

AIR EMISSION PERMIT NO. 02300012- 001

IS ISSUED TO

Northern States Power Company

NORTHERN STATES POWER COMPANY - MINNESOTA VALLEY

East Highway 212

Granite Falls, Chippewa County, Minnesota 56241

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:

Total Facility Operating Permit

Application Date:

September 1995

This permit authorizes the Permittee to operate 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 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

Issue Date: February 11, 1998

Expiration: (5 years from issuance)

All Title I Conditions do not expire.

Michael J. Sandusky
Acting Division Manager
Air Quality Division

for Peder A. Larson
Commissioner
Minnesota Pollution Control Agency

DKZ:lao

TABLE OF CONTENTS

Notice to the Permittee

Permit Shield

Facility Description

Table A: Limits and Other Requirements

Table B: Submittals

Table C: Compliance Schedule

Appendices: Attached and Referenced in Table A

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: Minn. R. ch. 7030 (Noise Pollution Control).

FACILITY DESCRIPTION:

The Minnesota Valley Generating Plant generates steam for electric power and is rated at a maximum of 53 megawatts. The facility contains two boilers, fuel receiving, handling and storage capabilities and ash handling, storage and shipping capabilities. The facility has the capability of receiving fuel by rail or truck.

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/11/98

Facility Name: NSP - Minnesota Valley

Permit Number: 02300012 - 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
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; 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
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)
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)
C. TESTING REQUIREMENTS	hdr
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A, B, and/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
D. MONITORING REQUIREMENTS	hdr
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)
Operation of Monitoring Equipment: Unless otherwise noted in Tables A, B, and/or C, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.	Minn. R. 7007.0800, subp. 4(D)
Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment (any requirements applying to continuous emission monitors are listed separately in this permit).	Minn. R. 7007.0800, subp. 4(D)
E. RECORD KEEPING	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/11/98

Facility Name: NSP - Minnesota Valley

Permit Number: 02300012 - 001

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)
F. REPORTING	hdr
Oral or Written (faxed) Notification of Deviation 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. 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
Breakdown Reporting For CE 001: Notification is not required for breakdown of ESP sections in CE 001, if the number of remaining operating sections equals or exceeds the number of operating sections during the most recent performance test during which the EU 001 particulate matter and opacity limits were met, and, during the breakdown, the opacity level measured by the continuous opacity monitor on SV 001, does not exceed the opacity limit in EU 001. As an alternative, notification is not required for breakdown of ESP sections in CE 001, if during the most recent performance test that concurrently measured PM and opacity, the measured opacity expressed as a percentage of the EU 001 opacity limit, was greater than the measured PM expressed as a percentage of the EU 001 PM limit, and, during the breakdown the opacity level measured by the continuous opacity monitor on SV 001 does not exceed the opacity level measured during the most recent performance test.	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 a permit amendment is needed, submit an 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

02/11/98

Facility Name: NSP - Minnesota Valley

Permit Number: 02300012 - 001

Subject Item: EU 001 Boiler #4

Associated Items: CE 001 Electrostatic Precipitator - High Efficiency

MR 001

MR 002

MR 003

MR 004

MR 005

MR 006

SV 001

What to do	Why to do it
A. EMISSION LIMITS	hdr
Sulfur Dioxide: less than or equal to 4.0 lbs/million Btu heat input	Minn. R. 7011.0510, subp. 1
Total Particulate Matter: less than or equal to 0.6 lbs/million Btu heat input	Minn. R. 7011.0510, subp. 1
Opacity: less than or equal to 20 percent opacity except that a maximum of 60 percent opacity shall be allowable for four minutes in any 60-minute period and a maximum of 40 percent opacity shall be allowable for an additional four minutes 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)(i); 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)
NOx Averaging Plan: Maintain an annual average NOx emission rate of 0.47 lbs/MMBtu and limit the annual heat input to less than or equal to 1,189,000 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 76.5, 76.6, or 76.7.	40 CFR Section 76
Allowed fuel types: bituminous coal, subbituminous coal, petroleum coke, distillate fuel oil less than 0.5 percent sulfur, natural gas, used oil, non-hazardous spill clean-up materials and non-hazardous boiler cleaning agents.	Minn. R. 7007.0800, subp. 2 and meets fuel oil SO2 emission limit 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, unless good combustion is demonstrated at higher flows; cleaning waste shall be introduced in to the boiler when the boiler is operating at a level of at least 75 percent of rated capacity; records of boiler cleaning agent incineration shall be kept on file, including dates, origin of material, cleaning agent boiler feed rate, and operating capacity of the boiler during incineration, including steam flow.	Minn. R. 7007.0800, subp. 2
C. TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 08/31/93 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 08/31/93 (7 days before each Performance Test)	Minn. R. 7017.2030, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/11/98

