 100% of the average operating rate achieved during that performance test.</p> <p>In no case will STET operation be higher than allowed by an existing permit condition.</p>	Minn. R. 7007.0800, subp. 2.
<p>The results of a performance test are not final until issuance of a review letter by MPCA, unless specified otherwise by Minn. R. 7017.2001 - 7017.2060.</p>	Minn. R. 7017.2020, subp. 4
<p>D. RECORD KEEPING</p>	hdr
<p>Record keeping of Boiler Cleaning Agent incineration: the permittee shall keep records for all cleaning agent incineration including date of incineration, quantity (gallons), origin of cleaning agent, cleaning agent feed rate (in gallons per hour), and operating capacity of the boiler during incineration in lbs. of steam per hour.</p>	Minn. R. 7007.0800, subp. 5
<p>Keep on site at the source each of the following documents for a period of 5 years from the date of permit issuance: The certificate of representation, all emissions monitoring information, copies of all reports, compliance certifications, and other submissions or records made under the Acid Rain Program, copies of all documents used to complete an acid rain permit application.</p>	40 CFR Section 72.9(f)(1)
<p>E. REPORTING</p>	hdr
<p>The designated representative shall submit within 60 days after the end of the calendar year, an annual compliance certification report for the unit in accordance with 40 CFR Section 72.90(a). The report shall include all information required by 40 CFR Section 72.90(b) and (c).</p>	40 CFR Section 72.90
<p>Each submission under the Acid Rain Program shall be submitted, signed, and certified by the designated representative for all sources on behalf of which the submission is made in accordance with 40 CFR Section 72.21.</p>	40 CFR Section 72.21
<p>The designated representative shall submit a complete Acid Rain permit application for each source with an affected unit at least 6 months prior to the expiration of an existing Acid Rain Permit in accordance with 40 CFR Section 72.30(c).</p>	40 CFR Section 72.30(c)
<p>If the unit has excess emissions, the designated representative shall submit a proposed offset plan in accordance with 40 CFR ' 72.9(e).</p>	40 CFR Section 72.9(e)

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: EU 004 Boiler 4

Associated Items: CE 008 Electrostatic Precipitator - High Efficiency

CE 009 Electrostatic Precipitator - High Efficiency

SV 001

What to do	Why to do it														
A. EMISSION LIMITS	hdr														
Total Particulate Matter: less than or equal to 0.3 lbs/million Btu heat input	Minn. R. 7009.0020; meets requirements of Minn. R. 7011.0510, subp. 1														
Sulfur Dioxide: less than or equal to 1.3 lbs/million Btu heat input using 1-Hour Average	Minn. R. 7009.0020; meets requirements of Minn. R. 7011.0510, subp. 1														
Opacity: less than or equal to 20 percent opacity using 6-minute Average except that a maximum of 60 percent opacity shall be allowable for one six minute period in any 60-minute period.	Minn. R. 7011.0510, subp. 2														
Comply with the applicable Acid Rain emissions limitation of sulfur dioxide.	40 CFR Section 72.9(c)(1)(ii), 40 CFR Section 72.9 (g)(4)														
<p>NOx Averaging Plan</p> <p>Beginning January 1, 2000 either:</p> <p>Maintain an annual average NOx emission rate of 0.81 lbs/MMBtu and limit the annual heat input to less than or equal to 2,094,000 MMBtu per year.</p> <p>OR</p> <p>Maintain an annual average emission rate in lbs/MMBtu, averaged over the units specified in the NOx averaging plan, that is less than or equal to the annual average emission rate averaged over the same units had they been operated during the same period of time in compliance with the applicable emission limitations in 40 CFR Sections 76.5, 76.6, or 76.7. Units covered in the plan are:</p> <table> <tr> <td>Plant</td><td>Boiler ID#</td></tr> <tr> <td>Alan S. King</td><td>1</td></tr> <tr> <td>Black Dog</td><td>1,3,4</td></tr> <tr> <td>High Bridge</td><td>3,4,5,6</td></tr> <tr> <td>Minnesota Valley</td><td>4</td></tr> <tr> <td>Riverside</td><td>6,7,8</td></tr> <tr> <td>Sherburne County</td><td>1,2,3</td></tr> </table>	Plant	Boiler ID#	Alan S. King	1	Black Dog	1,3,4	High Bridge	3,4,5,6	Minnesota Valley	4	Riverside	6,7,8	Sherburne County	1,2,3	40 CFR Section 76.11
Plant	Boiler ID#														
Alan S. King	1														
Black Dog	1,3,4														
High Bridge	3,4,5,6														
Minnesota Valley	4														
Riverside	6,7,8														
Sherburne County	1,2,3														
B. OPERATIONAL REQUIREMENTS	hdr														
Hold allowances, as of the allowance transfer deadline, in the unit's compliance subaccount not less than the total annual emissions of sulfur dioxide for the previous calendar year.	40 CFR Section 72.9(c)(1)(i), 40 CFR Section 72.9 (g)(4)														
Allowed fuel types: bituminous coal, subbituminous coal, petroleum coke, distillate fuel oil, natural gas, used oil, non-hazardous spill cleanup materials, and non-hazardous boiler cleaning agents.	Minn. R. 7007.0800, subp. 2														
Sulfur Content of Fuel: less than or equal to 0.5 percent by weight for distillate fuel oil.	Minn. R. 7007.0800, subp 2; meets SO2 emission limit requirement in Minn. R. 7011.0510, subp. 1														
Combust used oil in accordance with used oil regulations in Minn. R. ch. 7045. Limit to 5% of total fuel mass on an hourly basis.	Minn. R. 7007.0800, subp. 2; Minn. R. ch. 7045														
Boiler chemical cleaning waste limited to: 8.5 gpm per 100,000 lbs/hr steam flow. Cleaning waste shall be introduced into EU 004 when the boiler is operating at a minimum of 75 percent of rated capacity.	Minn. R. 7007.0800, subp. 2														
C. TESTING REQUIREMENTS	hdr														
Performance Test: due before end of each 60 months starting 12/31/93 to measure particulate matter emissions. The tests shall be conducted at an interval not to exceed 60 months between test dates.	Minn. R. 7017.2020, subp. 1														
Performance Test Pre-test Meeting: due 7 days before end of each 60 months starting 12/31/93 (7 days before each Performance Test)	Minn. R. 7017.2030, subp. 4														

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

<p>Boiler Alternative Operating Conditions for Performance Testing:</p> <p>Alternative Operating Conditions during testing are defined as 90% to 100% of the boiler's maximum normal (continuous) operating load or the maximum permitted operating rate, whichever is lower. The basis for this number must be included in the test plan. If testing is conducted at the alternative operating condition established, an operating limit will not be established as a result of performance testing.</p> <p>In no case will the new operating rate limit be higher than allowed by an existing permit condition.</p>	Minn. R. 7007.0800, subp. 2.
<p>Boiler Operating Conditions Not Meeting the Alternative Operating Conditions During Performance Testing:</p> <p>If performance testing is not conducted at or above the established alternative operating condition, then the boiler operating rate will be limited on an 8-hour block average based on the following:</p> <p>(1) If the results of the performance test are greater than 90% of any applicable emission limit for which emissions are measured, then boiler operation will be limited to the tested operating rate.</p> <p>(2) If results are less than or equal to 90% of all applicable emission limits for which emissions are measured, boiler operation will be limited to 110% of the tested operating rate.</p> <p>In no case will the new operating rate limit be higher than allowed by an existing permit condition.</p>	Minn. R. 7007.0800, subp. 2.
<p>STET (Short Term Emergency and Testing) Operating hours limit:</p> <p>The boiler may operate up to 40 hours per year to demonstrate the Uniform Rating of Generating Equipment (URGE) capacity and to meet emergency energy supply needs. Documentation of all STET operation shall be maintained. The boiler must meet emission limits during STET operation</p>	Minn. R. 7007.0800, subp. 2.
<p>STET Operation Definition that applies to Boilers that Meet or do Not Meet the Alternative Operating Condition for Performance Testing:</p> <p>If performance test results measure emissions at 90% or less of any applicable emission limits for any tested pollutant, STET operation is defined as operation beyond 110% of the average operating rate achieved during that performance test.</p> <p>If performance test results measure emissions at greater than 90% any applicable emission limit for any tested pollutant, STET operation is defined as operation beyond 100% of the average operating rate achieved during that performance test.</p> <p>In no case will STET operation be higher than allowed by an existing permit condition.</p>	Minn. R. 7007.0800, subp. 2.
<p>The results of a performance test are not final until issuance of a review letter by MPCA, unless specified otherwise by Minn. R. 7017.2001 - 7017.2060.</p>	Minn. R. 7017.2020, subp. 4
<p>D. RECORD KEEPING</p>	hdr
<p>Record keeping of Boiler Cleaning Agent incineration: the permittee shall keep records for all cleaning agent incineration including date of incineration, quantity (gallons), origin of cleaning agent, cleaning agent feed rate (in gallons per hour), and operating capacity of the boiler during incineration in lbs. of steam per hour.</p>	Minn. R. 7007.0800, subp. 5
<p>Keep on site at the source each of the following documents for a period of 5 years from the date of permit issuance: The certificate of representation, all emissions monitoring information, copies of all reports, compliance certifications, and other submissions or records made under the Acid Rain Program, copies of all documents used to complete an acid rain permit application.</p>	40 CFR Section 72.9(f)(1)
<p>E. REPORTING</p>	hdr
<p>The designated representative shall submit within 60 days after the end of the calendar year, an annual compliance certification report for the unit in accordance with 40 CFR Section 72.90(a). The report shall include all information required by 40 CFR Section 72.90(b) and (c).</p>	40 CFR Section 72.90
<p>Each submission under the Acid Rain Program shall be submitted, signed, and certified by the designated representative for all sources on behalf of which the submission is made in accordance with 40 CFR Section 72.21.</p>	40 CFR Section 72.21
<p>The designated representative shall submit a complete Acid Rain permit application for each source with an affected unit at least 6 months prior to the expiration of an existing Acid Rain Permit in accordance with 40 CFR Section 72.30(c).</p>	40 CFR Section 72.30(c)
<p>If the unit has excess emissions, the designated representative shall submit a proposed offset plan in accordance with 40 CFR ' 72.9(e).</p>	40 CFR Section 72.9(e)

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: EU 005 200 Ton Stacking Hopper**Associated Items:** CE 025 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 031 Other

SV 002

What to do	Why to do it
Particulate Matter < 10 micron: less than or equal to 0.6 lbs/hour . This is a state only requirement and is not federally enforceable.	Minn. R. 7009.0020
If exhaust gases from any enclosed coal handling facility exceed 20 percent opacity, then the owner or operator of such facility shall select and implement one of the following further controls: (1) install exhaust air system and control exhaust gases so that particulate emissions in such gases do not exceed 0.020 gr/dscf; (2) control exhaust gases using dust suppression methods so that particulate emissions do not exhibit Opacity: greater than or equal to 20 percent opacity	Minn. R. 7011.1105 (G) and to meet Minn. R. 7009.0020
Check for visible emissions (during daylight hours) from the control equipment (CE 025) once each calendar week during every week of operation.	Minn. R. 7007.0800, subp. 4
Corrective Actions: If visible emissions (VEs) are observed, determine the cause and take corrective actions as soon as possible to eliminate the VEs.	Minn. R. 7007.0800, subp. 2
Recordkeeping: Record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: EU 006 Dumper Unloading Bldg**Associated Items:** CE 023 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 024 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 003

What to do	Why to do it
Particulate Matter < 10 micron: less than or equal to 1.0 lbs/hour . This is a state only requirement and is not federally enforceable.	Minn. R. 7009.0020
Operating Hours: less than or equal to 12.5 hours/day . This is a state only requirement and is not federally enforceable.	Minn. R. 7009.0020
Railcar Unloading: When the amount of coal unloaded by rail is 200,000 tons per year or greater, unload railcars only within a permanent building or structure. If exhaust gases from such building or structure exceed 20 percent opacity, then implement one of the following further controls: install an exhaust air system and control exhaust gases so that particulate matter emissions do not exceed 0.020 gr/dscf; or control exhaust gases using dust suppression methods so that particulate emissions do not exhibit Opacity: greater than or equal to 20 percent opacity	Minn. R. 7011.1105 (H)
Truck and Hauler Unloading Stations: Control fugitive particulate emissions from the unloading of truck or haulers by dust suppression methods so that emissions from such sources are minimized. Control emissions by unloading reclaimed coal within a partial enclosure and with fabric filters.	Minn. R. 7011.1105 (C)
Check for visible emissions (during daylight hours) from SV 003 (for CE 023 and CE 024) once each calendar week during every week of operation.	Minn. R. 7007.0800, subp. 4
Corrective Actions: If visible emissions (VEs) are observed, determine the cause and take corrective actions as soon as possible to eliminate the VEs.	Minn. R. 7007.0800, subp. 2
Recordkeeping: Record the operating start and stop times during every day of coal throughput operation.	Minn. R. 7007.0800, subp. 5
Recordkeeping: Record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: EU 007 Yard Agglomerator Silo**Associated Items:** CE 021 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
SV 004

What to do	Why to do it
Opacity: less than 20 percent opacity	40 CFR Section 60.252(c)
Particulate Matter < 10 micron: less than or equal to 0.01 grains/actual cubic foot . This is a state only requirement and is not federally enforceable.	Minn. R. 7009.0020 and to meet Minn. R. 7011.1105 (G)
Check for visible emissions (during daylight hours) from the control equipment (CE 021) once each calendar week during every week of operation.	Minn. R. 7007.0800, subp. 4
Corrective Actions: If visible emissions (VEs) are observed, determine the cause and take corrective actions as soon as possible to eliminate the VEs.	Minn. R. 7007.0800, subp. 2
Recordkeeping: Record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: EU 008 Breaker Building (Coal Conveying; DC-951**Associated Items:** CE 019 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
SV 005

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.1105 (G)
Particulate Matter < 10 micron: less than or equal to 0.005 grains/dry standard cubic foot . This is a state only requirement and is not federally enforceable.	Minn. R. 7009.0020 and to meet Minn. R. 7011.1105 (G)
Check for visible emissions (during daylight hours) from the control equipment (CE 019) once each calendar week during every week of operation.	Minn. R. 7007.0800, subp. 4
Corrective Actions: If visible emissions (VEs) are observed, determine the cause and take corrective actions as soon as possible to eliminate the VEs.	Minn. R. 7007.0800, subp. 2
Recordkeeping: Record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: EU 009 Transfer Tower (DC-952)**Associated Items:** CE 020 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
SV 006

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.1105 (G)
Particulate Matter < 10 micron: less than or equal to 0.005 grains/dry standard cubic foot . This is a state only requirement and is not federally enforceable.	Minn. R. 7009.0020; meets requirements of Minn. R. 7011.1105 (G)
Check for visible emissions (during daylight hours) from the SV 006 control equipment (CE 020) once each calendar week during every week of operation.	Minn. R. 7007.0800, subp. 4
Corrective Actions: If visible emissions (VEs) are observed, determine the cause and take corrective actions as soon as possible to eliminate the VEs.	Minn. R. 7007.0800, subp. 2
Recordkeeping: Record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: EU 010 Breakers (Crushing: DC-952)**Associated Items:** CE 020 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
SV 006

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.1105 (G)
Particulate Matter < 10 micron: less than or equal to 0.005 grains/dry standard cubic foot . This is a state only requirement and is not federally enforceable.	Minn. R. 7009.0020; meets requirements of Minn. R. 7011.1105 (G)
Check for visible emissions (during daylight hours) from the SV 006 control equipment (CE 020) once each calendar week during every week of operation.	Minn. R. 7007.0800, subp. 4
Corrective Actions: If visible emissions (VEs) are observed, determine the cause and take corrective actions as soon as possible to eliminate the VEs.	Minn. R. 7007.0800, subp. 2
Recordkeeping: Record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: EU 011 Tripper Area (Conveyors D and F; DC-961**Associated Items:** CE 016 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
SV 007

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.1105 (G)
Particulate Matter < 10 micron: less than or equal to 0.005 grains/dry standard cubic foot . This is a state only requirement and is not federally enforceable.	Minn. R. 7009.0020 and to meet Minn. R. 7011.1105 (G)
Check for visible emissions (during daylight hours) from the control equipment (CE 016) once each calendar week during every week of operation.	Minn. R. 7007.0800, subp. 4
Corrective Actions: If visible emissions (VEs) are observed, determine the cause and take corrective actions as soon as possible to eliminate the VEs.	Minn. R. 7007.0800, subp. 2
Recordkeeping: Record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: EU 012 Units 1, 2, and 3 Coal Silos DC-962**Associated Items:** CE 017 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
SV 008

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.1105 (G)
Particulate Matter < 10 micron: less than or equal to 0.005 grains/dry standard cubic foot . This is a state only requirement and is not federally enforceable.	Minn. R. 7009.0020 and to meet Minn. R. 7011.1105 (G)
Check for visible emissions (during daylight hours) from the control equipment (CE 017) once each calendar week during every week of operation.	Minn. R. 7007.0800, subp. 4
Corrective Actions: If visible emissions (VEs) are observed, determine the cause and take corrective actions as soon as possible to eliminate the VEs.	Minn. R. 7007.0800, subp. 2
Recordkeeping: Record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: EU 013 Unit 4 Coal Silo DC-963**Associated Items:** CE 018 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
SV 009

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.1105 (G)
Particulate Matter < 10 micron: less than or equal to 0.005 grains/dry standard cubic foot . This is a state only requirement and is not federally enforceable.	Minn. R. 7009.0020 and to meet Minn. R. 7011.1105 (G)
Check for visible emissions (during daylight hours) from the control equipment (CE 018) once each calendar week during every week of operation.	Minn. R. 7007.0800, subp. 4
Corrective Actions: If visible emissions (VEs) are observed, determine the cause and take corrective actions as soon as possible to eliminate the VEs.	Minn. R. 7007.0800, subp. 2
Recordkeeping: Record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: EU 014 Unit 2 Sorbent Storage Silo**Associated Items:** CE 026 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
SV 010