Facility Name: NSP - Minnesota Valley

Permit Number: 02300012 - 001

<p>Boiler Alternative Operating Conditions for Performance Testing:</p> <p>Alternative Operating Conditions during testing are defined as 90 percent to 100 percent 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 percent of any applicable emission limit for which emissions are measured, then the boiler operation will be limited to the tested operating rate.</p> <p>(2) If results are less than or equal to 90 percent of all applicable emission limits for which emissions are measured, boiler operation will be limited to 110 percent 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 Conditions for Performance Testing:</p> <p>If performance test results measure emissions at 90 percent or less of any applicable emission limits for any tested pollutant, STET operation is defined as operation beyond 110 percent of the average operating rate achieved during that performance test.</p> <p>If performance test results measure emissions at greater than 90 percent of any applicable emission limit for any tested pollutant, STET operation is defined as operation beyond 100 percent of the average operating rate achieved during that performance test.</p> <p>In no case will STET operation be higher than allowed by any 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. MONITORING REQUIREMENTS</p>	hdr
<p>Emissions Monitoring: The owner or operator shall use a CEMS to measure SO₂, NO_x, and CO₂ emissions and flow rate for each affected unit in accordance with 40 CFR Section 75.10.</p>	40 CFR pt. 75
<p>Emissions Monitoring: The owner or operator shall use a COMS to measure opacity emissions from SV001.</p>	Minn. R. 7017.1000, subp. 1
<p>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.</p>	40 CFR pt. 75, Appendix B, Section 2.1
<p>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.</p>	40 CFR pt. 75, Appendix B, Section 2.2
<p>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.</p>	40 CFR pt. 75, Appendix B, Section 2.3
<p>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.</p>	40 CFR Section 75.21
<p>COMS Continuous Operation: Except for system breakdowns, repairs, calibration checks and zero and span adjustments, all COMS shall be in continuous operation.</p>	Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/11/98

Facility Name: NSP - Minnesota Valley

Permit Number: 02300012 - 001

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. Daily CD Checks are required only during periods of operation.	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. Audits are required only during periods of operation.	Minn. R. 7007.0800, subp. 2
E. RECORD KEEPING	hdr
Keep on site at the source each of the following documents for a period of five (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.	40 CFR Section 72.9(f)(l)
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
Recordkeeping: The owner or operator must retain records of all CEMS monitoring data and support the 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
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
F. REPORTING	hdr
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
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

02/11/98

Facility Name: NSP - Minnesota Valley

Permit Number: 02300012 - 001

Subject Item: EU 002 Boiler #5**Associated Items:** SV 002

What to do	Why to do it
Sulfur Dioxide: less than or equal to 0.7 lbs/million Btu heat input	Title I Condition: to avoid being a major modification under 40 CFR Section 52.21; meets requirements of Minn R. 7011.0515, subp. 1
Total Particulate Matter: less than or equal to 0.4 lbs/million Btu heat input	Minn. R. 7011.0515, subp. 1
Opacity: less than or equal to 20 percent opacity except that a maximum of 60 percent opacity shall be permissible for four minutes in any 60-minute period and that a maximum of 40 percent opacity shall be permissible for four additional minutes in any 60-minute period.	Minn. R. 7011.0515, subp. 2
Allowed fuel types: distillate fuel oil less than 0.5 percent sulfur and natural gas	Minn. R. 7007.0800, subp. 2 and meets fuel oil sulfur limit in Minn. R. 7011.0510, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/11/98