What to do	Why to do it
Particulate Matter < 10 micron: less than or equal to 0.02 grains/dry standard cubic foot . This is a state only requirement and is not federally enforceable.	Minn. R. 7009.0020 and meets the requirements of Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
Check for visible emissions (during daylight hours) from the control equipment (CE 026) once each calendar week during every week of operation.	Minn. R. 7007.0800, subp. 4
Corrective Actions: If visible emissions (VEs) are observed, determine the cause and take corrective actions as soon as possible to eliminate the VEs.	Minn. R. 7007.0800, subp. 2
Recordkeeping: Record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: EU 015 Unit 2 Sorbent Day Bin 21**Associated Items:** CE 027 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
SV 011

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
Particulate Matter < 10 micron: less than or equal to 0.02 grains/dry standard cubic foot . This is a state only requirement and is not federally enforceable.	Minn. R. 7009.0020 and meets the requirements of Minn. R. 7011.0715, subp. 1(A)
Check for visible emissions (during daylight hours) from the control equipment (CE 027) once each calendar week during every week of operation.	Minn. R. 7007.0800, subp. 4
Corrective Actions: If visible emissions (VEs) are observed, determine the cause and take corrective actions as soon as possible to eliminate the VEs.	Minn. R. 7007.0800, subp. 2
Recordkeeping: Record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: EU 016 Unit 2 Sorbent Day Bin 22**Associated Items:** CE 022 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
SV 012

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
Particulate Matter < 10 micron: less than or equal to 0.02 grains/dry standard cubic foot . This is a state only requirement and is not federally enforceable.	Minn. R. 7009.0020 and meets the requirements of Minn. R. 7011.0715, subp. 1(A)
Check for visible emissions (during daylight hours) from the control equipment (CE 022) once each calendar week during every week of operation.	Minn. R. 7007.0800, subp. 4
Corrective Actions: If visible emissions (VEs) are observed, determine the cause and take corrective actions as soon as possible to eliminate the VEs.	Minn. R. 7007.0800, subp. 2
Recordkeeping: Record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: EU 017 Unit 2 Spent Bed Storage**Associated Items:** CE 014 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
SV 013

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
Particulate Matter < 10 micron: less than or equal to 0.02 grains/dry standard cubic foot . This is a state only requirement and is not federally enforceable.	Minn. R. 7009.0020 and to meet Minn. R. 7011.0715, subp. 1(A)
Check for visible emissions (during daylight hours) from the control equipment (CE 014) once each calendar week during every week of operation.	Minn. R. 7007.0800, subp. 4
Corrective Actions: If visible emissions (VEs) are observed, determine the cause and take corrective actions as soon as possible to eliminate the VEs.	Minn. R. 7007.0800, subp. 2
Recordkeeping: Record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: EU 018 Units 1, 3, and 4 Secondary Precip. Fly Ash Collection System Venting**Associated Items:** CE 011 Centrifugal Collector - High Efficiency

CE 015 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 014

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
Particulate Matter < 10 micron: less than or equal to 0.02 grains/dry standard cubic foot . This is a state only requirement and is not federally enforceable.	Minn. R. 7009.0020 and to meet Minn. R. 7011.0715, subp. 1(A)
Check for visible emissions (during daylight hours) from the control equipment (CE 015) once each calendar week during every week of operation.	Minn. R. 7007.0800, subp. 4
Corrective Actions: If visible emissions (VEs) are observed, determine the cause and take corrective actions as soon as possible to eliminate the VEs.	Minn. R. 7007.0800, subp. 2
Recordkeeping: Record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: EU 019 Units 1, 3, and 4 fly ash silo vent

Associated Items: CE 004 Electrostatic Precipitator - High Efficiency
CE 005 Electrostatic Precipitator - High Efficiency
CE 006 Electrostatic Precipitator - High Efficiency
CE 007 Electrostatic Precipitator - High Efficiency
CE 008 Electrostatic Precipitator - High Efficiency
CE 009 Electrostatic Precipitator - High Efficiency
SV 001

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
Particulate Matter < 10 micron: less than or equal to 0.02 grains/dry standard cubic foot . This is a state only requirement and is not federally enforceable.	Minn. R. 7009.0020 and meets the requirements of Minn. R. 7011.0715, subp. 1(A)
Units 1, 3, and 4 ash silo vent emissions are controlled by CE 004, 005, 006, 007, 008, and 009 and exhaust through SV 001.	Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: EU 021 Unit 2 Fly Ash Collection System**Associated Items:** CE 010 Centrifugal Collector - High Efficiency

CE 013 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 016

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
Particulate Matter < 10 micron: less than or equal to 0.02 grains/dry standard cubic foot . This is a state only requirement and is not federally enforceable.	Minn. R. 7009.0020 and to meet Minn. R. 7011.0715, subp. 1(A)
Check for visible emissions (during daylight hours) from the control equipment (CE 013) once each calendar week during every week of operation.	Minn. R. 7007.0800, subp. 4
Corrective Actions: If visible emissions (VEs) are observed, determine the cause and take corrective actions as soon as possible to eliminate the VEs.	Minn. R. 7007.0800, subp. 2
Recordkeeping: Record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: EU 023 Temporary Emergency Engine**Associated Items:** SV 017

What to do	Why to do it
Operating Hours: less than or equal to 5000 hours/year using 12-month Rolling Sum calculated monthly. During the first 11 months of operation, the cumulative operating hours are limited as follows: Month 1: 500 hours; Month 2: 1000 hours; Month 3: 1500 hours; Month 4: 2000 hours; Month 5: 2500 hours; Month 6: 3000 hours; Month 7: 3400 hours; Month 8: 3800 hours; Month 9: 4200 hours; Month 10: 4600 hours; Month 11: 4900 hours.	Title I Condition: limit to avoid classification as a major modification under 40 CFR Section 52.21; and meets 7009.0020
Capacity: The rated continuous brake horsepower shall not exceed 300.	Title I Condition: limit to avoid classification as a major modification under 40 CFR Section 52.21; and meets 7009.0020
Opacity: less than or equal to 20 percent opacity once operating temperatures have been attained.	Minn. R. 7011.2300, subp. 1
Sulfur Dioxide: less than or equal to 0.5 lbs/million Btu heat input	Minn. R. 7011.2300, subp. 2
Fuel type is limited to distillate fuel oil with a maximum sulfur content of 0.5% by weight.	Minn. R. 7007.0800, subp. 2
Calculate and record operating hours for each month and on a 12-month rolling sum basis. Complete the calculation and recording by the end of each month, for the previous month and for the previous 12-month period.	Title I Condition: recordkeeping to avoid classification as a major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 5
Fuel Supplier Receipts: Keep on site, fuel receipts for each fuel shipment. Each receipt shall specify the type of fuel oil delivered.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: EU 024 Emergency Engine Generator EEG-61001**Associated Items:** GP 001 Emergency Generators

SV 018

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity once operating temperatures have been attained.	Minn. R. 7011.2300, subp. 1
Sulfur Dioxide: less than or equal to 0.5 lbs/million Btu heat input	Minn. R. 7011.2300, subp. 2
Fuel type is limited to distillate fuel oil with a maximum Sulfur Content of Fuel: less than or equal to 0.5 percent by weight	Minn. R. 7007.0800, subp. 2
Fuel Supplier Receipts: Keep on site, fuel receipts for each fuel shipment. Each receipt shall specify the type of fuel oil delivered.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: EU 025 Emergency Engine Generator EEG-61002**Associated Items:** GP 001 Emergency Generators

SV 019

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity once operating temperatures have been attained.	Minn. R. 7011.2300, subp. 1
Sulfur Dioxide: less than or equal to 0.5 lbs/million Btu heat input	Minn. R. 7011.2300, subp. 2
Fuel type is limited to distillate fuel oil with a maximum sulfur content of 0.5% by weight.	Minn. R. 7007.0800, subp. 2
Fuel Supplier Receipts: Keep on site, fuel receipts for each fuel shipment. Each receipt shall specify the type of fuel oil delivered.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: CE 001 Electrostatic Precipitator - High Efficiency**Associated Items:** EU 001 Boiler 1

What to do	Why to do it
Operate control equipment when the associated boiler is operating except while burning only natural gas.	Minn. R. 7007.0800, subp. 2
The ESP must be operated with at least the minimum specific collection area (SCA) in service determined during the most-recent particulate matter emissions test with results equal to or less than the particulate matter emission limit. If the sections in the ESP are physically and electrically equivalent, the Permittee can meet this requirement by operating the ESP with no less than the number of sections that were operating during the most-recent particulate matter emissions test with results equal to or less than the particulate matter emission limit.	Minn. R. 7007.0800, subp. 14
Monitor and record the identity and minimum number of ESP sections (or SCA if sections are not equivalent) in service each day that the associated boiler is operating. Records shall indicate periods of operation on only natural gas.	Minn. R. 7007.0800, subp. 4 and 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: CE 002 Electrostatic Precipitator - High Efficiency**Associated Items:** EU 001 Boiler 1

What to do	Why to do it
Operate control equipment when the associated boiler is operating except while burning only natural gas.	Minn. R. 7007.0800, subp. 2
The ESP must be operated with at least the minimum specific collection area (SCA) in service determined during the most-recent particulate matter emissions test with results equal to or less than the particulate matter emission limit. If the sections in the ESP are physically and electrically equivalent, the Permittee can meet this requirement by operating the ESP with no less than the number of sections that were operating during the most-recent particulate matter emissions test with results equal to or less than the particulate matter emission limit.	Minn. R. 7007.0800, subp. 14
Monitor and record the identity and minimum number of ESP sections (or SCA if sections are not equivalent) in service each day that the associated boiler is operating. Records shall indicate periods of operation on only natural gas.	Minn. R. 7007.0800, subp. 4 and 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: CE 003 Centrifugal Collector - High Efficiency**Associated Items:** EU 002 Boiler 2

What to do	Why to do it
Monitor cyclone hopper high-level alarm and correct any problems as soon as possible.	Minn. R. 7007.0800, subp. 14
Record keeping: record all corrective actions when alarm sounds	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: CE 004 Electrostatic Precipitator - High Efficiency**Associated Items:** EU 002 Boiler 2

EU 019 Units 1, 3, and 4 fly ash silo vent

What to do	Why to do it
Operate control equipment when the associated boiler is operating except while burning only natural gas.	Minn. R. 7007.0800, subp. 2
The ESP must be operated with at least the minimum specific collection area (SCA) in service determined during the most-recent particulate matter emissions test with results equal to or less than the particulate matter emission limit. If the sections in the ESP are physically and electrically equivalent, the Permittee can meet this requirement by operating the ESP with no less than the number of sections that were operating during the most-recent particulate matter emissions test with results equal to or less than the particulate matter emission limit.	Minn. R. 7007.0800, subp. 14
Monitor and record the identity and minimum number of ESP sections (or SCA if sections are not equivalent) in service each day that the associated boiler is operating. Records shall indicate periods of operation on only natural gas.	Minn. R. 7007.0800, subp. 4 and 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: CE 005 Electrostatic Precipitator - High Efficiency**Associated Items:** EU 002 Boiler 2

EU 019 Units 1, 3, and 4 fly ash silo vent

What to do	Why to do it
Operate control equipment when the associated boiler is operating except while burning only natural gas.	Minn. R. 7007.0800, subp. 2
The ESP must be operated with at least the minimum specific collection area (SCA) in service determined during the most-recent particulate matter emissions test with results equal to or less than the particulate matter emission limit. If the sections in the ESP are physically and electrically equivalent, the Permittee can meet this requirement by operating the ESP with no less than the number of sections that were operating during the most-recent particulate matter emissions test with results equal to or less than the particulate matter emission limit.	Minn. R. 7007.0800, subp. 14
Monitor and record the identity and minimum number of ESP sections (or SCA if sections are not equivalent) in service each day that the associated boiler is operating. Records shall indicate periods of operation on only natural gas.	Minn. R. 7007.0800, subp. 4 and 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: CE 006 Electrostatic Precipitator - High Efficiency**Associated Items:** EU 003 Boiler 3

EU 019 Units 1, 3, and 4 fly ash silo vent

What to do	Why to do it
Operate control equipment when the associated boiler is operating except while burning only natural gas.	Minn. R. 7007.0800, subp. 2
The ESP must be operated with at least the minimum specific collection area (SCA) in service determined during the most-recent particulate matter emissions test with results equal to or less than the particulate matter emission limit. If the sections in the ESP are physically and electrically equivalent, the Permittee can meet this requirement by operating the ESP with no less than the number of sections that were operating during the most-recent particulate matter emissions test with results equal to or less than the particulate matter emission limit.	Minn. R. 7007.0800, subp. 14
Monitor and record the identity and minimum number of ESP sections (or SCA if sections are not equivalent) in service each day that the associated boiler is operating. Records shall indicate periods of operation on only natural gas.	Minn. R. 7007.0800, subp. 4 and 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: CE 007 Electrostatic Precipitator - High Efficiency**Associated Items:** EU 003 Boiler 3

EU 019 Units 1, 3, and 4 fly ash silo vent

What to do	Why to do it
Operate control equipment when the associated boiler is operating except while burning only natural gas.	Minn. R. 7007.0800, subp. 2
The ESP must be operated with at least the minimum specific collection area (SCA) in service determined during the most-recent particulate matter emissions test with results equal to or less than the particulate matter emission limit. If the sections in the ESP are physically and electrically equivalent, the Permittee can meet this requirement by operating the ESP with no less than the number of sections that were operating during the most-recent particulate matter emissions test with results equal to or less than the particulate matter emission limit.	Minn. R. 7007.0800, subp. 14
Monitor and record the identity and minimum number of ESP sections (or SCA if sections are not equivalent) in service each day that the associated boiler is operating. Records shall indicate periods of operation on only natural gas.	Minn. R. 7007.0800, subp. 4 and 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: CE 008 Electrostatic Precipitator - High Efficiency**Associated Items:** EU 004 Boiler 4

EU 019 Units 1, 3, and 4 fly ash silo vent

What to do	Why to do it
Operate control equipment when the associated boiler is operating except while burning only natural gas.	Minn. R. 7007.0800, subp. 2
The ESP must be operated with at least the minimum specific collection area (SCA) in service determined during the most-recent particulate matter emissions test with results equal to or less than the particulate matter emission limit. If the sections in the ESP are physically and electrically equivalent, the Permittee can meet this requirement by operating the ESP with no less than the number of sections that were operating during the most-recent particulate matter emissions test with results equal to or less than the particulate matter emission limit.	Minn. R. 7007.0800, subp. 14
Monitor and record the identity and minimum number of ESP sections (or SCA if sections are not equivalent) in service each day that the associated boiler is operating. Records shall indicate periods of operation on only natural gas.	Minn. R. 7007.0800, subp. 4 and 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: CE 009 Electrostatic Precipitator - High Efficiency**Associated Items:** EU 004 Boiler 4

EU 019 Units 1, 3, and 4 fly ash silo vent

What to do	Why to do it
Operate control equipment when the associated boiler is operating except while burning only natural gas.	Minn. R. 7007.0800, subp. 2
The ESP must be operated with at least the minimum specific collection area (SCA) in service determined during the most-recent particulate matter emissions test with results equal to or less than the particulate matter emission limit. If the sections in the ESP are physically and electrically equivalent, the Permittee can meet this requirement by operating the ESP with no less than the number of sections that were operating during the most-recent particulate matter emissions test with results equal to or less than the particulate matter emission limit.	Minn. R. 7007.0800, subp. 14
Monitor and record the identity and minimum number of ESP sections (or SCA if sections are not equivalent) in service each day that the associated boiler is operating. Records shall indicate periods of operation on only natural gas.	Minn. R. 7007.0800, subp. 4 and 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: FS 001 PM Barge Unloading**Associated Items:** CE 028 Dust Suppression by Water Spray

What to do	Why to do it
Operating Hours: less than or equal to 500 hours/year	Minn. R. 7009.0020
Barge or Vessel Unloading Station: Cranes, shovels, and conveyors shall be operated in a manner which decreases as much as possible the vertical free fall of coal. Control fugitive particulate emissions during unloading so that fugitive particulate emissions are minimized. Control emissions using water sprays.	Minn. R. 7011.1105 (E)
Recordkeeping: Record the operating start and stop times during every day of coal throughput operation.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: FS 002 PM Coal Conveyors 1-6, 7A**Associated Items:** CE 030 Other

What to do	Why to do it
If exhaust gases from any enclosed coal handling facility exceed 20 percent opacity, either install an exhaust air system and control exhaust gases so that particulate emissions do not exceed 0.020 gr/dscf, or control exhaust gases using dust suppression methods so that particulate emissions do not exhibit Opacity: greater than 20 percent opacity	Minn. R. 7011.1105 (G)

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: FS 003 PM Emergency Reclaim Hopper

What to do	Why to do it
Control fugitive particulate emissions by dust suppression methods on such operations so that fugitive particulate emissions are minimized. In the alternative, use an underground bottom feed (plow) of coal to an underground conveyor system provided the exhaust gases from the enclosed spaces do not contain Total Particulate Matter: less than or equal to 0.02 grains/dry standard cubic foot	Minn. R. 7011.1105 (F)

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: FS 004 PM All Coal Storage Piles (Erosion)**Associated Items:** CE 029 Dust Suppression by Water Spray

What to do	Why to do it
Stockpiles, Stockpile Construction, and Reclaiming: (1) Control fugitive particulate emissions by dust suppression methods on such operations so that fugitive particulate emissions are minimized. (2) In the alternative, use an underground bottom feed (plow) of coal to an underground conveyor system provided the exhaust gases from the enclosed spaces do not contain Total Particulate Matter: less than or equal to 0.02 grains/dry standard cubic foot	Minn. R. 7011.1105 (F)
Coal Pile Area: The total area of all coal piles shall be less than or equal to 14.5 acres.	Minn. R. 7009.0020