Facility Name: NSP - Minnesota Valley

Permit Number: 02300012 - 001

Subject Item: EU 003 Coal Crusher/Hopper**Associated Items:** CE 002 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 003

What to do	Why to do it
Opacity: less than 20 percent opacity	40 CFR Section 60.252(c)
Check for visible emissions (during daylight hours) from the control equipment (CE 002) 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
Record keeping: 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

02/11/98

Facility Name: NSP - Minnesota Valley

Permit Number: 02300012 - 001

Subject Item: CE 001 Electrostatic Precipitator - High Efficiency**Associated Items:** EU 001 Boiler #4

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
<p>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.</p> <p>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.</p>	Minn. R. 7007.0800, subp. 4
<p>Monitor and record the identity and minimum number of ESP sections (or SCA if sections are not equivalent) in service each day that the ESP is operating.</p> <p>However, this monitoring and record keeping is not required if during the most recent performance test that concurrently measured PM and opacity:</p> <p>1) the measured opacity expressed as a percentage of the opacity limit was greater than the measured PM expressed as a percentage of the PM limit, and, 2) opacity and PM emissions met applicable limits.</p>	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/11/98

Facility Name: NSP - Minnesota Valley

Permit Number: 02300012 - 001

Subject Item: FS 001 PM10 - Rail Car Unloading to Hopper**Associated Items:** CE 005 Dust Suppression by Water Spray

What to do	Why to do it
Operating Hours: less than or equal to 7488 hours/year using 12-month Rolling Sum	Title I Condition: to avoid being a major modification under 40 CFR Section 52.21
Calculate and record the monthly and the 12-month rolling sum operating hours for FS 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: to avoid being a major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/11/98

Facility Name: NSP - Minnesota Valley

Permit Number: 02300012 - 001

Subject Item: FS 002 PM10 - Coal Hopper Unloading to Outfeed Conveyor**Associated Items:** CE 005 Dust Suppression by Water Spray

What to do	Why to do it
Opacity: less than 20 percent opacity	40 CFR Section 60.252(c)
Operating Hours: less than or equal to 7488 hours/year using 12-month Rolling Sum	Title I Condition: to avoid being a major modification under 40 CFR Section 52.21
Calculate and record the monthly and the 12-month rolling sum operating hours for FS 002. Complete the calculation and recording by the end of each month, for the previous month and the previous 12-month period.	Title I Condition: to avoid being a major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/11/98

Facility Name: NSP - Minnesota Valley

Permit Number: 02300012 - 001

Subject Item: FS 003 PM10 - Coal Handling - Out feed Conveyor to Stacking Conveyor**Associated Items:** CE 005 Dust Suppression by Water Spray

What to do	Why to do it
Opacity: less than 20 percent opacity	40 CFR Section 60.252(c)
Operating Hours: less than or equal to 7488 hours/year using 12-month Rolling Sum	Title I Condition: to avoid being a major modification under 40 CFR Section 52.21
Calculate and record the monthly and the 12-month rolling sum operating hours for FS 003. Complete the calculation and recording by the end of each month, for the previous month and the previous 12-month period.	Title I Condition: to avoid being a major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/11/98

Facility Name: NSP - Minnesota Valley

Permit Number: 02300012 - 001

Subject Item: FS 004 PM10 - Coal Transfer - Stacking Conveyor to Coal Storage Pile**Associated Items:** CE 005 Dust Suppression by Water Spray

What to do	Why to do it
Opacity: less than 20 percent opacity	40 CFR Section 60.252(c)
Operating Hours: less than or equal to 7488 hours/year using 12-month Rolling Sum	Title I Condition: to avoid being a major modification under 40 CFR Section 52.21
Calculate and record the monthly and the 12-month rolling sum operating hours for FS 004. Complete the calculation and recording by the end of each month, for the previous month and the previous 12-month period.	Title I Condition: to avoid being a major modification under 40 CFR Section 52.21; Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/11/98

Facility Name: NSP - Minnesota Valley

Permit Number: 02300012 - 001

Subject Item: FS 006 PM10 - Transload of Coal in Trucks to Off-site**Associated Items:** CE 005 Dust Suppression by Water Spray