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog
Permit Number: 03700003 - 001

Subject Item: FS 008 PM Coal Outstacking

Associated Items: CE 029 Dust Suppression by Water Spray

What to do	Why to do it
Coal Loading Stations: Control fugitive particulate emissions from the loading of trucks or haulers by dust suppression methods so that emissions from such sources are minimized.	Minn. R. 7011.1105 (B)

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: FS 009 PM Coal Reclaim**Associated Items:** CE 029 Dust Suppression by Water Spray

What to do	Why to do it
Stockpiles, Stockpile Construction, and Reclaiming: (1) Control fugitive particulate emissions by dust suppression methods on such operations so that fugitive particulate emissions are minimized. (2) In the alternative, use an underground bottom feed (plow) of coal to an underground conveyor system provided the exhaust gases from the enclosed spaces do not contain Total Particulate Matter: less than or equal to 0.02 grains/dry standard cubic foot	Minn. R. 7011.1105 (F) and Minn. R. 7009.0020

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: FS 010 PM Petroleum Coke Storage (Erosion)**Associated Items:** CE 029 Dust Suppression by Water Spray

What to do	Why to do it
Coke Pile Area: The total area of all coal piles shall be less than or equal to 1.0 acre.	Minn. R. 7009.0020
Stockpiles, Stockpile Construction, and Reclaiming: (1) Control fugitive particulate emissions by dust suppression methods on such operations so that fugitive particulate emissions are minimized. (2) In the alternative, use an underground bottom feed (plow) of coal to an underground conveyor system provided the exhaust gases from the enclosed spaces do not contain Total Particulate Matter: less than or equal to 0.02 grains/dry standard cubic foot	Minn. R. 7011.1105 (F)

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog
Permit Number: 03700003 - 001

Subject Item: FS 013 PM Ash Hauling Traffic

Associated Items: CE 029 Dust Suppression by Water Spray

What to do	Why to do it
Control dust by watering, achieving at least 40% efficiency.	Minn. R. 7009.0020

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: FS 014 PM Coal Yard Traffic**Associated Items:** CE 029 Dust Suppression by Water Spray

What to do	Why to do it
Control dust by watering, achieving at least 40% efficiency.	Minn. R. 7009.0020

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: FS 015 PM Coal Conveyors 7,7B,7C

What to do	Why to do it
If exhaust gases from any enclosed coal handling facility exceed 20 percent opacity, either install an exhaust air system and control exhaust gases so that particulate emissions do not exceed 0.020 gr/dscf, or control exhaust gases using dust suppression methods so that particulate emissions do not exhibit Opacity: greater than 20 percent opacity	Minn. R. 7011.1105 (G)

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: FS 016 PM Coal Conveyor 8

What to do	Why to do it
If exhaust gases from any enclosed coal handling facility exceed 20 percent opacity, either install an exhaust air system and control exhaust gases so that particulate emissions do not exceed 0.020 gr/dscf, or control exhaust gases using dust suppression methods so that particulate emissions do not exhibit Opacity: greater than 20 percent opacity	Minn. R. 7011.1105 (G)

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

Subject Item: FS 017 PM Dumper Unload. Bldg. (fugitives from unloading railcar/scrapper)**Associated Items:** CE 031 Other

What to do	Why to do it
Unload railcars only within a permanent building or structure. If exhaust gases from such building or structure exceed 20 percent opacity, then the owner or operator shall either install an exhaust air system and limit particulate emissions to 0.020 gr/dscf or control exhaust gases using dust suppression methods so that particulate emissions do not exhibit Opacity: greater than 20 percent opacity	Minn. R. 7011.1105 (H)
Truck and Hauler Unloading Stations: Control fugitive particulate emissions from the unloading of truck or haulers by dust suppression methods so that emissions from such sources are minimized. Control emissions by unloading reclaimed coal within a partial enclosure and with fabric filters.	Minn. R. 7011.1105 (C)

TABLE B: SUBMITTALS

08/13/98

Facility Name: NSP - Black Dog
Permit Number: 03700003 - 001

Table B lists most of the submittals required by this permit. Please note that some submittal requirements may appear in Table A or, if applicable, within a compliance schedule located in Table C. Table B is divided into two sections in order to separately list one-time only and recurrent submittal requirements.

Each submittal must be postmarked or received by the date specified in the applicable Table. Those submittals required by parts 7007.0100 to 7007.1850 must be certified by a responsible official, defined in Minn. R. 7007.0100, subp. 21. Other submittals shall be certified as appropriate if certification is required by an applicable rule or permit condition.

Send any application for a permit or permit amendment to:

Permit Technical Advisor
Permit Section
Air Quality Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Also, where required by an applicable rule or permit condition, send to the Permit Technical Advisor notices of:

- accumulated insignificant activities,
- installation of control equipment,
- replacement of an emissions unit, and
- changes that contravene a permit term.

Unless another person is identified in the applicable Table, send all other submittals to:

Supervisor
Compliance Determination Unit
Air Quality Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Send submittals that are required to be submitted to the U.S. EPA regional office to:

Mr. George Czerniak
Air and Radiation Branch
EPA Region V
77 West Jackson Boulevard
Chicago, Illinois 60604

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

What to send	When to send	Portion of Facility Affected
Acid Rain Application for Permit Reissuance	due 180 days before expiration of Existing Permit	EU001
Application for Permit Reissuance	due 180 days before expiration of Existing Permit	Total Facility
Computer Dispersion Modeling Protocol	due 1,096 days after Permit Issuance for NOx. This protocol will describe the proposed modeling methodology and input data, in accordance with all requirements of 40 CFR pt. 51, Appendix W.	Total Facility
Computer Dispersion Modeling Protocol	due 30 days after Permit Issuance for PM-10. This protocol will describe the proposed modeling methodology and input data, in accordance with all requirements of 40 CFR pt. 51, Appendix W.	Total Facility
Computer Dispersion Modeling Results	due 1,462 days after Permit Issuance and after the MPCA has reviewed and approved the modeling protocol.	Total Facility
Computer Dispersion Modeling Results	due 90 days after Permit Issuance and after the MPCA has reviewed and approved the modeling protocol.	Total Facility
Fugitive Control Plan	due 60 days after Permit Issuance for review and approval by the Commissioner. The plan shall identify all fugitive emission sources, primary and contingent control measures, and recordkeeping. Daily recordkeeping must include, at a minimum, results of fugitive dust emissions observations, relevant meteorological data, control measures taken, and the date and time when the observations or control measures took place.	Total Facility
Relative Accuracy Test Audit (RATA) Notification	due 30 days before CEMS Relative Accuracy Test Audit (RATA)	SV001

TABLE B: RECURRENT SUBMITTALS

08/13/98

Facility Name: NSP - Black Dog

Permit Number: 03700003 - 001

What to send	When to send	Portion of Facility Affected
Acid Rain Program Electronically Submitted Quarterly Report	due 30 days after end of each calendar quarter starting 01/01/96	SV001
Excess Emissions/Downtime Reports (EER's)	due 30 days after end of each calendar quarter following Permit Issuance (Submit Deviations Reporting Form DRF-1 as amended). The EER shall indicate all periods of exceedances of the limit including exceedances allowed by an applicable standard, i.e. during startup, shutdown, and malfunctions.	SV001
Linearity Test Results Summary	due 30 days after end of each calendar quarter following Linearity and Leak Check Test (Acid Rain Program) if performed.	SV001
Relative Accuracy Test Audit (RATA) Results Summary	due 30 days after end of each calendar quarter following CEMS Relative Accuracy Test Audit (RATA) (in which the CEMS RATA was conducted).	SV001
COMS Calibration Error Audit Results Summary	due 30 days after end of each calendar half-year following COMS Calibration Error Audit .	SV001
Deviations Report	due 30 days after end of each calendar half-year following Permit Issuance (July 30th and January 30th). The first report covers January 1 - June 30. The second report covers July 1 - December 31.	Total Facility
Compliance Certification Report (Acid Rain Program)	due 60 days after end of each calendar year following Permit Issuance . The designated representative shall submit an annual compliance certification report for the unit in accordance with 40 CFR Section 72.90(a). The report shall include all information required by 40 CFR Section 72.90(b) and (c).	EU001
Compliance Certification	due 30 days after end of each calendar year following Permit Issuance (January 30th).	Total Facility
Emissions Inventory Report	due 91 days after end of each calendar year following Permit Issuance (April 1). To be submitted on a form approved by the Commissioner.	Total Facility
Performance Test Notification (written)	due 30 days before end of each year starting 05/31/97 (30 days before each Performance Test)	EU002
Performance Test Plan	due 30 days before end of each year starting 05/31/97 (30 days before each Performance Test)	EU002
Performance Test Report - Microfiche Copy	due 105 days after end of each year starting 05/31/97 (105 days after each Performance Test)	EU002
Performance Test Report	due 45 days after end of each year starting 05/31/97 (45 days after each Performance Test)	EU002
Performance Test Notification (written)	due 30 days before end of each 60 months starting 12/31/93 (30 days before each Performance Test)	EU001, EU003, EU004
Performance Test Plan	due 30 days before end of each 60 months starting 12/31/93 (30 days before each Performance Test)	EU001, EU003, EU004
Performance Test Report - Microfiche Copy	due 105 days after end of each 60 months starting 12/31/93 (105 days after each Performance Test)	EU001
Performance Test Report - Microfiche Copy	due 105 days after end of each 60 months starting 12/31/93 (105 days after each Performance Test)	EU003
Performance Test Report - Microfiche Copy	due 105 days after end of each 60 months starting 12/31/93 (105 days after each Performance Test)	EU004
Performance Test Report	due 45 days after end of each 60 months starting 12/31/93 (45 days after each Performance Test)	EU001