What to do	Why to do it
Opacity: less than 20 percent opacity	40 CFR Section 60.252(c)
Process Throughput: less than or equal to 1000 tons/day	Title I Condition: to avoid being a major modification under 40 CFR Section 52.21

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/11/98

Facility Name: NSP - Minnesota Valley

Permit Number: 02300012 - 001

Subject Item: FS 007 PM10 - Coal and Coke Reclaim - Transfer to Hopper/Crusher**Associated Items:** CE 002 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

What to do	Why to do it
Opacity: less than 20 percent opacity	40 CFR Section 60.252(c)

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/11/98

Facility Name: NSP - Minnesota Valley
Permit Number: 02300012 - 001

Subject Item: FS 008 PM10- Covered Coal Conveyor

Associated Items: CE 006 Other

What to do	Why to do it
Opacity: less than 20 percent opacity	40 CFR Section 60.252(c)

TABLE B: SUBMITTALS

02/11/98

Facility Name: NSP - Minnesota Valley

Permit Number: 02300012 - 001

Table B lists the submittals you must send to the Commissioner. Table B is divided into two sections, for source-specific submittal requirements and for submittals required of all permittees. Source-specific submittals are further organized as either one-time only or recurrent requirements. You may also be subject to additional reporting requirements contained in the compliance schedule located in Table C of this permit. All submittals must be postmarked or received by the date specified in the table, and certified by a responsible official, defined in Minn. R. 7007.0100, subp. 21. Submittals which must be provided on standardized forms approved by the Commissioner are noted in Tables B and C.

Send any application for a permit or permit amendment to: Permit Information Coordinator, Permit Section, Air Quality Division, Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, Minnesota 55155-4914. Also send the Permit Information Coordinator notices of: accumulated insignificant activities, installation of control equipment, replacement of an emissions unit, and changes that contravene a permit term.

Send all other submittals to: Compliance Tracking Coordinator, Compliance Determination Unit, Air Quality Division, Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, Minnesota 55155-4194.

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS

02/11/98

Facility Name: NSP - Minnesota Valley

Permit Number: 02300012 - 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 NO _x , SO ₂ and 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 . The results shall be submitted 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 and primary and contingent control measures.	Total Facility
Relative Accuracy Test Audit (RATA) Notification	due 30 days before CEMS Relative Accuracy Test Audit (RATA)	EU001

TABLE B: RECURRENT SUBMITTALS

02/11/98

Facility Name: NSP - Minnesota Valley

Permit Number: 02300012 - 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	EU001
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 for Opacity and SO ₂ including exceedances allowed by an applicable standard, i.e. during startup, shutdown, and malfunctions.	EU001
Linearity Test Results Summary	due 30 days after end of each calendar quarter following Linearity and Leak Check Test (Acid Rain Program) if performed.	EU001
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).	EU001
COMS Calibration Error Audit Results Summary	due 30 days after end of each calendar half-year following COMS Calibration Error Audit if performed.	EU001
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 (for the previous calendar year). To be submitted on a form approved by the Commissioner. The report covers all deviations experienced during the calendar year.	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 60 months starting 08/31/93 (30 days before each Performance Test)	EU001
Performance Test Plan	due 30 days before end of each 60 months starting 08/31/93 (30 days before each Performance Test)	EU001
Performance Test Report - Microfiche Copy	due 105 days after end of each 60 months starting 08/31/93 (105 days after each Performance Test).	EU001
Performance Test Report	due 45 days after end of each 60 months starting 08/31/93 (45 days after each Performance Test).	EU001

TECHNICAL SUPPORT DOCUMENT
For
AIR EMISSION PERMIT NO. 02300012-01

This Technical Support Document (TSD) is for all the interested parties of the permit. The purpose of this document is to set forth the legal and factual basis for the permit conditions, including references to the applicable statutory or regulatory provisions.

1. General Information (*Information will be obtained from permit application forms GI-01, GI-04, GI-05 parts 1&2, and GI-07*)

1.1. Applicant and Stationary Source Location:

Owner and Operator Address and Phone Number (list both if different)	Facility Address (SIC Code: 4911)
Northern States Power Company (NSP) 414 Nicollet Mall Minneapolis, Minnesota 55401-1993 (612)330-7682	Minnesota Valley Generating Plant East Hwy. 212 Granite Falls, Minnesota 56241

1.2. Description of the facility

The Minnesota Valley Generating Plant generates steam for electric power and is rated at a maximum of 53 megawatts (MW). The facility contains two boilers, fuel receiving, handling and storage capabilities and ash handling, storage and shipping capabilities. The facility has the capability of receiving fuel by rail or truck.