TABLE B: RECURRENT SUBMITTALS

08/13/98

Facility Name: NSP - Black Dog
Permit Number: 03700003 - 001

Performance Test Report	due 45 days after end of each 60 months starting 12/31/93 (45 days after each Performance Test)	EU003
Performance Test Report	due 45 days after end of each 60 months starting 12/31/93 (45 days after each Performance Test)	EU004

TECHNICAL SUPPORT DOCUMENT
For
AIR EMISSION PERMIT NO. 03700003-001

This Technical Support Document (TSD) is for all the interested parties of the permit and to meet the requirements that have been set forth by the federal regulations and Minnesota Rules (40 CFR, § 70.7(a)(5)) and Minn. R. 7007.0850, subp. 1.). The purpose of this document is to provide the legal and factual justification for each applicable requirement or policy decision considered in the preliminary determination to issue the draft permit.

CONTENT:

1. General Information

- 1.1. Applicant and Stationary Source Location:
- 1.2. Description Of The Permit Action
- 1.3. Emissions of the Facility

2. Applicable Rules

- 2.1 Federal New Source Review
- 2.2 Federal New Source Performance Standards
- 2.3 Acid Rain Program
- 2.5 National Environmental Standards for Hazardous Air Pollutants
- 2.6 State Performance Standards
- 2.7 Environmental Assessment
- 2.8 Other Rules

3. Technical Information

Boilers 1, 2, 3, and 4

Applicable Regulations: PM, opacity, SO₂

Requirements Common to All Boilers:

fuel use limits

pollution control equipment

air quality modeling analysis

Enclosed coal handling equipment

Fugitive Emission Sources

4. Conclusion

1. General Information

1.1. Applicant and Stationary Source Location:

Applicant/Address	Stationary Source/Address (SIC Code: 4911)
Northern States Power Company (NSP) 414 Nicollet Mall Minneapolis, Minnesota 55401	Black Dog Generating Plant 1400 Black Dog Road Burnsville, Minnesota 55337-1218

1.2. Description Of The Permit Action

This is a reissuance of an existing permit as required by Title V of the 1990 Clean Air Act Amendments. Most of the operating conditions of the permit will remain the same as in the past. Changes that have been made include:

- lower particulate limits at the stack level,
- lower Sulfur Dioxide (SO₂) limits,
- identification of potential air emission sources from coal and ash handling not included in previous permits; and
- more detailed specifications for operation of pollution control equipment.
- addition of one temporary and two emergency engines.
- addition of Phase II acid rain requirements for SO₂ and Nitrogen Oxides (NO_x)
- repermitting of the coal barge unloading facility

NSP was required by Minn. R. 7007.0350 to apply for a Part 70 total facility operating permit by September 15, 1995, the date on which the application was received. The last total facility permit was issued on September 17, 1976. NSP submitted an application for permit reissuance on March 28, 1991. Although a revised total facility permit was drafted by Minnesota Pollution Control Agency (MPCA), it was not issued, pending results of air quality modeling.

Since issuance of the original total facility permit in 1976, two amendments have been issued for the facility and four installation and operation permits. Past permit actions are summarized in Table 1A. The facility was issued an administrative order on October 28, 1987, because performance testing indicated that Particulate Matter (PM) emissions from Boiler No. 2 (EU002) exceeded permit limits.

Table 1A: Summary of Past Permitting Actions

Permit Number	Action Authorized
03700003-012	Installation of two emergency generators
202E-92-I/O-1	Installation of 6 baghouses
202E-91-I/O-1	Install diesel engine for fire pump
202E-84-I/O-2 Amd. 1	Added language for outstacking hopper, reclaim hopper, conveyors, railcar unloading bldg
202E-76-O-1 Amd. 1	Use of waste oil
202E-84-I/O-2	Install and operate atmospheric fluidized bed combustor in unit 2
202E-76-O-1	Facility operating permit

1.3. Emissions of the Facility

1.3.1 Criteria Pollutants

Table 1B presents a summary of the potential emission rates for criteria pollutants, in tons per year (tpy), attributable to the facility. Data on actual emissions was obtained from the permit application form GI-07. The potential to emit (PTE) numbers were obtained from GI-07, and verified through review of the permit application EC forms, modeling assumptions, and permit limits.

Table 1B. Total Facility Potential to Emit and Actual Emissions Summary and Attainment Status:

Pollutant	Potential to Emit* (tons/year)	Actual Emissions in 1994 (tons/year)	Attainment or Unclassified? (Yes or No)
Particulate Matter (PM)	5,533	120	NA
Particulate Matter less than 10 micron (PM ₁₀)	5,533	20	Yes
Sulfur Dioxide (SO ₂)	29,607	5,306	Yes
Nitrogen Oxides (NO _x)	17,961	6,898	Yes
Volatile Organic Compounds (VOCs)/Ozone	74	31	NA
Carbon Monoxide (CO)	6,680	737	No
Lead	0.36	0.10	Yes

*Potential emissions for PM, PM₁₀ and SO₂ are based on permit limits.

Table 2. Air Dispersion Modeling Emission Rates

PM₁₀ limits to meet the 24-hour and annual NAAQS

Source	Calculations and Regulatory Basis if not strictly a modeled limit	lbs/hour	tons/year
EU001 SV001	0.3lbs/MMBtu @ 910MMBtu/hr and 8760hours/yr 7011.0545 Max design capacity	273	1196
EU002 SV001	0.04lbs/MMBtu @ 1323MMBtu/hr and 8760hours/yr Limit to avoid NSPS Max design cap.	53	232
EU003 SV001	0.3lbs/MMBtu @ 1176MMBtu/hr and 8760hours/yr 7011.0545 Max design cap.	353	1545
EU004 SV001	0.3lbs/MMBtu @ 1892MMBtu/hr and 8760hours/yr 7011.0545 Max design cap.	568	2486
EU005 SV002	0.02 gr/dscf @ 3500cfm and 8760 hours/yr 7011.1105 Max design cap.	0.6	2.6
EU006 SV003	assume 1 lb/hour, 12.5 hours/day, 365 days/yr Meets 0.02 gr/dscf limit	1.0	2.3
EU007 SV004	0.01 gr/dscf @ 600cfm and 8760 hours/yr Max design cap.	0.05	0.23

EU008 SV005	0.005 gr/dscf @ 40,000cfm and 8760 hours/yr Max design cap.	1.7	7.5
EU009 & EU010 SV006	0.005 gr/dscf @ 52,000cfm and 8760 hours/yr Max design cap.	2.2	9.8
EU011 SV007	0.005 gr/dscf @ 29,000cfm and 8760 hours/yr Max design cap.	1.2	5.4
EU012 SV008	0.005 gr/dscf @ 23,200cfm and 8760 hours/yr Max design cap.	1.0	4.4
EU013 SV009	0.005 gr/dscf @ 19,000cfm and 8760 hours/yr Max design cap.	0.8	3.6
EU014 SV010	0.02 gr/dscf @ 1280cfm and 8760 hours/yr 7011.0715 and modeling Max design cap.	0.2	0.96
EU015 SV011	0.02 gr/dscf @ 650cfm and 8760 hours/yr 7011.0715 and modeling Max design cap.	0.1	0.49
EU016 SV012	0.02 gr/dscf @ 650cfm and 8760 hours/yr 7011.0715 and modeling Max design cap.	0.1	0.49
EU017 SV013	0.02 gr/dscf @ 2750cfm and 8760 hours/yr 7011.0715 and modeling Max design cap.	0.5	2.1
EU018 SV014	0.02 gr/dscf @ 360cfm and 8760 hours/yr 7011.0715 and modeling Max design cap.	0.06	0.27
EU019 SV001	0.02 gr/dscf @ 1500cfm and 8760 hours/yr 7011.0715 and modeling Max design cap.	0.26	1.1
EU020 & EU022 SV015	0.02 gr/dscf @ 4717cfm and 8760 hours/yr & 1.2 lbs/hr @ 10 tons/hour 7011.0715 and modeling Max design cap.	2.0	8.8
EU021 SV016	0.02 gr/dscf @ 1900cfm and 8760 hours/yr 7011.0715 and modeling Max design cap.	0.33	1.4
EU023 SV017	0.0022 lbs/hp-hr @ 300hp and 7575 hours/yr limits to avoid PSD for NOx but modeled at 5000 hours/year	0.66	1.7
EU024 SV018	0.00031 lbs/hp-hr @ 2598hp and 408 hours/yr limit to avoid PSD for NOx	0.8	0.16
EU025 SV019	0.00031 lbs/hp-hr @ 2598hp and 408 hours/yr limit to avoid PSD for NOx	0.8	0.16
ISA fire pump	limited to under 1 ton per year of any pollutant	0.339	< 1.0 actuals
FS001	AP-42 dump eq. @ 800 tons/hr, 24hr/day, 500hr/year, 40% control by watering to meet 7011.1105 and modeling	0.4	0.1
FS002	AP-42 @ 800 tons/hr, 7 transfer points, 24 hr/day, 500hr/yr, 77% control by use of cover to meet 7011.1105 and model	1.1	0.27

FS003	AP-42 dump eq. @ 6000tons/day, 365 days, no control The 6000 tons could be processed in 10 hours but is here stretched out to 24 hours. This is not a problem since reclaim emissions are not as high as the higher volume outstacking process and the two processes never occur at the same time. However, this is modeled as if it did occur together.	0.21	0.91
FS004	2.56 lbs/acres-day, 2 acres and 40% control to meet 7011.1105	0.13	0.56
FS005	2.56 lbs/acres-day, 5 acres and 40% control to meet 7011.1105	0.32	1.4
FS006	2.56 lbs/acres-day, 4 acres and 40% control to meet 7011.1105	0.26	1.1
FS007	2.56 lbs/acres-day, 3.5 acres and 40% control to meet 7011.1105	0.22	0.98
FS008	AP-42 dump eq. @ 10,000 tons/day 182.5 days/yr and 40% control to meet 7011.1105 the other half year of days is for reclaiming coal	0.21	0.45
FS009	AP-42 dump eq. @ 10,000 tons/day 182.5 days/yr and 40% control to meet 7011.1105 the other half year of days is for outstacking coal; hourly rate not modeled since both do not occur at same time and this is less than outstacking would be 0.12 lbs/hr	0.0	0.27
FS010	2.56 lbs/acres-day, 1 acre and 40% control to meet 7011.1105	0.06	0.28
FS011	AP-42 dump eq. @ 5,000 tons/day 365 days/yr and no control	0.17	0.76
FS012	AP-42 dump eq. @ 1,000 tons/day 365 days/yr and 40% control to meet 7011.1105	0.02	0.09
FS013	AP-42 paved and unpaved road traffic assuming 18 bottom ash trips/day and 52 flyash trips/day (32 for units 1,2,3 and 20 for unit 2) based on maximum storage capacity and 40% control. Annual based on ash production potential.	1.3	1.4
FS014	AP-42 unpaved road traffic based on 127 mi/day, 8480 tons/day transferred to piles and 40% control. Annual based 23,178 mi/yr outstacking and 21,900 mi/yr reclaim. Assume not all 10,000 tons unloaded are sent to piles, the rest is sent to silos.	0.95	4.0
FS015	AP-42 @ 10,000 tons/day, 2 transfer points, 24 hr/day, 365 days/yr, no control	0.69	3.0
FS016	AP-42 @ 6,000 tons/day, 1 transfer point, 24 hr/day, 365 days/yr, no control	0.21	0.91
FS017	AP-42 dump eq. @ 10,000 tons/day 12.5 hr/day 365 days/yr and 99% control to meet 7011.1105 (20% opacity)	0.037	0.16
ISA 200t Hopper	AP-42 @ 10,000 tons/day, 24 hr/day, limited days/yr to keep actuals insignificant, no control	0.35	<1.0 insig

SO₂ Limits to meet 1-hour MNAAQS

Source	Calculations and Regulatory Basis if not strictly a modeled limit	lbs/hour	tons/year
EU001 SV001	1.3lbs/MMBtu @ 910MMBtu/hr and 8760hours/yr Max design capacity	1183	5182
EU002 SV001	1.2lbs/MMBtu @ 1323MMBtu/hr and 8760hours/yr Limit to avoid NSPS Max design cap.	1588	6955
EU003 SV001	1.3lbs/MMBtu @ 1176MMBtu/hr and 8760hours/yr Max design cap.	1529	6697
EU004 SV001	1.3lbs/MMBtu @ 1892MMBtu/hr and 8760hours/yr Max design cap.	2460	10,773
EU023 SV017	0.5% fuel sulfur limit @ 7575 hours/yr limit to more than satisfy 7011.2300	0.6	2.8
GP001 (EU024 and EU025, SV018 and SV019)	0.5% fuel sulfur limit @ 816 hours/yr combined for both engines limit to more than satisfy 7011.2300	8.6 per stack	3.5 total for both stacks

Table 3. Non-Modeled Allowable and Potential Nitrogen Oxides Emission Rates

source	Calculations and Regulatory Basis	lbs/hour	tons/year
EU001 SV001	0.3lbs/MMBtu @ 910MMBtu/hr and 8760hours/yr 7011.0545 Max design capacity	273	1196
EU002 SV001	0.04lbs/MMBtu @ 1323MMBtu/hr and 8760hours/yr Limit to avoid NSPS Max design cap.	53	232
EU003 SV001	0.3lbs/MMBtu @ 1176MMBtu/hr and 8760hours/yr 7011.0545 Max design cap.	353	1545
EU004 SV001	0.3lbs/MMBtu @ 1892MMBtu/hr and 8760hours/yr 7011.0545 Max design cap.	568	2486
EU023 SV017	14 grams/hp-hr @ 7575 hours/yr Limit to avoid PSD significance threshold	9.25	35.1
GP001 (EU024 and EU025, SV018 and SV019)	16 grams/hp-hr @ 816 hours/yr combined for both engines Limit to avoid PSD significance threshold	86.5 per stack	35.3 total for both stacks

1.3.2 Non-criteria pollutants

No limits have been set in the permit for Hazardous Air Pollutants (HAP), and currently no ambient standards exist for hazardous air pollutants. Section 112(n)(1)(A) of the Clean Air Act mandates that the U.S. Environmental Protection Agency (EPA) perform a study, to be presented in a report to congress, of the hazards to public health reasonably anticipated to occur as a result of emissions of the HAP's by fossil fuel-fired electric utility steam generating units. The report will include; an assessment of HAP emission factors and rates from fossil fuel fired utility boilers, consideration of control strategies, and a determination as to whether HAPs emission control from these sources is warranted. The study is referred to as the "utility HAP study." EPA has received many extensions to the deadline for submittal of this report. The report was originally due to congress in November of 1993 but was not finalized until the beginning of 1998. The Agency will amend any existing permit to be consistent with EPA's rulemaking.

The Utility HAP study will develop more accurate emission factors for various boiler types for HAPs than exist now. Currently, emission factors that are available are not considered to be highly accurate. Nonetheless, NSP was required to estimate HAP emissions using available factors and submit those estimates with their Part 70 permit application. Those estimates are attached. Many of the emission factors for HAPs are based on actual stack tests that were conducted by NSP at the Black Dog facility in 1991. The emission factors for waste oil combustion is based on oil sampling and mass balance calculations. Natural gas HAP emission factors were taken from the Fire data base version 4.0.

2. Applicable Rules

2.1 Federal New Source Review

The facility is classified as a major source as defined in 40 CFR § 52.21(b)(1)(i) for the New Source Review (NSR) program. Because the facility existed prior to 1975, and none of the facility modifications exceeded the thresholds for significant emission increases listed in 40 CFR § 52.21(b)(23), the facility has not been required to conduct a review under the NSR or Prevention of Significant Deterioration (PSD) programs.

In particular, to avoid triggering NSR, Air Emission Permit No. 202E-84-I/O-2, which authorized the modification of Boiler No. 2 (EU002), contains "synthetic minor" limits on PM and SO₂ emissions. These permit limits have been carried over into the Title V permit.

Table 1C. Facility Classification

Classification (put x in appropriate box)	Major	Synthetic Minor	Minor	N/A
Prevention of Significant Deterioration	x	(Boiler 2 modification)		
Non Attainment Area (CO)	x			
Operating Permit Program	x			

2.2 Federal New Source Performance Standards

No New Source Performance Standards (NSPS) apply to the facility because all boilers were installed prior to 1971, the earliest applicability date for NSPS for steam generating units. Boiler No. 2 was rebuilt in 1985, however, the construction did not meet the NSPS definition of modification (40 CFR § 60.2) which would trigger NSPS applicability because emissions from the reconstructed unit did not increase. The lower emissions rates for SO₂ and PM on emission unit 2 reflect an emission rates that constitute a zero increase in emissions, thus not triggering a modification.

2.3 Acid Rain Program

Title IV of the Clean Air Act Amendments of 1990 requires electric utilities to substantially reduce emissions of SO₂ and NO_x, the primary pollutants that contribute to acid rain. Through the requirement that utilities hold SO₂ allowances for each ton of SO₂ they emit, the EPA plans to cut annual national SO₂ emissions by about a factor of two. NO_x emissions reductions will be controlled by emission limits set for each type of utility boiler, on a lb/mmBtu basis.