The main boiler (boiler 4) was built in 1953 and began operation in 1954. The unit is a wall-fired dry bottom boiler with a rated capacity of 540 MMBtu/hr. Bottom ash is removed from the boiler in a water slurry and mixed with fly ash from the Electrostatic Precipitator (ESP). This mixture is then slurried to an ash settling pond by way of an underground pipeline. Emissions from the boiler are vented to the atmosphere through a 277 foot stack (stack/vent 001). Particulate Matter (PM) from the burning of coal is controlled by the use of an ESP.

Boiler 4 usually burns subbituminous coal and petroleum coke, although it can burn bituminous coal, distillate fuel and natural gas. Coke is generally burned at all times at this facility due to slag build up on the walls of the boiler if coke is not burned with the coal. Since pet coke generally has a fairly high sulfur content, the Sulfur Dioxide (SO₂) emissions may be higher than a comparable boiler burning only subbituminous coal.

Boiler 5 is a small auxiliary boiler rated at 6.3 MMBtu/hr. The unit was installed in 1991 and is used for space heating. The unit only burns distillate fuel oil or natural gas.

1.3 Description of any changes allowed with this permit issuance

The Coal conveyor from the coal crushing building to the main plant is being added as a New Source Performance Standard (NSPS) subpart Y source. This source has been in place since 1991, however at the time, MPCA policy did not consider this to be an NSPS source. This new permit adjusts that ruling and will thus require an initial performance test on the source.

The only change in operation is strictly a permitting change since transloading of coal from this facility has never been performed. However the facility wants to keep this option but at a reduced capacity of 1000 tons/day which is roughly 1/3 of the previous capacity of 1,000,000 tons/year.

1.4 Description of all amendments issued since the issuance of the last total facility permit and to be included in the Part 70 Permit.

Permit Number and Issuance Date	Action Authorized
202M-91-I/O-1 October 7, 1991	Installation and operation of baghouses for the new and existing coal handling equipment (new crusher building, and two vents for the existing Unit No. 4 coal hopper.
202M-91-I/O-1 December 2, 1991	Installation and operation of the 6.3 MMBtu/hr boiler used for space heating.
202M-92-I/O-2 February 3, 1992	Reissue of previous permit
02300012-12 March 24, 1994	Installation and operation of new coal transfer and train unloading system consisting of hoppers and conveyors. Also addition of coal transloading operation for off-site delivery.

1.5. Facility Emissions:

Table 1. Total Facility Potential to Emit Summary:

Note: Quantification of emissions by emission unit is discretionary. The author may choose to include only total facility emissions, include breakdown of emissions for the larger emission units, or include emissions for all emission units. Quantification of total facility emissions is required.

EU #	SV#	Emission Unit Description	PM tpy	PM ₁₀ tpy	SO ₂ tpy	NO _x tpy	CO tpy	VOC tpy	Pb tpy	Single HAP tpy	All HAPs tpy
001	001	540 MMBtu/hr boiler	1419.12 coal	1419.12 coal	9460.8 coal	2851.38 coal	90.05 NG	9.2 coke	1.84 waste oil	173.4 HCL Coal	174.7
002	002	6.3 MMBtu/hr boiler	11.04 oil	11.04 oil	19.3 oil	3.94 oil	0.99 oil	0.1 gas	0.0		0.003
003	003	180 ton/hr coal crusher and hopper	0.02	0.01							
FS1		Rail Car unloading to hoppers	2.69	1.27							
FS2		Coal Hopper unloading to outfeed conveyor	2.69	1.27							
FS3		Coal transfer - outfeed conveyor	2.69	1.27							
FS4		Coal transfer to stockpile	2.69	1.27							
FS5		Coal Stockpile wind erosion	2.18	1.09							
FS6		Transload coal off-site	1.12	0.53							
FS7		Coal and Coke reclaim transfer to hopper/crusher	0.81	0.38							
FS8		Main/Covered Coal Conveyor to No. 4 bunker									