The regulation takes effect in two phases. Phase I took effect in 1995 and Phase II will take effect in the year 2000. The Black Dog plant is not subject to Phase I, but will be subject to Phase II. As such, NSP will be required to hold allowances equal to the tons of SO₂ emissions from the plant after January 1, 2000. Those allowances and emissions will be tracked by EPA. Though emissions and compliance are the responsibility of EPA, the MPCA is required to issue a permit that summarizes the requirements of the regulation. Each of the individual boilers have requirements associated with them in the permit as required by 40 CFR § 72.50. Additionally, NSP will be required to meet NO_x emission limits, set in lb/mmBtu for the each boiler, or on a group wide average. NSP has elected to meet a group wide average for all the NSP coal fired boilers in the state of Minnesota. 40 CFR pt. 72 requires NSP to submit their NO_x Acid Rain permit applications by January 1, 1998 and the MPCA to reopen the permit and add the NO_x emission limits by January 1, 1999.

The MPCA is required to issue permits to Title IV affected facilities by December 31, 1997. This Title V permit issuance fulfills those requirements by including Acid Rain requirements in the permit.

The NSP Black Dog Acid Rain permit application is attached to the permit in order to fulfill 40 CFR § 72.50(a)(1) that requires all elements required for a complete application to be included in the permit.

2.4 National and State Ambient Air Quality Standards (40 CFR pt. 50)

The National Ambient Air Quality Standards (NAAQS), as found in 40 CFR pt. 50, and the Minnesota Ambient Air Quality Standards (MAAQS), set the maximum concentration of pollutants allowed in the ambient air. As such they apply to all air emissions sources. Ambient air monitoring and dispersion modeling is used to determine whether a facility is in compliance with these standards. Modeling has been completed for SO₂ (see report dated January 12, 1995)

and PM (see report dated February 1992) for the NSP Black Dog facility. Many of the PM and SO₂ emission limits for the facility have been established based on modeling results. Modeling for particulates was completed using total PM emissions. The modeling was used to check for possible PM₁₀ 24-hour NAAQS violations by using the assumption that PM₁₀ emissions are a subset of the total PM emissions and therefore the total PM modeling is a worst case situation. In accordance with MPCA policy (memorandum from Lisa Thorvig to Air Quality Division staff dated October 29, 1993), this permit also requires that NSP conduct modeling to ensure that the facility is in compliance with NO_x ambient air quality standards. MPCA staff believe it is unlikely that the facility emits enough carbon monoxide, volatile organic compounds, or lead to cause an exceedance of ambient air quality standards. Therefore modeling is not required for those pollutants.

After further review of the 1992 particulate modeling that was done for this facility. It became clear that certain assumptions were made in the modeling that were not consistent with the enforceable permit requirements. Two main areas of concern were operating hours and stack emissions of some of the coal handling operations. The model assumed operating hours limitation even when the permit did not specify such limits. Furthermore, due to these operating hour limits in the model, the 24-hour average hourly emission rate on some operations were modeled at a very low rate which could not be effectively stack tested to prove compliance. Some operations had very low emission rates due solely to the low estimates given by AP-42. The limited stack test data available for this facility showed AP-42 estimates to be in some cases 2 to 10 times lower than actuals. This is hypothesized to be caused by the introduction of large volume exhaust fans to an operation that would normally not produce great amounts of air-borne (non-settling) emissions.

NSP was informed of this situation and was told to remodel the facility for particulates (actually PM₁₀ this time). NSP remodeled the facility for PM₁₀ without any hours limitation on equipment (except the coal dumper building) and with emission rates that could be effectively tested to show compliance. The model did show possible exceedances in parts of the coal yard which is not effectively fenced off from the public. Therefore, NSP has agreed to place a fence from the main plant down along the new berm along Black Dog Road to the ash ponds and then across to Black Dog Lake. The Black Dog Lake side of the coal yard will be the only part of the yard that will not be fenced. This is due to the Minnesota Department of Natural Resources placing the lake off limits to public boating, the bog like nature of the shoreline and the frequent flooding problems in the area.

2.5 National Environmental Standards for Hazardous Air Pollutants (40 CFR pt. 63)

None of the air emission sources at the facility are included in the listed source categories for which National Environmental Standards for Hazardous Air Pollutants (NESHAP) will be promulgated under 40 CFR pt. 63.

2.6 Applicable State Performance Standards:

Minn. R. 7011.1105 "Standards of Performance for Certain Coal Handling Facilities" applies because the facility is located within the Minneapolis-St. Paul Air Quality control Region.

2.7 Environmental Assessment

This permit does not authorize new construction or increases in air emissions which would be subject to environmental review under Minn. R. ch. 4410.

2.8 Other Rules

Minn. R. 7021.0050 “Acid Deposition Control Requirements in Minnesota” subps. 1 through 3 apply to NSP facilities. Subp. 1 limits total emissions from all NSP facilities in Minnesota to 130 percent of the SO₂ emitted from NSP’s facilities in 1984. A permit which applies to all NSP facilities in Minnesota has been issued to establish an SO₂ limit as required by this rule (Air Emissions Permit No. 00000001-002). A specific SO₂ limit for the Black Dog generating plant is not set by this rule. Therefore the rule is not included in this permit as an applicable requirement.

3. Technical Information

The removal of monitoring requirements for the control equipment on the boilers was suggested by the MPCA Utilities Permit Team. The team found monitoring of control equipment parameters such as pressure drop across a baghouse or voltage and amperage of an electrostatic precipitator was environmentally insignificant when past emissions testing clearly shows that opacity and not mass emissions is the limiting parameter for PM₁₀ and the emission unit is continuously monitored for opacity with it’s own dedicated opacity monitor. However at Black Dog the opacity is monitored only at the combined stack for all four boilers. Therefore, individual testing of each boiler is required initially to correlate opacity and particulate emissions on an individual basis before the combined opacity can be used for gap filling. Based on past combined testing of particulate and opacity of units 1, 3 and 4 the actual opacity was on average at 48 percent of the limit where as the actual particulate emission rate was on average at 7.3 percent of the limit. Therefore, it appears that in general an opacity limit violation is more likely to occur before a particulate emission limit violation and so monitoring opacity should be adequate for determining compliance with the particulate limit for units 1, 3 and 4. Emission Unit 2 however has a low particulate limit and therefore can not use opacity strictly for determining compliance with the particulate limit. For this reason, Unit 2 shall be stack tested on an annual basis.

The removal of monitoring requirements for the control equipment on the Material handling equipment was suggested by the MPCA Utilities Permit Team. The team found monitoring of control equipment parameters such as pressure drop across a baghouse was environmentally insignificant when actual emissions are less than 5 tons/year. Since the actual emissions from these sources are generally quite low the permit team agreed that a reactive visible emissions monitoring and repair option was adequate to assure compliance with the permit conditions.

The pound per hour emission limit for SO₂ and PM on Stack Vent No. 1 is the total emission rate of all boilers running at 100 percent heat input. These limits will assure compliance with the NAAQS and MAAQS for this facility at heat input values of 100 percent or higher. Therefore, these limits will assure compliance with the standards at loads above 100 percent such as during Short Term Emergency and Testing (STET).

Mass emission rates in lbs/hr or grains/dscf, or hours of operation limits were placed on most of the coal handling emission units. These units only had limits of gr/dscf and yet the latest modeling assumed certain daily operating limits to show compliance with the 24-hour PM₁₀ standard. The new modeling assumes an increase in the daily potential emissions from these emission units so that the permitted emissions match the modeled emissions. **Emission limits that are based solely on ambient air modeling and thus used to show compliance with the MNAAQS and NAAQS are State Only Requirements and therefore not federally enforceable. This was determined through conversations with Shaheera Fateen at EPA Region 5 during the first week of June 1998.**

Fugitive source emissions were also increased in the new model to reflect daily maximum operations. Since fugitive emissions from coal piles are related to the exposed surface area, the size limit for the coal pile is an area limit instead of the usual tonnage limit. The barge unloading facility operation is being added to this permit, due to the successful modeling of the facility's emissions showing no violation of the NAAQS

HCL emissions were recently submitted and although the emission rates are significant, there will be no conditions placed on these emissions at this time due to a lack of regulatory authority to limit HAPs at electric generating facilities.

EU002 does not have any language allowing the boiler to exceed the maximum firing rate during STET. This is due to EU002 being too close to its PM limit to allow any exceedance of the normal operating conditions.

4. Conclusion

Based on the information provided by the Northern States Power Company, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 03700003-001, and this TSD, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

The above statement is under the assumption that no Modeled Violations of the NAAQS or MNAAQS will be found when the modeling is performed at the end of this permit term. If a modeling violation is found, this would be a violation of an applicable requirement as defined in Minn. R. 7007.0100, subp. 7.L or M.

Staff Members on Permit Team: Daren Zigich
 Marshall Cole
 Tom Kosevich
 Yolanda Hernandez

Attachment: CD-01 Forms
 Others specified in section 3