	PM tpy	PM ₁₀ tpy	SO ₂ tpy	NO _x tpy	CO tpy	VOC tpy	Pb tpy	Single HAP tpy	All HAPs tpy
Total Facility Limited Potential Emissions*	1445.05	1437.25	9480.1	2855.32	91.04	9.3	0.41	173.4	0.09
Total Facility Actual Emissions*	38.03	11.55	2205.21	639.43	18.6	2.12	0.09	1.6	0.0

*These are the limited potential emissions from column 3 in GI-07 from Delta. They may differ from those in the permit application sent by the company in that they have been verified and corrected as need be by MPCA staff. These are the potential emissions that would appear in a public notice.

Table 2. Facility(TF) and Permit Classification

Classification (put x in appropriate box)	Major/Affected Source	*Synthetic Minor	*Minor
PSD (list pollutant)			
NAAR (list pollutant)			
Part 70 Permit Program (list pollutant)	NO _x , SO ₂ , PM ₁₀		

* Refers to potential emissions that are less than those specified as major by 40 CFR § 52.21, 40 CFR pt. 51 Appendix S, and 40 CFR pt. 70.

2. Regulatory and/or Statutory Basis

Summary Regulatory and/or Statutory Basis of the Emission or operational Limit

Regulatory Overview of Facility

The purpose of this table is to give a summary overview of the significant sources of emissions and the applicable regulations and standards(e.g., NESHAPs, NSPS, Title I conditions, special operating parameters) It is not designed for the discussion of specific limits or requirements, unless they are unusual and need some explanation, nor is it for the discussion of compliance demonstration requirements. This information is obtainable from the permit itself, this section is intended to provide users in the future with a quick picture of how the facility is being regulated and permitted..

*EU, GRP, or SV #	Applicable Regulations	**Comments:
EU001	Minn. R. 7007.0510	Standards of Performance for Existing Indirect Heating Equipment for SO ₂ , PM and Opacity
EU001	40 CFR § 72.9	Acid Rain Phase II SO ₂ emission allowance
EU001	Minn. R. 7045	Allowed to burn up to 5% on and off-spec used oil as defined in 7045.
EU002	40 CFR § 52.21	SO ₂ synthetic minor limit to avoid Prevention of Significant Deterioration. Limit is about 50% of syn minor limit. Requested by NSP
EU002	Minn. R. 7007.0510	Standards of Performance for New Indirect Heating Equipment for PM and Opacity
EU003, FS002, FS003, FS004, FS006, FS007 FS008	40 CFR pt. 60, Subp. Y	New Source Performance Standard for Coal Preparation Plants. Opacity limit only, due to the type of operations at the plant that are subject to subp. Y.
FS001, FS002, FS003, FS004	40 CFR § 52.21	PM synthetic minor limit to avoid Prevention of Significant Deterioration. Limit is an hours of operation limit.
FS006	40 CFR § 52.21	PM synthetic minor limit to avoid Prevention of Significant Deterioration. Limit is a throughput limit. Limit is much lower than needed for syn minor but may be needed for future modeling compliance. Requested by NSP.

* Insert the number that identifies the level the limit was set on.

** Comments column is for name of the regulation, citations that need further explanation, and to include essential data used to determine the applicability of that particular regulations, standard or permit condition.. Most rows should not have any further explanation needed and will contain only the name of the regulation.

3. Technical Information

- Total Facility:

Fugitive Emission Control Plan - This plan is required for all NSP coal facilities as a method for assuring compliance with fugitive dust control measures. However due to the location, relatively small emissions and an assumption of no greater than 40 percent control of fugitives for this facility, no recordkeeping is required

Operation and Maintenance Plan - This plan is required for all NSP facilities as a method for assuring compliance with the upkeep and operation of pollution control equipment.

Computer Dispersion Modeling - Modeling is required for NO_x, SO₂ and PM₁₀ if they have not been modeled since 1990.

Breakdown - Language has been added to clarify that notification for stack vent 001 is only necessary if a minimum number (least number during stack test) of ESP sections are not operating or if the monitored opacity exceeds the emission unit limit. If ESP section monitoring is dropped in the Control Equipment requirements, then the breakdown requirement to report when operating with fewer than the minimum sections is no longer applicable. However, if the opacity exceeds the emission unit limit this shall be reported as a breakdown even though it may not always be due to a breakdown.

- Emission Unit 001:

Unit is a listed Acid Rain Phase II source.

Allowed Fuel Types - The 0.5 percent sulfur limit for fuel oil was agreed on by NSP as an alternative way of meeting the 2.0 lb/MMBtu emission limit when burning liquid fuel. This also eliminates the need to monitor the ratio of solid to liquid fuel since the ratioed limit, which would fall between 2 and 4 lbs/MMBtu, will always be met when burning the low sulfur fuel oil and as long as the coal by itself can meet the 4 lb/MMBtu emission limit when burned alone.

Used Oil and Boiler Chemical cleaning wastes - The limits for these off-spec type fuels were chosen as a reasonable value that would allow for their destruction without causing significant harm to the environment or the public.

Performance Test - Least stringent, due to current compliance status.

Alternative Operating Conditions - STET language allows higher than normal maximum operation for a limited time period every year so that the facility can yearly test its maximum generation.

Monitoring - Continuous Emissions Monitoring System (CEMS) required for all Acid rain sources and Continuous Opacity Monitoring Systems (COMS) required by Minn. R. 7017.1000. CEM RATA requirements vary due to plants peaking status.

- Emission Unit 002:

SO₂ emission limit - taken from previous permit where it was proposed to bring the source well under the significance threshold for PSD.

Allowed Fuel Types - The 0.5 percent sulfur limit for fuel oil was agreed on by NSP as an alternative way of meeting the 0.7 lb/MMBtu emission limit when burning liquid fuel.

- Emission Unit 003:

Monitoring - Check for visible emissions was agreed on as an agency policy to be acceptable for monitoring emission control equipment at small emission units with potential emission rates under five tons/yr or where the pressure drop monitoring is considered environmentally insignificant due to the small pressure drop across the baghouse.

- Emission Unit 004:

No. 4 Coal Bunker - This emission unit has been reclassified as an insignificant activity due to the actual PM emissions of less than one ton per year, as allowed in Minn. R. 7007.1300, subp. 4.

- Control Equipment 001:

Specific Collection Area or Section Monitoring - Language has been added to reflect that this monitoring requirement can be dropped if future stack testing proves the source to be opacity limited instead of particulate mass emission limited.

- Fugitive Source 005:

No specific requirements exist for the coal stockpile except for the standard total facility requirement to control fugitive dust emissions. Later when the facility is modeled for PM₁₀, a size limit for the pile will be included to reflect the modeling. However, at this time, due to the location of the facility and the relatively small area allocated for coal storage, emissions from the coal pile are not considered to be a probable problem.

Fugitive Source 008:

This source has been considered to be subject to the NSPS subpart Y. This source was never covered in previous permits and at the time it was installed, the MPCA's policy was that subpart Y did not apply to power utilities. Therefore, this source was not permitted correctly and has never undergone the initial performance test. The source is a conveyor belt which was constructed with a cover and thus has always had some form of control. A compliance plan is included in this permit for the initial performance test for this source. Due to the plants status as a peaking plant, the test will not be required until late next summer when a test for the power boiler is also due.

Correction to above:

In a November 21, 1997, conversation with U.S. Environmental Protection Agency, Region V, specifically John Shepler, I was informed verbally that he and his supervisor, Bill McDowell believed that since the conveyor was controlled by baghouses on both the receiving and off loading ends and was covered over its entire length, no initial opacity test was practical or necessary at this time. Therefore, the requirement to maintain 20 percent opacity will remain but any reference to testing and the compliance plan for the test will be removed from the permit.

4. Conclusion

Based on the information provided by the NSP Minnesota Valley Generating Plant, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 02300012-01, 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 National Ambient Air Quality Standard or Minnesota Ambient Air Quality Standard 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, Yolanda Hernandez,
Tom Kosevich

Attachment: CD-01 Forms